

2 Million Minutes

USA
focus on

- Self esteem
- Confidence
- Sports

Other
nations

- Academic rigor
- Excellence
- Global competitiveness

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN EDUCATION 134

PAUSE--DISCUSSION

- Retool Strategies
 3. Connect CTE education to economic growth industries
 4. Listen to employers! Stop ignoring their data!

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN EDUCATION 135

Retool Strategy #5

Use CTE to Plug the Dropout Hole

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN EDUCATION 136

Dropouts

(c) 2007 Lisa Benson, Distributed by The Washington Post Writers Group. Reprinted with Permission.

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN EDUCATION 137

It is getting worse

Your child is less likely to graduate from high school than you were; the United States is now the only industrialized country where young people are less likely than their parents to earn a diploma.

Houston Chronicle, Lily Quinn, 10/23/08

Source: One-Third of a National, (ETS, 2005)

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN EDUCATION 138

Freshmen

Out of every 100 ninth graders....

Michigan Center for Career and Technical Education A Partner With MICHIGAN Education

2/8/2010 139

Freshmen

Approximately 65 will graduate from high school

Michigan Center for Career and Technical Education A Partner With MICHIGAN Education

2/8/2010 140

Freshmen

Approximately 39 will enter college

Michigan Center for Career and Technical Education A Partner With MICHIGAN Education

2/8/2010 141

Freshmen

Approximately 26 are still enrolled in the sophomore year

Michigan Center for Career and Technical Education A Partner With MICHIGAN Education

2/8/2010 142

Freshmen

Approximately 15 will graduate from college

Michigan Center for Career and Technical Education A Partner With MICHIGAN Education

2/8/2010 143

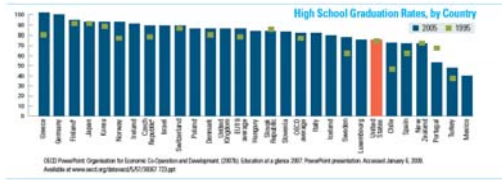
Guess Who

Who is dropping out?

Michigan Center for Career and Technical Education A Partner With MICHIGAN Education

2/8/2010 144

HS Graduation Rates, by Country

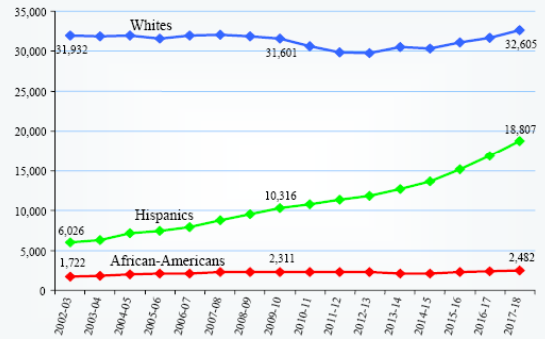


2/8/2010



145

Projected High School Graduates by Race/Ethnicity from 2002-03 to 2017-18

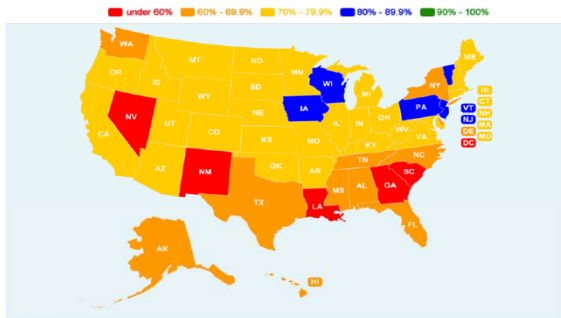


2/8/2010

Source: Western Interstate Higher Education Commission

Source: Patrick J. Kelly, NCHEMS

High School Graduation Rates



Sources: High school graduation rates for each state come from *Diplomas Count 2008*. Estimated dropouts for the Class of 2008 come from *Dropouts, Diplomas, and Dollars: U.S. High Schools and the Nation's Economy*.

2/8/2010



147

Michigan Dropout Factories

- High Schools in which the number of seniors is routinely 60% or fewer than the number of freshmen three years earlier.

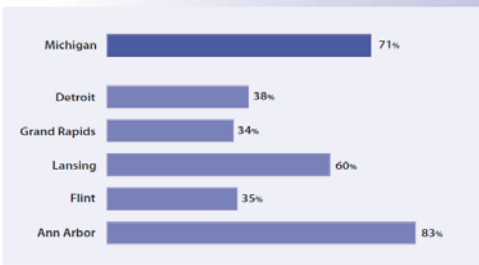
| | Number of Federally Reported Regular High Schools | Number of Dropout Factories | Percent of High Schools |
|----------|---------------------------------------------------|-----------------------------|-------------------------|
| Michigan | 603 | 91 | 15% |
| US | 15,813 | 1,906 | 12% |

Source: National Center for Education Statistics, 2008 and Center for Social Organization of Schools, Johns Hopkins University, 2009

2/8/2010

High School Graduation Rates

LOW GRADUATION RATES IN MICHIGAN



2003-04 Graduation Rates, Editorial Projects in Education Research Center, 2007

2/8/2010



149

Michigan High School Graduation Rates by Race (Class of 2005)

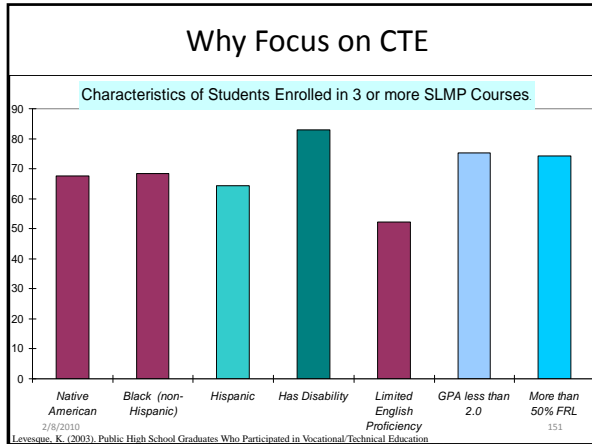
| | Michigan | Nation |
|-----------------|----------|--------|
| All Students | 71% | 71% |
| White | 77% | 78% |
| Black | 42% | 55% |
| Hispanic | 46% | 58% |
| Asian | 76% | 81% |
| Native American | 48% | 51% |

Source: Editorial Projects in Education Research Center, 2008

2/8/2010



150



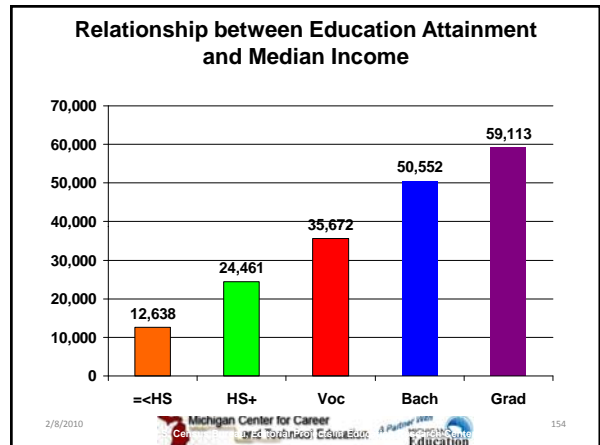
Consequences of dropping out

2/8/2010
Michigan Center for Career and Technical Education
A Partner With MICHIGAN Education 152

MESSAGE

Education =
More money

2/8/2010
Michigan Center for Career and Technical Education
A Partner With MICHIGAN Education 153

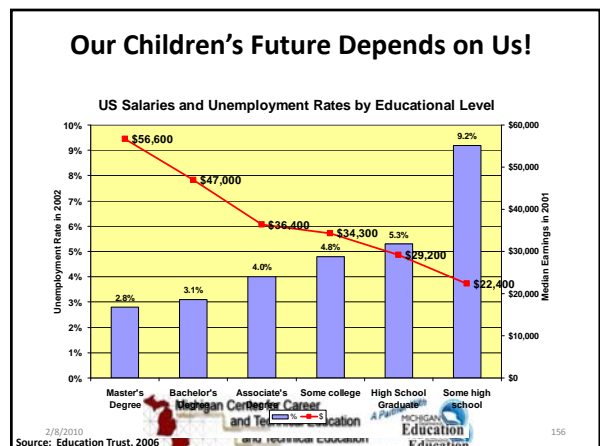



Estimated Additional Lifetime Income if High School Dropouts Graduated with Their Class in 2007-08

| State | Estimated Graduate Rate 2004-2005 | Projected Number of Graduates for the Class of 2008 | Total Lifetime Additional Income if Dropouts Graduated |
|----------|-----------------------------------|-----------------------------------------------------|--------------------------------------------------------|
| Michigan | 70.5% | 45,305 | \$11,779,231,750 |
| US | 70.6% | 1,229,277 | \$319,611,922,500 |

Source: Dropouts, Diplomas, and Dollars: U.S. High Schools and the Nation's Economy, Alliance for Excellent Education, August, 2008

2/8/2010
Michigan Center for Career and Technical Education
A Partner With MICHIGAN Education 155





"The one million students who drop out of high school each year cost our nation more than \$260 billion dollars.

- That's in lost wages, lost taxes, and lost productivity over their lifetimes...

Business, political and education leaders are regularly sounding the alarm.

When we lose a million students every year that has a tremendous impact on our economy. And it represents the American Dream...denied."

- Margaret Spellings, U.S. Secretary of Education

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 157

INCREASING GRADUATION RATES CUTS MURDERS & ASSAULTS
ANNUAL IMPACT IF HIGH SCHOOL GRADUATION RATES INCREASED 10 PERCENTAGE POINTS

| | Murders Prevented | Aggravated Assaults Prevented |
|-----------------|-------------------|-------------------------------|
| Michigan | 140 | 7,300 |
| Detroit | 71 | 2,700 |
| Grand Rapids | 2 | 240 |
| Lansing | 2 | 210 |
| Flint | 10 | 400 |
| Ann Arbor | — | 44 |

2003-04 Graduation Rates, Editorial Projects in Education Research Center, 2007

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 158

The Best Economic Stimulus is a Diploma



2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 159

Students who earn a CTE-related associate's degree or certificate can make

- An average of \$9,000 more a year
 - than an average individual with a humanities- or social sciences-focused associate's degree –
- An average of almost \$20,000 more a year
 - with credentials in high-demand fields such as healthcare

(Jacobson et al., "Pathways to Boosting the Earnings of Low-Income Students by Increasing Their Educational Attainment," Gates Foundation/Hudson Institute, 2009.)

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 160

MESSAGE

Education = Less chance of unemployment

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 161

Unemployment Rates

| | May, 2009 | March, 2009 |
|--------------------------------|-----------|-------------|
| Ann Arbor | 9.1 | 7.8 |
| Battle Creek | 12.7 | 11.4 |
| Bay City | 12.5 | 11.5 |
| Detroit-Warren-Livonia | 14.9 | 13.5 |
| Flint | 16.5 | 14.2 |
| Jackson | 14.1 | 12.7 |
| Kalamazoo-Portage | 10.8 | 9.7 |
| Lansing-East Lansing | 11.3 | 9.6 |
| Monroe | 16.2 | 14.3 |
| Niles-Benton Harbor | 12.8 | 11.6 |
| Saginaw-Saginaw Township North | 13.5 | 11.8 |
| Upper Peninsula | 12.6 | 12.9 |
| Northeast Lower Michigan | 15.1 | 16.4 |
| Northwest Lower Michigan | 13.7 | 13.1 |
| Michigan Overall | 13.9 | 12.6 |

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 162

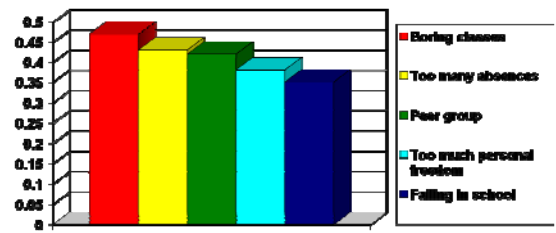
Why are they dropping out?



Michigan Center for Career and Technical Education

163

Why do they leave?

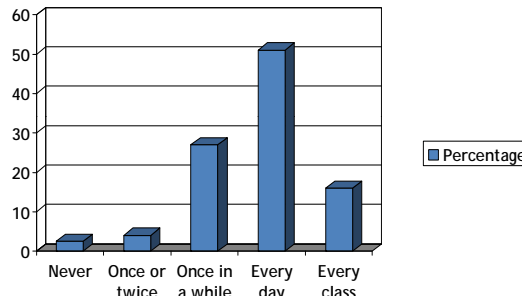


Source: The silent epidemic: Perspectives of high school dropouts – Civic Enterprises, 2006

Michigan Center for Career and Technical Education

164

Have you ever been bored in class?




Source: 2008 HSSSE

Michigan Center for Career and Technical Education

165

If you have been bored in class, why?

- Material not interesting
- Material wasn't relevant to me
- No interaction with teacher
- Work wasn't challenging enough
- Work was too difficult
- Other



Source: 2008 HSSSE

Michigan Center for Career and Technical Education

166

CTE's combination of

- classroom instruction,
- hands-on-laboratory work, and
- on-the-job training

meets students' different learning styles.

Michigan Center for Career and Technical Education

167

Alliance for Excellent Education

Each day, 3000 students dropout of high school

The report suggests that the mix of CTE, academics, and fine arts

lowers the dropout rate for students

because the course balance offers a broader array of experience that can identify and encourage a specific route to success.

Alliance for Excellent Education, Dropout Factories, 2008
<http://www.aeed.org/> (see the bbial database)

Michigan Center for Career and Technical Education

168

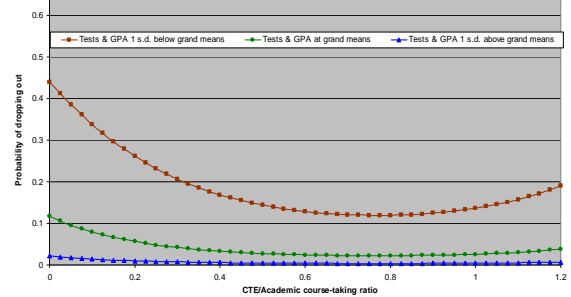
A ratio of one CTE class for every two academic classes minimizes the risk of students dropping out of high school.

(Plank et al, "Dropping Out of High School and the Place of Career and Technical Education," National Research Center for CTE, 2005)

2/8/2010

169

CTE and School Engagement



2/8/2010
Plank, 2001

170

ALL MEANS ALL

NOT
SOME / MOST / MANY

2/8/2010

171

Retool Strategy #6

Develop seamless transition to college

2/8/2010

172

Seamless Transition Means

Eliminate the need for remedial coursework as they enter college

AND

Stop the duplication of content

2/8/2010

173

Why is this important?



2/8/2010

174

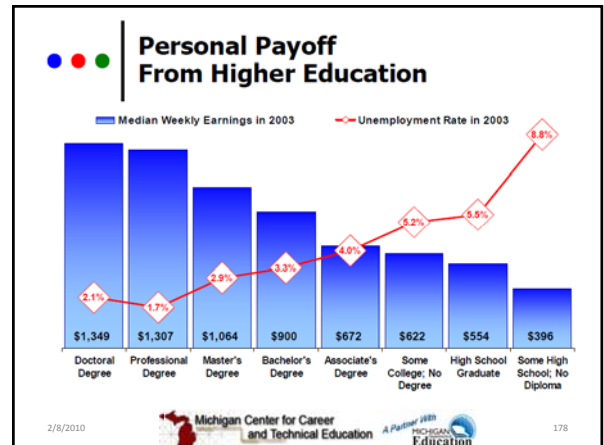
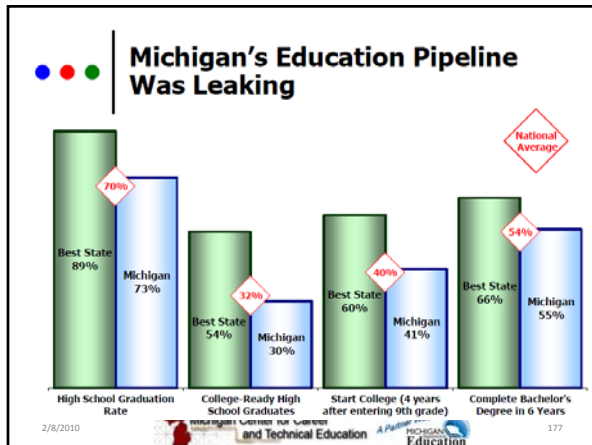
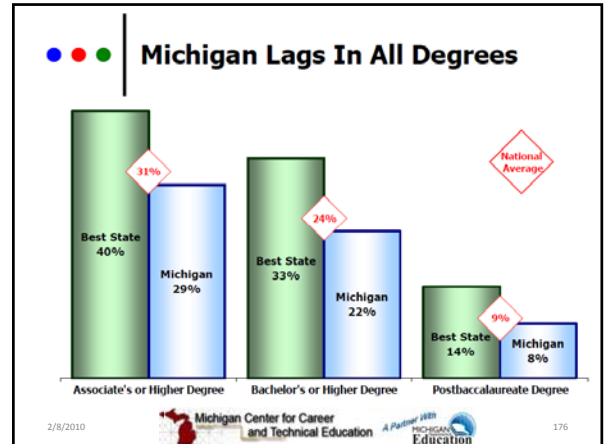
Perkins IV and data requirements

Common Standards

Common Assessments

Programs of Study

2/8/2010
175



Who Makes it to College in Michigan

Who makes it to college?
Comparison of the high school graduating class of 2006 with enrollments in the state's public colleges and universities

| | High School Graduates, Spring 2006 | Two-Year Public College Enrollment, 2006-07 | Four-Year Public College Enrollment, 2006-07 |
|------------------|------------------------------------|---------------------------------------------|----------------------------------------------|
| African American | 14% | 15% | 11% |
| Asian | 3% | 2% | 4% |
| Latino | 3% | 3% | 3% |
| Native American | 1% | 1% | 1% |
| White | 80% | 67% | 77% |
| Other | N/A | 12% | 5% |
| Total | 100% | 100% | 100% |
| Number | 102,296 | 359,556 | 241,599 |

2/8/2010
179

Who Graduates from College in Michigan

Who graduates from public colleges and universities?
Percentage of first-time, full-time college freshmen in 2000 who received a bachelor's degree by 2004 and 2006

| | Four-Year Grad Rate, 2004 | Six-Year Grad Rate, 2006 | Top States' Six-Year Grad Rates, 2006* |
|------------------|---------------------------|--------------------------|----------------------------------------|
| African American | 17% | 40% | 52% |
| Asian | 50% | 74% | 72% |
| Latino | 29% | 56% | 67% |
| Native American | 18% | 43% | 60% |
| White | 31% | 61% | 71% |
| Overall | 30% | 59% | 66% |

*Median of top five performing states

2/8/2010
180

What proportion of adult have bachelor's degrees

What proportion of adults has earned a bachelor's degree?
 Percentage of adults 25 and older with a bachelor's degree or higher in 2006

| | Michigan | Top States' Degree Attainment* |
|------------------|----------|--------------------------------|
| African American | 15% | 33% |
| Asian | 83% | 88% |
| Latino | 15% | 29% |
| Native American | 13% | 24% |
| White | 25% | 40% |
| Overall | 24% | 35% |

*Median of top five performing states

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN EDUCATION 181

Michigan College Graduation Rates by Race (Class of 2005)

| | Four Year Institutions (with 6 years of entrance and cohort 2000-2006) | National Average | Two Year Institutions (within three years, cohort 2003-2006) | National Average |
|-----------------|------------------------------------------------------------------------|------------------|--------------------------------------------------------------|------------------|
| All Students | 55% | 56% | 20% | 32% |
| White | 58% | 59% | 20% | 33% |
| Black | 33% | 41% | 25% | 27% |
| Hispanic | 50% | 48% | 14% | 34% |
| Asian | 71% | 66% | 15% | 34% |
| Native American | 40% | 39% | 13% | 29% |

Source: National Center for Education Statistics, 2007

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN EDUCATION 182

College Affordability by State

College Affordability
How expensive is college for low-income families?
 Share of income poor families pay for tuition at four-year public institutions

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN EDUCATION 183

Help for Low-Income Families?

How does your state help low-income families pay for college?
 Need-based state aid as a percentage of average tuition, 2006

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN EDUCATION 184

Remediation

Nearly 30% of HS Graduates Require Some Remediation

Source: NCES 2003, Remedial Education at Degree Granting PS Institutions in Fall, 2000

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN EDUCATION 185

Remediation--National

Once many of these same students get into college, % requiring remediation

- 40% of four-year students and
- 63% of two-year students

A report from Education Commission of the States

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN EDUCATION 186

Benefits of Developmental/Remedial Education

- greater access
- higher retention
- higher completion rates

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 187

Developmental / Remedial Education The Issues

According to the Cherry Commission 68% (48,000) of Michigan's high school graduates are under-prepared for higher education.

Proportionately the number for African Americans and Hispanics is even higher.

This number does not include the "Return to Learn" students (estimated to be 1.5 million) who will likely require some type of remediation

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 188

Developmental / Remedial Education Findings

Annual Cost of Developmental Education in Michigan:

- Community Colleges: \$65-\$80 million annually
- Four Year Colleges: \$17-\$24 million annually

Source: Mackinaw Center for Public Policy

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 189

Program of Study

December 2008

Learner Name _____ Date _____
 Learner Signature _____ Advisor Signature _____
 Parent/Guardian Signature (if required) _____

This plan of study should serve as a guide, along with other career planning materials, as you continue your career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. All plans must meet high school graduation requirements as well as college entrance requirements.

| | 9 th Grade | 10 th Grade | 11 th Grade | 12 th Grade |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| High School | English 9 | English 10 | English 11 | English 12 |
| | Algebra I* | Geometry | Algebra II | Math Credit |
| | Biology | Chemistry or Physics | Calculus | Science Credit |
| | US History/Geography | World History/Geography | Career and Technical Education Options | Finance and Financial Management Services – 52.0800 |
| PE/Health*** | Fine Arts/Music/Visual Performing/and Applied Arts | World Language** | | |
| Proprietary Programs | <input type="checkbox"/> Accounting Services <input type="checkbox"/> Financial Services <input type="checkbox"/> Insurance Services | | <input type="checkbox"/> Banking & Financial Support Services <input type="checkbox"/> Actuarial Sciences <input type="checkbox"/> Accounting <input type="checkbox"/> Finance | |
| | <input type="checkbox"/> Business & Computer Technology <input type="checkbox"/> Help Desk Analysis <input type="checkbox"/> Business & Administration Services <input type="checkbox"/> Accounting Services | | <input type="checkbox"/> Accounting <input type="checkbox"/> International Business <input type="checkbox"/> Market Management & Research <input type="checkbox"/> Operations, Management & Supervision | |
| | <input type="checkbox"/> Business & Administration Services <input type="checkbox"/> Accounting Services | | <input type="checkbox"/> Accounting <input type="checkbox"/> International Business <input type="checkbox"/> Market Management & Research <input type="checkbox"/> Operations, Management & Supervision | |
| Career Enhancement Options | Work Based Learning Leadership/Teamwork (BPA) Internship/Mentorship Job Shadowing (Loan Officer) Business Writing Business Communications Entrepreneurial Training | | Basic Insurance Ethics in Financial Services Peachtree for Windows Quicken/MS Pro Payroll Reporting Requirements Bank Services | |
| | For more information www.michigan.gov/cte | | | |

*Could be completed in 8th grade
 **not completed at the 3rd-8th grade level
 ***could be completed in the 11th or 12th grade to provide electives

190

Program of Study

December 2008

Learner Name _____ Date _____
 Learner Signature _____ Advisor Signature _____
 Parent/Guardian Signature (if required) _____

This plan of study should serve as a guide, along with other career planning materials, as you continue your career path. All plans must meet high school graduation requirements as well as college entrance requirements.

| | 9 th Grade | 10 th Grade | 11 th Grade | 12 th Grade |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| High School | English 9 | English 10 | English 11 | English 12 |
| | Algebra I* | Geometry | Algebra II | Math Credit |
| | Biology | Chemistry or Physics | Calculus | Science Credit |
| | US History/Geography | World History/Geography | Career and Technical Education Options | Business Administration Management & Operations – 52.0299 |
| PE/Health*** | Fine Arts/Music/Visual Performing/and Applied Arts | World Language** | | |
| Proprietary Programs | <input type="checkbox"/> Business & Computer Technology <input type="checkbox"/> Help Desk Analysis <input type="checkbox"/> Business & Administration Services <input type="checkbox"/> Accounting Services | | <input type="checkbox"/> Accounting <input type="checkbox"/> International Business <input type="checkbox"/> Market Management & Research <input type="checkbox"/> Operations, Management & Supervision | |
| | <input type="checkbox"/> Business & Computer Technology <input type="checkbox"/> Help Desk Analysis <input type="checkbox"/> Business & Administration Services <input type="checkbox"/> Accounting Services | | <input type="checkbox"/> Accounting <input type="checkbox"/> International Business <input type="checkbox"/> Market Management & Research <input type="checkbox"/> Operations, Management & Supervision | |
| | <input type="checkbox"/> Business & Administration Services <input type="checkbox"/> Accounting Services | | <input type="checkbox"/> Accounting <input type="checkbox"/> International Business <input type="checkbox"/> Market Management & Research <input type="checkbox"/> Operations, Management & Supervision | |
| Career Enhancement Options | Work Based Learning Leadership/Teamwork (Skills USA) Internship/Mentorship Job Shadowing (Business Administration) Entrepreneurial Training Business Communications Business Writing | | Certified Help Desk Analyst Certified Administrative Manager Microsoft Certified Professional Business Plan Development Customer Service Marketing, Advertising and Public Relations Conversational Spanish | |
| | For more information www.michigan.gov/cte | | | |

*Could be completed in 8th grade
 **not completed at the 3rd-8th grade level
 ***could be completed in the 11th or 12th grade to provide electives

191

Program of Study

December 2008

Learner Name _____ Date _____
 Learner Signature _____ Advisor Signature _____
 Parent/Guardian Signature (if required) _____

This plan of study should serve as a guide, along with other career planning materials, as you continue your career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. All plans must meet high school graduation requirements as well as college entrance requirements.

| | 9 th Grade | 10 th Grade | 11 th Grade | 12 th Grade |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High School | English 9 | English 10 | English 11 | English 12 |
| | Algebra I* | Geometry | Algebra II | Math Credit |
| | Biology | Chemistry or Physics | Calculus | Science Credit |
| | US History/Geography | World History/Geography | Career and Technical Education Options | Computer Programming/Programmer – 11.0201 Digital/Multimedia and Information Resources Design – 11.0201 Computer Systems Networking and Telecommunications – 11.0601 System Administration/Administrator – 11.1001 |
| PE/Health*** | Fine Arts/Music/Visual Performing/and Applied Arts | World Language** | | |
| Proprietary Programs | <input type="checkbox"/> Business and Computer Technology <input type="checkbox"/> Commerce and Web Services <input type="checkbox"/> Information Services <input type="checkbox"/> Network Services <input type="checkbox"/> Cyber Security | | <input type="checkbox"/> Computer Program and Computer Science <input type="checkbox"/> Graphic Design and Visual Communications <input type="checkbox"/> E-Commerce <input type="checkbox"/> Computer Information Systems <input type="checkbox"/> Information Technologies | |
| | <input type="checkbox"/> Business & Computer Technology <input type="checkbox"/> Commerce and Web Services <input type="checkbox"/> Information Services <input type="checkbox"/> Network Services <input type="checkbox"/> Cyber Security | | <input type="checkbox"/> Accounting <input type="checkbox"/> International Business <input type="checkbox"/> Market Management & Research <input type="checkbox"/> Operations, Management & Supervision | |
| | <input type="checkbox"/> Business & Administration Services <input type="checkbox"/> Accounting Services | | <input type="checkbox"/> Accounting <input type="checkbox"/> International Business <input type="checkbox"/> Market Management & Research <input type="checkbox"/> Operations, Management & Supervision | |
| Career Enhancement Options | Work Based Learning Leadership/Teamwork (BPA) Internship/Mentorship Job Shadowing Entrepreneurial Training | | Advanced Networking Desktop Certifications Linux I and II Windows XP Network + Internet Network and Security | |
| | For more information www.michigan.gov/cte | | | |


*Could be completed in 8th grade
 **not completed at the 3rd-8th grade level
 ***could be completed in the 11th or 12th grade to provide electives

192

Dual Enrollment--National

Enable HS students to enroll in college course and earn college credit

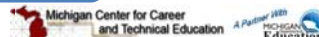
2005 study indicates that 71% of HS and 51% of PS institutions permit dual enrollment



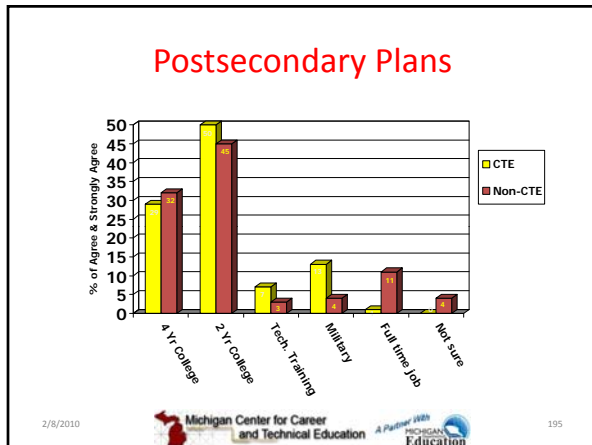
2/8/2010 193

Dual Enrollment – Michigan 2003-04 known as Credit Based Transitions

- Only 1.7% of all Michigan high school students
 - took part in dual enrollment opportunities.
- Only 7.2% of Michigan high school students participate in
 - Participated in Credit Based Transitions, when combined with the number of students enrolled in AP courses
- The Cherry Commission has set a goal of 50% participation by 2015.

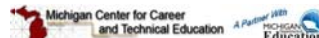


2/8/2010 194



STOP PAUSE-DISCUSSION

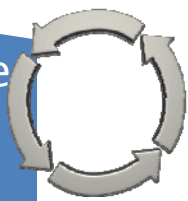

- Retool strategies
 - Use CTE to plug the dropout hole
 - Develop seamless transitions to college



2/8/2010 196

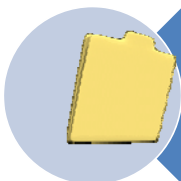

Retool Strategy #7

REALLY Embrace continuous improvement

2/8/2010 197

Demand Data

2/8/2010 198

Test is not a four letter word!

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 199

Continuous Improvement Requires Data

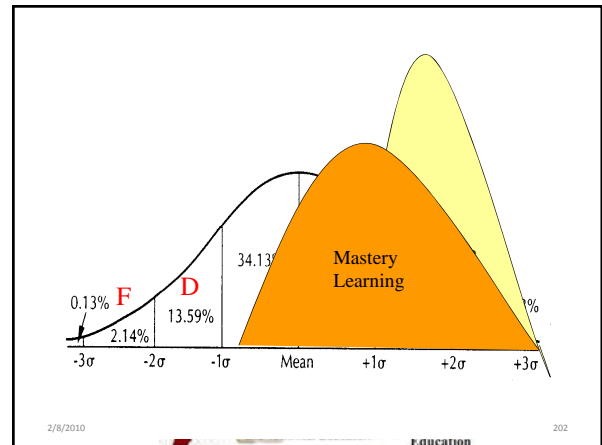
2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 200

Plan-Do-Check-Act (PDCA) Cycle

Shorthand for testing a change by developing a plan to

- Develop a plan for improving quality at a process (Plan)
- Execute the plan, first on a small scale (Do)
- Evaluate feedback to confirm or to adjust the plan (Study) (Check)
- Make the plan permanent or study the adjustments (Act)

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 201



Mastery Learning

```

    graph LR
      I1[Instruction in Unit 1] --> FT1[Formative Test A]
      FT1 --> C[Correctives]
      C --> FT2[Formative Test B]
      FT2 --> EA[Enrichment Activities]
      EA --> I2[Instruction in Unit 2]
  
```

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 203

Mastery Learning

```

    graph LR
      U1((Unit 1)) --> FT1[/Formative Test A/]
      FT1 --> CA[/Corrective activities/]
      CA --> FT2[/Formative Test B/]
  
```

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 204

Corrective cannot be...

Michigan Center for Career and Technical Education
A Partner With MICHIGAN Education

2/8/2010 205

Mastery Learning

Michigan Center for Career and Technical Education
A Partner With MICHIGAN Education

2/8/2010 206

Standardized Assessment Development

Michigan Center for Career and Technical Education
A Partner With MICHIGAN Education

2/8/2010 207

Data is analyzed to determine mastery

| Item | Q001 | Q002 | Q003 | Q004 | Q005 | Q006 | Q007 | Q008 | Q009 | Q010 | Q011 |
|-----------|-------|------|------|------|------|------|------|------|------|------|------|
| Task Link | A1 | A1 | A1 | A1 | A1 | A1 | A1 | A2 | A2 | A2 | A2 |
| Key | 4 | 4 | 1 | 2 | 3 | 3 | 1 | 1 | 1 | 3 | 1 |
| Adam | 87.2% | | 2 | | | | | | | | |
| Randy | 77.4% | | 2 | | | | 3 | 4 | | | |
| David | 76.6% | | 2 | | | | | 2 | 2 | | |
| George | 74.0% | | 2 | | | | | | 2 | | 4 |
| Joe | 69.4% | 3 | 2 | 1 | | | | | 2 | | |
| Chris | 68.5% | | 2 | | | | | | | 3 | |
| Mary | 68.1% | | 2 | 3 | | | | | | | |
| Laura | 66.4% | | 2 | | | | | 4 | | | 4 |
| Ali | 64.7% | 1 | 2 | 2 | 4 | 2 | | | | 3 | |
| Tom | 63.4% | | | 4 | | | | 2 | | | |
| Jack | 62.1% | | | 3 | 1 | | | 2 | 2 | | |
| Sid | 61.3% | 3 | | 2 | 1 | | | | 2 | | |
| James | 58.3% | 3 | 3 | 3 | 1 | 2 | | 4 | | 3 | |
| Steve | 57.9% | 3 | 2 | 1 | | | | 4 | 2 | | |
| Mike | 26.8% | 2 | | 2 | 4 | 2 | 1 | 4 | 2 | 4 | 1 |

Michigan Center for Career and Technical Education
A Partner With MICHIGAN Education

2/8/2010 208

Retool Strategy #8

Aggressively Promote CTE in Your Local Area

Michigan Center for Career and Technical Education
A Partner With MICHIGAN Education

2/8/2010 209

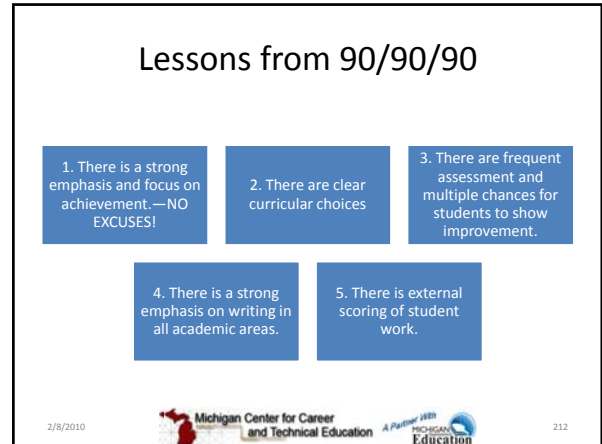
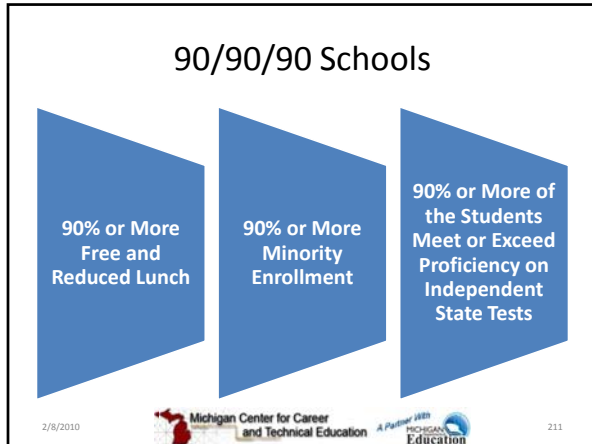
Willard R. Daggett, Ed.D., President of the International Center for Leadership in Education

Academics
CTE
ARTS

America's Top Performing Schools

Michigan Center for Career and Technical Education
A Partner With MICHIGAN Education

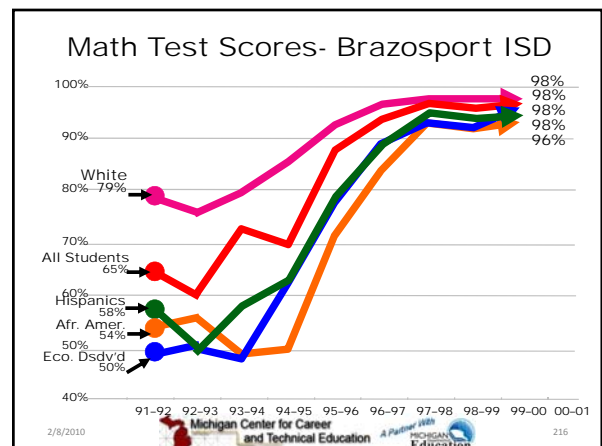
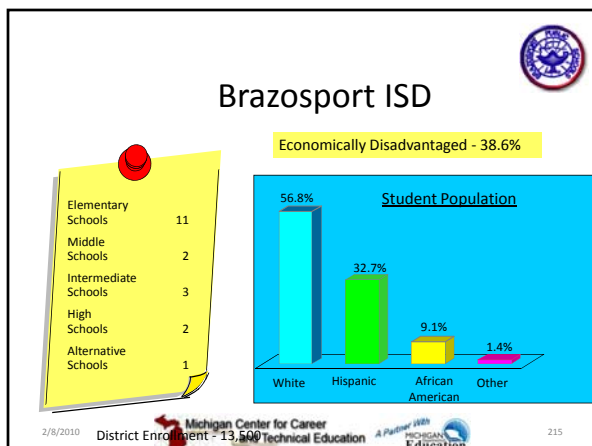
2/8/2010 210

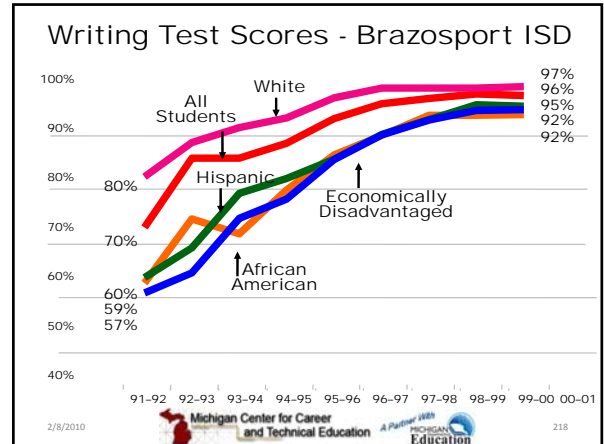
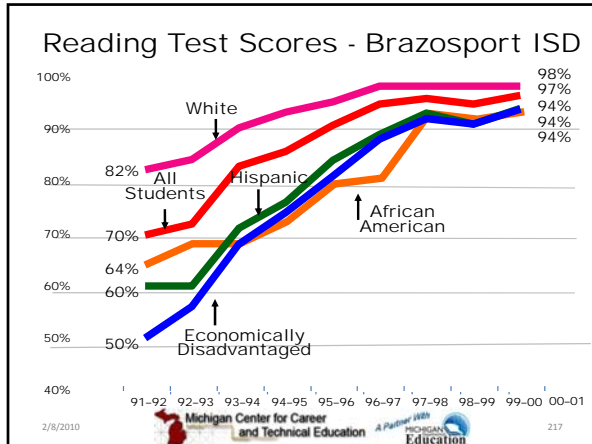


BISD: A Quality and Effective School District with a Belief

We will teach all children

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 214





CTE—The Good News

- CTE does not necessarily limit postsecondary education (NAVE, 2004; Stone & Allaga, 2004; but see Deluca et al., forthcoming)
- There is evidence that math and science course taking by CTE students is increasing: amount and complexity (NAVE, 2004; Stone & Allaga, 2004)
- CTE as a function of the HS experience reduces the probability of dropping out of school (Plank, 2001)
- CTE is an economic value to the individual and the community (ROI) (Bishop & Mane, 2004; NAVI, 2004; Hollenbeck, 2001)
- It is possible to “major” in CTE and Academics (NAVE, 2004)
- *A decade of reform (Perkins II & III, STWOA) is beginning to have an effect*

CTE – an Integral part of a Successful School System

CTE plays a critical role in:

- Dropout prevention and recovery
- Students’ successful transition from secondary to postsecondary schools
- Global competitiveness

High-quality CTE is the bridge that can close this big gap by more directly linking education to a student’s future success in today’s highly competitive workforce.

CTE can ensure Michigan’s future in the global economy through increased

- student engagement,
- better integration of math, science and literacy skills, and
- by meeting the needs of employers and the economy as a whole.

A Retooled CTE

| NOW | RETOOLED |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Technical skills in isolation Teachers focus on technical content | Technical preparation supported and enhanced by rigorous academics and employability skills |
| Preparation for a job | Career preparation for lifelong mobility and advancement starting broad in secondary education |
| "It's okay for your kid but not my kid" | Dual preparation for college and career. Going to school with purpose is important for all students |
| Compliance driven, program focused, instruction centered | Performance driven, Industry focused, based on identified essential knowledge and skills Student centered |

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 223

PAUSE-DISCUSSION

- Retool strategies
 7. REALLY Embrace continuous improvement
 8. Aggressively promote CTE in your local area

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 224

- ### Retool—Reorganize or Rearrange
1. Use CTE to improve Academic Test Score
 2. Really Embrace Career Clusters
 3. Connect CTE to economic growth industries
 4. Listen to employers! Stop ignoring their data!
 5. Use CTE to plug the dropout hole
 6. Develop seamless transition to college
 7. REALLY embrace continuous improvement
 8. Aggressively promote CTE in your local area
- 2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 225

We've Got a Choice....

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 226

Or, Stick Our Necks Out and Move Forward!!

2/8/2010 Michigan Center for Career and Technical Education A Partner With MICHIGAN Education 227