

**MINNESOTA STATE COLLEGES AND UNIVERSITIES  
BOARD OF TRUSTEES**

**Agenda Item Summary Sheet**

**Committee:** Academic and Student Affairs

**Date of Meeting:** November 17, 2009

**Agenda Item:** Study Session: Technical Education

- Proposed Policy Change       Approvals Required by Policy       Other Approvals       Monitoring
- Information

**Cite policy requirement, or explain why item is on the Board agenda:**

This item was placed on the agenda at the request of the Committee Chair.

**Scheduled Presenter(s):**

Linda L. Baer, Senior Vice Chancellor for Academic and Student Affairs  
Manuel M. López, Associate Vice Chancellor

**Outline of Key Points/Policy Issues:**

- Enrollment in career and technical education has remained stable over the last five years.
- Customized training enrollments have increased in the last five years.
- As recently as 2007 Minnesota ranked first regionally in both actual post-secondary career and technical education enrollments and population-standardized post-secondary career and technical education enrollments.

**Background Information:**

The Board of Trustees, through discussions of the Academic and Student Affairs committee, raised questions about career and technical education. The Board of Trustees is concerned because there is a perception of a declining emphasis on career and technical education in Minnesota. Some have called this “detechnification.”

**BOARD OF TRUSTEES  
MINNESOTA STATE COLLEGES AND UNIVERSITIES  
*INFORMATION ITEM***

**Study Session: Technical Education**

1  
2 **BACKGROUND**  
3

4 The Board of Trustees, through discussions of the Academic and Student Affairs committee, raised  
5 questions about career and technical education. The Board of Trustees is concerned because there is a  
6 perception of a declining emphasis on career and technical education in Minnesota. Some have called  
7 this “detechnification.”  
8

9 **SUMMARY**  
10

11 The initial review indicates that while career and technical education has decreased as a relative  
12 proportion of overall enrollment, it continues to be stable in an absolute sense and responsive to  
13 Minnesota’s needs. The system is not in imminent danger of “detechnifying” its programmatic or course  
14 offerings as demonstrated by:  
15

- 16 • Enrollment in career and technical education has remained stable over the last five years.
- 17 • Customized training enrollments have increased in the last five years.
- 18 • The Office of the Legislative Auditor notes that “the Minnesota State Colleges and Universities  
19 (MnSCU) system generally does a good job of assessing economic conditions and workforce  
20 needs ...”
- 21 • General education is a desirable, growing and necessary component of preparing an individual to  
22 be occupationally competent.
- 23 • Even under the current adverse economic conditions we are experiencing a greater number of  
24 additions (215) than removals (167) in career and technical programs.
- 25 • As recently as 2007 Minnesota ranked first regionally in both actual post-secondary career and  
26 technical education enrollments and population-standardized post-secondary career and technical  
27 education enrollments.  
28

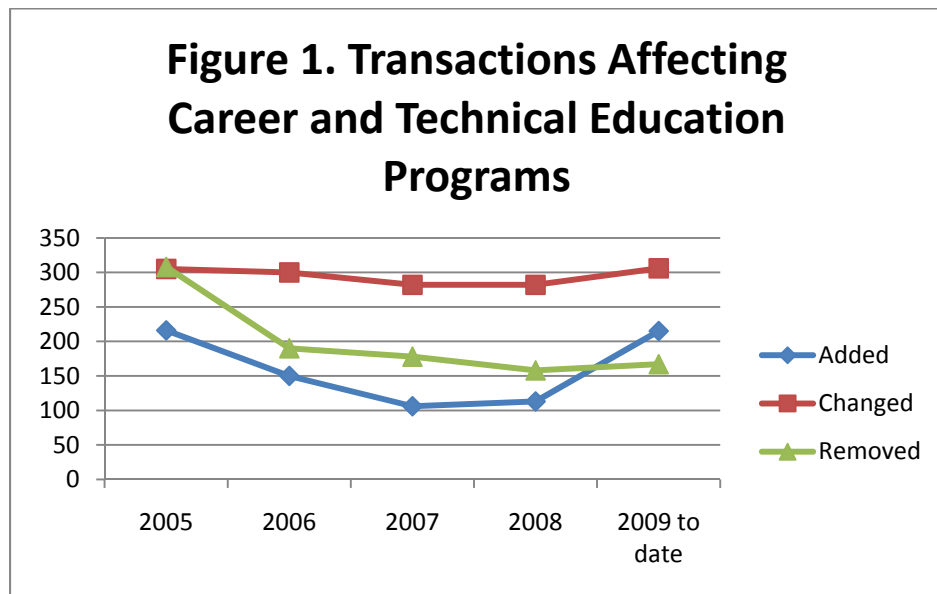
29 **REPORT**  
30

31 This study session focuses on the character and extent of career and technical education in Minnesota.  
32 The report offers a brief presentation of trends and issues in career and technical education to support  
33 Board of Trustees discussion of these trends and issues within the Minnesota State Colleges and  
34 Universities.  
35  
36

1 **Program Applications**

2  
3 On the programmatic level, data for the last five years<sup>1</sup> as illustrated in Figure 1 indicate that for college  
4 career and technical education programs the primary transaction (45% of all transactions) has been  
5 program change (either a curriculum change or relocation of an existing program). Since 2005 the number  
6 of program closures has exhibited a downward trend. Program additions experienced a similar decline  
7 but have rebounded in the current year. Even under the current adverse economic conditions we are  
8 experiencing a greater number of additions (215) than removals (167) in career and technical programs in  
9 2009.

10  
11 An internal analysis shows a net reduction of only 6 programs, from 1,510 AAS and Diplomas on July 1,  
12 2008 to 1,504 AAS and Diplomas on July 1, 2009, or fourth-tenths of one percent.<sup>2</sup>



14  
15  
16 **Enrollment Trends**

17  
18 Enrollment in career and technical education has not declined markedly in the last five years (2005-2009).  
19 While overall full-year equivalent (FYE) enrollment has grown by 8.4 percent (from 80,941 to 87,776),  
20 career and technical course full-year equivalent enrollments have remained relatively stable, growing .8  
21 percent )from 38,830 in 2005 to 39,131) in 2009.<sup>3</sup>

22  
23 Compared to fiscal year 2005, the relative proportion of full year equivalent for 2009 enrollment in career  
24 and technical education courses has dropped primarily because of the greater increase in non-CTE

<sup>1</sup> The data source is the Prinsys (Program Inventory System) system “Approved program applications”

<sup>2</sup> Office of the Chancellor Research and Planning *Trends in Career and Technical Education Enrollment Minnesota State Colleges* August 31, 2009

<sup>3</sup> Source: Office of the Chancellor Research and Planning, Table 1 *Full Year Equivalent in Career and Technical Education Courses Minnesota State Colleges Fiscal Year 2005 to Fiscal Year 2009 (Preliminary)*. Headcount data exhibits a parallel trend with a growth in overall enrollment of 9.8 percent from 162,372 in 2005 to 178,285 in 2009. When comparing headcount data on the percentage of students taking at least 50 percent career and technical education coursework, there is a slight decline of 1 percent from 78,407 in 2005 to 77,635 in 2009.

1 enrollment, not because of reduced career and technical education enrollment. The combination of stable  
2 career and technical education enrollment and increased total full year equivalent enrollment means that  
3 career and technical education enrollment decreased in a relative sense, from 48 percent of total full year  
4 equivalent enrollment in 2005 to 44.6 percent in fiscal year 2009.

5  
6 While it would appear that, at least initially, students are choosing more non-CTE coursework, it should  
7 be remembered that contemporary Associate in Applied Science degrees require, as a result of  
8 accreditation standards and the need for better prepared and skilled workers, a non-CTE general education  
9 component. In the 2002 study *The Status of Occupational and Technical Education in Minnesota's*  
10 *Community and Technical Colleges*,<sup>4</sup> faculty agreed that including general education courses in career  
11 and technical programs benefited employers.

### 12 **Market Responses**

13  
14  
15 The occupational “market” also appears to be a significant factor that influences the variety of career and  
16 technical education programs. As stated in the 2002 study: “Changes in the relative importance of  
17 occupations in Minnesota also pose challenges for the occupational and technical education system”<sup>5</sup> Of  
18 the ten occupations projected in 2002 to be in highest demand by 2008, none were among the top  
19 ten in 2006 nor are they projected to be in the ten most-in-demand occupations in 2016.<sup>6</sup>

20  
21 The Office of the Legislative Auditor, in its 2009 *Evaluation Report on MnSCU Occupational*  
22 *Programs*<sup>7</sup>, stated that “the Minnesota State Colleges and Universities (MnSCU) system generally does a  
23 good job of assessing economic conditions and workforce needs ...” For example, the report identified  
24 programs that generally matched shifts in statewide employment with additions in Tourism/ Fitness/  
25 Personal Care/ Hospitality, Healthcare Support Services, Healthcare Practitioners and Technical and  
26 reductions in Production/ Manufacturing/ Repair, Sales and Related Services, and Administrative and  
27 Office Services.<sup>8</sup>

28  
29 Enrollment trends reflect adjustments to occupational markets. A few examples for the 2005-2009<sup>9</sup>  
30 timeframe make the point.

31  
32 Manufacturing: Enrollment in the manufacturing cluster registered both the largest  
33 numerical and percentage gain of any career and technical education cluster during the  
34 period. Enrollment in precision manufacturing grew by over 44 percent, and enrollment

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<sup>4</sup> *The Status of Occupational and Technical Education in Minnesota's Community and Technical Colleges*, National Center for Career and Technical Education, University of Minnesota, June 2002, Table 3.6, page 47.

<sup>5</sup> *The Status of Occupational and Technical Education in Minnesota's Community and Technical Colleges*, National Center for Career and Technical Education, University of Minnesota, June 2002, page 23.

<sup>6</sup> Ibid. and Minnesota Department of Employment and Economic Development, Long-Term Occupation Projections at <http://www.deed.state.mn.us/lmi/tools/projections/Results.aspx?dataset=1&geog=2701000000&code=>

<sup>7</sup> Office of the Legislative Auditor, Program Evaluation Division, State of Minnesota, March 2009, pages 54-55.

<sup>8</sup> Ibid., pp. 53-55.

<sup>9</sup> Source: Office of the Chancellor Research and Planning, CTE Course Trends, tables related to *Full Year Equivalent in Career and Technical Education by Career Cluster Minnesota State Colleges Fiscal Year 2005 to Fiscal Year 2009 (Preliminary)* as analyzed by the labor market analyst in the Academic Programs unit.

1 in heavy/industrial equipment maintenance grew by 207 percent. The increase probably  
2 reflects the special work of the Manufacturing and Applied Engineering Center of  
3 Excellence and its work with specific companies and industry associations to strengthen  
4 competitiveness.

5  
6 Law, Public Safety and Security: This career and technical education cluster grew at the  
7 second fastest rate of any cluster, up by 15.1 percent.

- 8  
9 1. Architecture and Construction: Enrollment in this cluster experienced the largest  
10 numerical and percentage drop of any cluster. Based on DEED-LMI seasonally  
11 adjusted data for Minnesota, the statewide number of construction wage and  
12 salary jobs has dropped by 38,700 or -29.3% from its post 2001 recession peak in  
13 February 2006 to July 2009.

14  
15 The experience with a mission change to add an Associate in Arts degree at Saint Paul College<sup>10</sup> also  
16 reflects this new reality. As stated by a Saint Paul College administrator: “The last two years the health  
17 and business programs have really grown and trade and technical have declined, but we believe that is  
18 because of the economy and we fully expect that to change as the economy recovers. We do not think  
19 that [the trade and technical declines] occurred because we added the liberal arts and sciences.”

#### 20 21 ***Business and Industry Viewpoints***

22  
23 Bryan Albrecht, former president of the Association for Career and Technical Education and president of  
24 Gateway Technical College, in Wisconsin, does not “buy the myth” that trades like welding are being  
25 shortchanged by two-year institutions: “Community colleges are very in tune with what the industry is  
26 requesting of them. A lot of times, we’re adding the use of new resources to enhance that training.”<sup>11</sup>

27  
28 As described in a recent work scan<sup>12</sup>, general education is a desirable and necessary component of  
29 preparing an individual to be occupationally competent. Associate of Applied Science degree programs  
30 are required to contain a minimum of 15 semester credit hours of general education coursework.<sup>13</sup> Well-  
31 trained and highly-skilled workers will be best positioned to secure high-wage jobs, thereby fueling  
32 American prosperity. Occupations requiring higher educational attainment are projected to grow much  
33 faster than those with lower education requirements. Growth among occupations that require an  
34 associate's degree or a post-secondary vocational award is projected to be slightly faster than occupations  
35 requiring a bachelor's degree or more. An executive for a retailer said workers in the future would need

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<sup>10</sup> E-mail exchange of September 3, 2009 between Dr. Peggy Kennedy, Vice President for Academic and Student Affairs, at Saint Paul College and Dr. Neala Schleuning, Director of Academic Programs.

<sup>11</sup> *Is Job Training Zero Sum Game?* in the September 11, 2009 issue of *Inside Higher Ed*

<sup>12</sup> *Minnesota Future Work Scan* of September 4, 2009 at <http://www.mnceme.org/minnesota-future-work-scan/>

<sup>13</sup> The now reauthorized 2006 Carl D. Perkins Career and Technical Education Act (Perkins IV) requires recipient institutions to “strengthen the academic and CTE skills of students participating in CTE programs through the integration of academics with CTE programs. Consistent with provisions of the Act, The Board of Trustees approved the Minnesota Five-Year Career and Technical Education State Plan for the Carl D. Perkins Career and Technical Education Act of 2006 on March 19, 2008. The Minnesota State Colleges and Universities’ Procedure 3.36.1 Academic Programs, Part 3, subpart B.6 establishes the 15 general education credit requirement consistent with federal Carl D. Perkins legislation and Higher Learning Commission guidelines.

1 even more interpersonal skills and a deeper understanding of budget, finance and technology. The  
2 executive felt that the Minnesota State Colleges and Universities should focus on producing graduates  
3 with a broader span of knowledge.<sup>14</sup>  
4

5 In visiting 352 Minnesota businesses, the presidents and system leaders of the Minnesota State Colleges  
6 and Universities learned about the unique characteristics of these companies and how education and  
7 training for current and future employees could benefit them.<sup>15</sup> Business leaders frequently pointed to the  
8 intellectual capital of the workforce as a key to their competitive advantage. One energy company  
9 executive said the company's success lay with the skills of its employees. But the executive added that  
10 employees' values and attitudes are so important that in the future the company would hire for attitude  
11 and train for skills.

12  
13 Business leaders overwhelmingly identified an insufficient supply of educated and skilled workers as the  
14 primary barrier to growth. Manufacturing companies specifically noted the shortage of qualified  
15 employees with skills in blueprint reading, computerized numerical control manufacturing, welding *and*  
16 *basic math*. [emphasis added]  
17

18 When asked about the skills employers sought in new employees, three themes emerged.<sup>16</sup> Business  
19 leaders spoke overwhelmingly of the need for:  
20

- 21 • Technology skills,
- 22 • Business-critical “**soft**” **skills** [emphasis added] and
- 23 • Skills necessary for emerging business practices and responding to global competition  
24

25 Given the rapid pace of technology advances noted by many business leaders, it was evident they placed a  
26 premium on employees who were willing to adapt to changing business needs. It is also clear from these  
27 responses that a close intersection exists among verbal communication, interpersonal skills and the value  
28 employers place on customer relations.<sup>17</sup>  
29

30 James Jacobs, advisory board member of the Community College Research Center and president of  
31 Macomb Community College, outside of Detroit, said that “Programs that synthesize a number of skills  
32 together ... are of more value to students than narrow training programs.”<sup>18</sup>  
33

### 34 *External Comparisons* 35

36 Nationally, the number of sub-baccalaureate credentials awarded by Title IV eligible public two-year  
37 institutions from 1997 through 2006 increased steadily (40%) while those awarded by private for-profit 2-

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<sup>14</sup> *Minnesota Future Work Scan* of September 4, 2009. See also *Workforce of the Future: Leadership Reaches Out to Business* Final Report, May 2009, Minnesota State Colleges and Universities, Office of the Chancellor, Strategic Partnerships and Workforce Development, p. 6.

<sup>15</sup> *Workforce of the Future*. Sixty-two percent of the visits were conducted with Greater Minnesota businesses, either in rural areas or midsize cities. The remaining visits were in the Twin Cities metropolitan area. These locations reflect the geographic distribution of the 32 Minnesota State Colleges and Universities.

<sup>16</sup> *Ibid.* pages 4 and 7.

<sup>17</sup> *Ibid.*, p. 6.

<sup>18</sup> *Is Job Training Zero Sum Game?* in the September 11, 2009 issue of *Inside Higher Ed*

1 year institutions increased significantly (60%) between 2000 and 2006.<sup>19</sup> The same data source indicates  
2 that while career and “academic” (in all likelihood defined narrowly as the Associate in Arts) education  
3 awards increased in roughly the same proportion, the “academic” awards grew at a significantly greater  
4 rate at the associate degree level.<sup>20</sup>

5  
6 Regionally, since 2002-2003, the Wisconsin Technical College System has experienced annual declines  
7 in the technical diplomas and vocational-adult categories with the exception of 2005-2006 when growth  
8 was minimal (less than 1% headcount growth).<sup>21</sup>

9  
10 Data from the Association for Career and Technical Education shows that as recently as 2007 Minnesota  
11 ranked first in the region for both actual secondary and post-secondary career and technical education  
12 enrollments. When controlled for population size (CTE Enrollments per 100 State population) in the  
13 region, Minnesota ranked first for post-secondary and second for all career and technical education.<sup>22</sup>

14  
15 Extending the analysis to include thirteen other states, some with very extensive career and technical  
16 education institutional capacity, Minnesota continues to rank first in post-secondary career and technical  
17 education enrollments and second in overall career and technical education enrollments when controlled  
18 for population size.<sup>23</sup>

### 19 ***Customized Training***

20  
21 The preceding discussion has described for-credit offerings in career and technical education within the  
22 Minnesota State Colleges and Universities system. Customized training is individually tailored to  
23 organizations and may be for-credit or for non-credit.

24  
25 The Minnesota State Colleges and Universities system is the leading training provider in Minnesota; each  
26 year, the colleges and universities serve about 6,000 employees and train more than 150,000 workers.

27  
28 An examination of the data (see Figure 2) indicates a steady increase in customized training headcounts  
29 between 2002 and 2009.  
30

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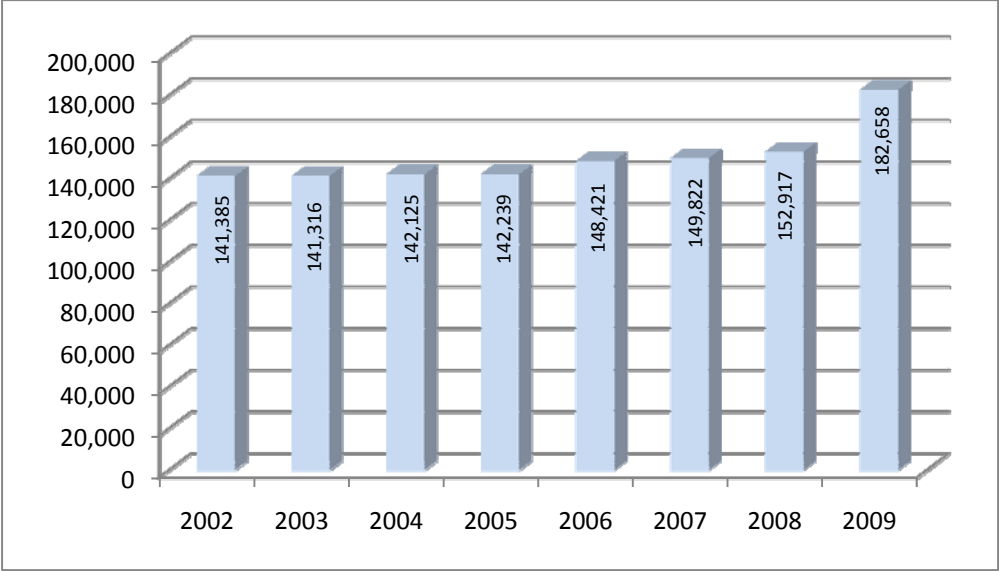
<sup>19</sup> Table P74, U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Completions and Institutional Characteristics (IC) data files, various years (e.g., report year 2006 uses IC 2006–07 and Completions 2005–06).

<sup>20</sup> Table P79, U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Completions and Institutional Characteristics (IC) data files, various years (e.g., report year 2006 uses IC 2006–07 and Completions 2005–06).

<sup>21</sup> Wisconsin Technical College System *WTCS Factbook, 2009* Madison, WI

<sup>22</sup> Region defined as Minnesota, Iowa, Wisconsin and North and South Dakota. From Association for Career and Technical Education CTE Information and Research page on their Web-site based on U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), 2001–02 and Integrated Postsecondary Education Data System (IPEDS), 2001–02; and a review by the state directors of career and technical education. See also Appendix A 2006-2007 CTE Enrollment, State Comparisons.

<sup>23</sup> Ibid.



**Figure 2. Customized Training Headcount**

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**Appendix 1: 2006-2007 data from the U.S. Department of Education on the total number of CTE students in**

STATE		Secondary CTE Enrollments		Post-secondary CTE Enrollments		Total CTE Enrollments			2007 Population Estimate			CTE Enrollments per 100 State pop			
	CTE schools 2002	Secondary:	Rank - Region	Post-secondary:	Rank - Region	Total	Rank - Region	Rank - sample	State Pop. Est	Rank - Region	Rank - sample	ps CTE only	rank	all CTE	rank
MN	29	388,598	1	142,996	1	531,594	1	3	5,182,360	2	11	2.76	1	10.26	2
IA	0	364,044	2	58,315	3	422,359	2	4	2,983,360	3	15	1.95	6	14.16	1
WI	14	49,104	3	126,779	2	175,883	3	13	5,598,893	1	10	2.26	2	3.14	14
SD	5	40,039	4	4,132	4	44,171	5	17	795,689	4	17	0.52	17	5.55	6
ND	7	35,833	5	9,145	5	44,978	4	16	637,904	5	18	1.43	9	7.05	3
IL	26	421,089		252,299		673,388		1	12,825,809		1	1.97	5	5.25	7
PA	81	112,933		78,987		191,920		12	12,432,792		2	0.64	15	1.54	17
OH	59	153,227		188,004		341,231		7	11,466,917		3	1.64	7	2.98	15
MI	62	165,079		224,383		389,462		6	10,049,790		4	2.23	3	3.88	13
NC	9	421,775		131,187		552,962		2	9,041,594		5	1.45	8	6.12	5
VA	49	313,810		81,635		395,445		5	7,698,775		6	1.06	11	5.14	8
AZ	11	142,480		137,611		280,091		8	6,353,421		7	2.17	4	4.41	10
IN	29	82,960		52,921		135,881		15	6,335,862		8	0.84	12	2.14	16
TN	24	240,036		15,331		255,367		10	6,149,116		9	0.25	18	4.15	11
SC	40	213,860		63,019		276,879		9	4,404,914		12	1.43	10	6.29	4
KY	68	177,537		29,614		207,151		11	4,236,308		13	0.70	13	4.89	9
OK	54	125,783		20,383		146,166		14	3,617,316		14	0.56	16	4.04	12
KS	1	22,723		18,717		41,440		18	2,777,382		16	0.67	14	1.49	18

Note: From **Association for Career and Technical Education** *CTE Information and Research* page on their Web-site  
Sample states chosen on "reputation" of career/technical education programming and  
U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), 2001–02 and Integrated  
Postsecondary Education Data System (IPEDS), 2001–02; and a review by the state directors of career and technical education