



## Improving Educational Outcomes in Manufacturing Engineering Technologist and Technician Education

Wisconsin Center  
for Education Research

School of Education  
UW-Madison

# METTE Research Brief

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### The Influence of Dual Enrollment and Early Academic Momentum on Two-Year Technical College Student Success

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**Abstract:** This study examined the relationship among dual enrollment, early postsecondary academic momentum, and student retention/graduation at public two-year technical colleges in Wisconsin. Drawing upon administrative data of all students enrolled in the Wisconsin Technical College System in 2009-2010, a path model revealed that dual enrollment had a direct, positive relationship with postsecondary retention or graduation. Dual enrollment also had indirect positive effects on retention or graduation through its direct influence on four targeted academic momentum indicators: attempted credits, delayed entry, summer enrollment, and first-term GPA. A special emphasis was placed on differentiating between students in METTE programs and their counterparts in other fields of study. Results showed that patterns described are the same across METTE and non-METTE students. The findings of this study underscore the importance of building early academic momentum to extend the benefit of dual enrollment onto later academic success.

**Key Findings:** Dual enrollment was positively associated with student retention/completion at the fourth term. More specifically, student who have participated in dual enrollment were 5% more likely to persist or graduate by the fourth term of college.

All early postsecondary academic momentum indicators were significantly associated with retention and graduation.

- Among these momentum indicators, summer enrollment turned out to be the strongest predictor of future educational success; students who took summer courses were 19% more likely to be retained at the fourth term or to graduate earlier than their counterparts.
- Students with one point higher above the group mean in their first-term GPA were 12% more likely to have persisted or graduated than students with the average first-term GPA.
- Each attempted credit was correlated with a 1% increase in the probability of students persisting to the 4<sup>th</sup> term or having graduated by then.
- Compared with otherwise similar students, those who transferred postsecondary credits were 6% more likely to be retained or to graduate.
- Students who experienced delayed entry to college were 6% less likely to

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be retained or to graduate by the 4<sup>th</sup> term.

In addition to directly influencing student outcomes, the positive impact of dual enrollment participation was partly exerted by its direct influence on four academic momentum indicators: cumulative credits attempted in the first year, delayed entry, summer enrollment, and first-term GPA. Students who participated in dual enrollment were less likely to experience delayed entry to college, but were more likely to attempt more credits, enroll during the first summer following initial postsecondary entry, and have a higher first-term GPA.

Finally, students in manufacturing programs differed from their counterparts in several academic momentum variables. METTE students tended to attempt more credits, but were less likely to take summer courses and transfer college credits. In other words, although the observed relationships operate the same way across METTE and non-METTE students, they differed in most academic momentum indicators.

**Implications:** The positive impact of dual enrollment on completion and persistence uncovered by this study suggests the need for continued efforts to strengthen dual enrollment partnerships between two-year colleges and high schools. More specifically, in developing these offerings, the focus should be on a strong alignment between dual enrollment courses and other components of the curriculum at the level of both high school and two-year colleges. Using METTE as an example, dual enrollment options in these areas must be anchored in a strong STEM curriculum at the high school and sub-baccalaureate level, which should be tightly linked with other competencies required in STEM-related educational and occupational outcomes.

It is important to educate high school students and their parents about dual enrollment options and their associated benefits so that an increasing number of students can take advantage of these options. It is equally essential that dual enrollment credits be better tracked across high schools and postsecondary education so that these credits can effectively count toward students' academic progress beyond high school to translate into real postsecondary momentum. This is especially important because students often fail to initiate transfer of their dual enrollment credits to the college they attend.

The largely positive influence of academic momentum shown in our study highlights the importance of building early academic momentum among two-year college students. Policymakers and practitioners need to design momentum-promoting policies, programs, practices, and services that specifically target the needs of the most disadvantaged students. For example, while academic advising should place an intentional focus on helping build early momentum among students, financial aid policy and practices should be used as a promising strategy to promote the academic momentum and continued participation of two-year college students and account for the often complicated life situations and competing priorities facing students who are most sensitive to affordability.

Our research also has implications on the use of statewide administrative data. At the state level, policy initiatives are needed to expand the content and use of K-16 student record data systems. More specifically, data system structures and elements should include measures aligned with robust theories for informing the personal, instructional, and contextual factors influencing student success in two- and four-year colleges and the workplace. Data system developers and vendors in the two-year college sector should be encouraged to work closely with interested colleges to develop data analysis resources. For instance, findings from this study suggest that summer enrollment and first-term GPA are major factors in ensuring on-time graduation. In the college and career planning portals used by students, these findings could be included on the pages used by students when developing or updating their

“Graduation Plans” or “Student Success Plans.” When students enter or view their first semester GPAs in their on-line “college planning tool,” sub-routines could be developed that describe the enhanced probability of graduating on time by enrolling in the upcoming summer term.

More information about student attrition in METTE programs is available in online at <http://mette.wceruw.org/>

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