

Optimizing Postsecondary Learning Outcomes FOR YOUNG ADULTS

By L Allen Phelps



To address regional skill shortages, many community and technical colleges are developing short-term, stackable credential programs in health, advanced manufacturing, engineering technology and other high-demand STEM fields. Filling these major skills gaps requires the stakeholders to rely on more and better data regarding student success. Collectively, CTE leaders and instructors, students and their parents, school counselors, college recruiters and advisers are highly motivated to make informed decisions using multiple college and labor market databases as they evaluate high-stakes, post-

high school plans or options. According to the Aspen Institute, a new era has begun “in which labor market data will be increasingly available to colleges, their students and many other actors seeking to measure and improve student success” (Aspen Institute, 2014). Moreover, according to the Data Quality Campaign, 49 states regularly match student records in K–12 and higher education systems. Doing this match assesses how “students’ ability to stay in and complete college is related to their high school courses, grades and test scores” (Data Quality Campaign, 2016).

In 2014, Fox Valley Technical College (FVTC) in Appleton, Wisconsin, and a

research team from University of Wisconsin–Madison shared the results of a longitudinal data analysis of recent (2008–2010) graduates from 20 local high schools. The goal of this study¹ was to highlight the benefits and tradeoffs of expanding dual credit courses and early career pathway opportunities to high school juniors and seniors. In Wisconsin, nearly 1 in 5 (17–18 percent) high school graduates pursues a technical college pathway following high school graduation (A. Westrich, personal communication, June 15, 2015).

For the graduates from these 20 high schools (n=2,295), nearly 30 percent of those who attended FVTC had completed



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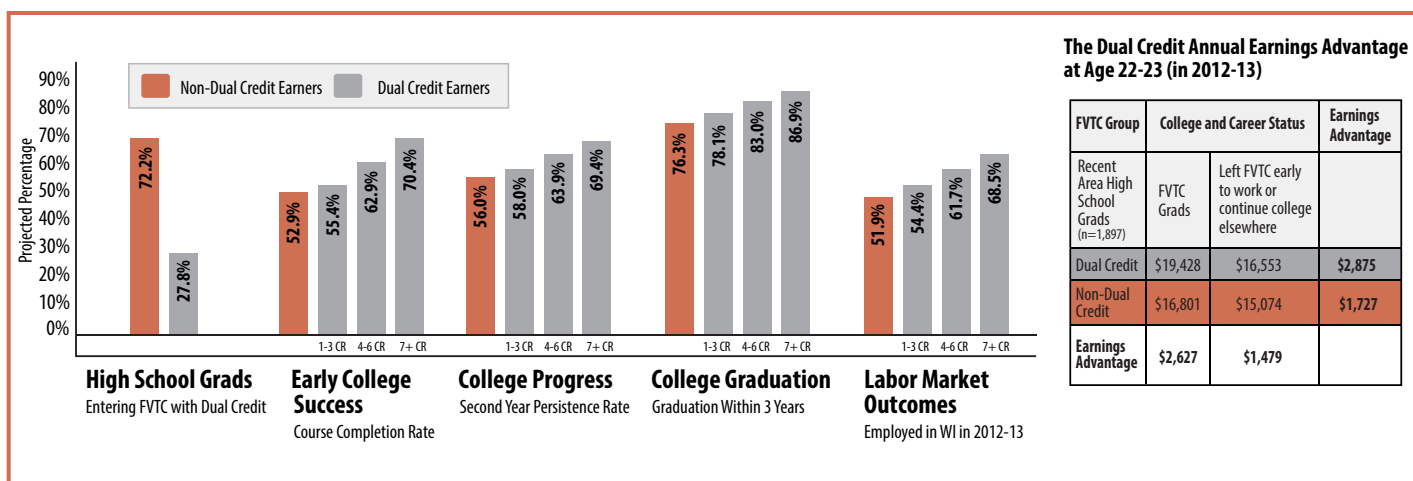
on average six dual credits (two to three courses) in high school. We used data from the state longitudinal data system and college transcripts to follow these students for five years. Specifically, we were interested in the different outcomes for students who did and did not complete dual credit CTE courses. Using a 95 percent confidence interval, the linear and logistical regression models documented a powerful pattern of positive outcomes. For example, the dual credit completers were more likely than their peers to experience significantly higher rates of early college success and retention, graduate within three years, and have higher rates of employment and earnings at age 22. As indicated in Figure 1, high school dual credit earners who graduated within three years held a \$4,354 earnings advantage (28.9 percent higher) at age 22, compared to graduates from the same schools who attended FVTC without dual credit, but left early for jobs and/or to continue college elsewhere.

Unlike other studies, this analysis also considered a number of individual and

school factors that predict student achievement beyond high school (e.g., students’ placement test scores, gender, race, high school size and diversity, etc.). This more robust analysis of CTE student success also documented other key, actionable factors. Student success rates were higher for students who enrolled directly in college after graduation, as well as for those who completed summer college courses after their freshman year. Interestingly, high school dual credit courses taught at the high school by college-certified high school CTE instructors consistently produced higher levels of student success than dual credit courses offered on campus.

Clearly, dual credit CTE courses can help to establish academic momentum—a foundation for early college and career success. In addition, deep analysis of longitudinal data can provide specific evidence-driven recommendations for students, parents, counselors and educators as they look for the best course of action in planning school-to-college-to-work-place transitions.

▼ Figure 1. Taking Dual Credit in High School: The College and Labor Market Outcomes for FVTC Students



“Luckily, we have educators and administrators coming together to address the current challenges in education with curriculum revisions and skills training. Additionally, we have conversations like the ones we had this summer [at the summit] with the additional players who will be necessary to help us tackle the problems that persist, need to be addressed and will need to be solved.”

Mining and Using Research Data for Change

So, how does the availability of more and better data lead to changes in programs, practices and/or student decision-making regarding post-high school choices? Here is our story. In January–March of 2015, teams of administrators, CTE and academic instructors, and counselors from five area high schools (Appleton West, Brillion, Kaukauna, Little Chute and Neenah) met

and previewed the FVTC regional data patterns and findings. Working closely with college institutional researchers, these teams developed deep dive project plans.

During May, June and July, these teams met for the 2015 Data and Innovation Summit to expand the data set for their graduates and discuss the literature on effective practices for CTE dual credit programs. Teams also interviewed students and educators to learn more about factors associated with the local promising practices, e.g., dual credit teaching practices or the role of counselors in recruiting students for dual credit courses. The five high school deep dive projects focused on:

- improving career academy recruitment
- developing and implementing dual credit courses that integrate technical and general content, e.g., digital electronics
- implementing a small learning community advisory section for technical college-bound seniors
- expanding the depth, breadth and quality of dual credit offerings

Quotes from summit participant logs completed during the deep dive project offered some useful insights into using data to strengthen CTE programs:

Kelly Barkovich, an English Language Arts teacher at Appleton West, stated:

“I will market the information I have learned from this data and innovation summit to my students, parents and fellow colleagues. I will continue to collect data ... that will

allow for future analysis and tracking. Now that the foundation has been established, it’s exciting to think of what can be built from this information. This experience has been quite beneficial to me. I was apprehensive to analyze the numbers, but the research has ignited [my] curiosity and stressed how important it is to share what we already know to parents and students if we want them to buy into the dual credit benefits.”

Dan Valentyn, Little Chute High School principal, said:

“The 2015 Data and Innovation Summit was an extremely valuable professional development opportunity for Little Chute High School and the Little Chute Career Pathways Academy. The high school team was able to gain knowledge in a wide range of practices and research. We were able to analyze our own local data, as well as that of other local schools and national data files using FVTC data, Wisconsin Department of Public Instruction data, National Student Clearinghouse (student tracker) data and school district data sets. This summit was especially enlightening because discussions were held with four other school districts who partnered in the study.”

Paul Endter, Appleton Technical Academy, English Language Arts Instructor, stated:

“As we move forward, we need to tackle multiple issues. We have a new generation of students with a new set of issues, yet they will ultimately need to be prepared to engage in the world of work. On the other hand, we have a business community eager for a new workforce. Luckily, we have educators and administrators coming together to address the current challenges in education with curriculum revisions and skills training. Additionally, we have conversations like the ones we had this summer [at the summit] with the additional players who will be necessary to help us tackle the problems that persist, need to be addressed and will need to be solved. I enjoyed the opportunity of



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coming together as a group and look forward to tackling the challenges collectively. ...”

Next Steps

In February 2016, several teams reported taking promising next steps.

Kaukauna High School

To enhance Kaukauna High School's (KHS) small learning community redesign, the summit team created the FVTC Advisory Group for juniors. During twice monthly advisory meetings (80 minutes per month), 35 juniors completed a number of targeted exploratory experiences

at both FVTC and at KHS. During the fall of 2015, the group made several trips to campus to observe classes, shadow students and interview instructors in career pathways, as well as to meet KHS alumni attending FVTC. FVTC instructors from high-interest programs (e.g., welding), the Tutoring Center and student services have visited KHS to hold panel discussions with the advisory group.

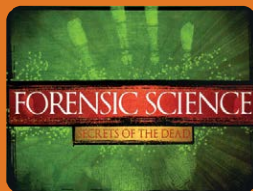
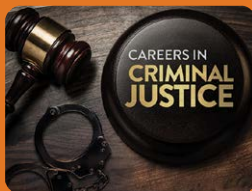
FVTC student success fact sheets and other resources created during the summit provide a foundation for previously unavailable assessment, counseling and pre-college advising experiences for juniors. Several student support activities,

like college and financial aid planning for low-income students and families, will be added to the advisory curriculum next year. In 2015–2016, KHS teachers and counselors are using the FVTC advisory group as a model for developing other advisory groups aimed at strengthening dual credit pathways with other two- and four-year colleges in the region.

Brillion High School

This past fall, the Brillion High School team shared their summit findings and products with all high school juniors during college-readiness workshops; results were also shared with the school board. The summit discussions led to adding the FVTC Written Communications course to the BHS catalog as a dual credit course. Students completing this course can earn three college credits at FVTC or at any of the other 11 two- and four-year colleges in Wisconsin.

Additionally, several data-based fact sheets were developed. The chart and tables visually describe the status and outcomes for the 2008–2010 BHS graduates attending FVTC between 2008–2010 in various career pathways. These new



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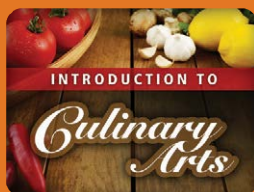


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resources were added to the individual planning folders, which are used with and given to students and their parents as they plan their junior and senior year classes and extracurricular experiences.

Little Chute High School

Using additional graduate follow-up data from the National Student Clearinghouse, Little Chute High School's team developed several college and career student success data infographics. The data graphs and tables are used in the Career Skills class, in which all freshman tour FVTC and other local colleges. Taught by faculty from different departments, the Career Skills classes provide teachers with insight on how they might link instruction with post-high school success. The infographics were shared with parents attending the college preview night this past January.

Going Forward: Game-changing Dual Credit Partnership Practices

Overall, the Data and Innovation Summit experience highlighted several core practices and priorities for high school/postsecondary education partnerships.

First, partnerships committed to using data to improve student success must promote a culture of student success by generating every year postsecondary education student success reports that can directly inform each high school's improvement plan. They should also create searchable databases that allow educators, parents and students to track and analyze the success patterns of particular sub-groups of students and/or students who enter particular college programs. These digital resources should be readily available on school and college websites.

Second, these partnerships must create college/high school learning communities for technical programs with regional skill shortages. These learning communities allow career pathway program faculty

members to jointly review the student performance data for existing dual credit course offerings, especially college-level math and technical math courses. Subsequently, these communities should refine and evaluate existing dual credit courses, or implement new or expanded dual credit courses aligned with programs of study.

Third, these partnerships must work closely with each high school to identify and offer through dual credit a concentrated core of 12–15 college credits in technical and general education courses in at least three different Career Clusters® (e.g., Health, Business, IT).

Fourth, partnerships committed to using data to improve student success must invite all high schools and local partner colleges to develop and offer an elective-credit College Success course. Such courses should include activities that:

- Bring students on campus for multiple class observations.
- Engage students from diverse backgrounds in cross-cultural CTE learning experiences.
- Require the completion of career-interest assessments and college placement exams in grade 11 (now required in Wisconsin).
- Create student and college major shadowing experiences that culminate in the development of a college success plan.

Lastly, these partnerships should set priorities to accelerate the college readiness of high school graduates on two fronts: building the college-going supports (e.g., family-focused college and financial planning workshops) for low-income and first-generation students, as well as students with disabilities and English language learners, and secondly, by ensuring that all students complete a college math course.

Conclusion

Data and innovation summits help to address several pressing challenges for the CTE community. Forthcoming changes to the Carl D. Perkins Career and Technical Education Act of 2006 and other federal and state legislation are placing a priority on using student records and other data to assess which programs of study and which college- and career-readiness practices are working, how well and for which students. Teams of high school and postsecondary instructors, along with institutional and district data analysts and university researchers, can address these questions through deep dive projects.

Findings from these analyses are useful on at least three fronts: helping students and parents make locally informed college and career plans with real-time data; identifying improvements to be made in particular programs of study, courses or support services; and convincing policymakers and funders that CTE investments have measurable benefits for students and communities. **Tech**

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REFERENCES

- Aspen Institute, College Excellence Program. (2014). *Using labor market data to improve student success*. Washington, DC: Author. Retrieved from <http://www.aspeninstitute.org/sites/default/files/content/docs/pubs/LaborMarketDataGuide.pdf>
- Data Quality Campaign. (2016). *Element 9*. Washington, DC: Author. Retrieved from <http://dataqualitycampaign.org/your-states-progress/10-essential-elements/element-nine/>

ENDNOTE

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