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Employment Outcomes as the Missing Metric in Community College CTE Education

Research Brief 1 in the series Data for Decision Making in Career and Technical Education (D4DM)

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Introduction

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A major barrier to using student-level data to improve, adapt, and innovate in community college technical education programs and pathways is the difficulty colleges and technical faculty face in accessing reliable employment outcomes information for students who complete technical education programs and pathways (Meza et al., 2021). Even when employment data are present, we find that trust in that data within some colleges is very low.

Data analysis of CTE programs anchored to employment outcomes provides a uniform measure of performance among programmatically diverse technical education programs and pathways. In the case of transfer students, for whom primary outcomes include successful forward transfer and successful attainment of an associate or baccalaureate degree, researchers and faculty have the benefit of these outcomes being recorded on student transcripts (Wang, 2017). Technical education programs and pathways, on the other hand, are designed to connect students with living-wage jobs that match their technical training; this makes employment, and not necessarily credential attainment, the most salient outcome for research and evaluation (Hollenbeck, 2011; Imperatore & Hyslop, 2017). Statewide data systems have made important advances in the past decade as states attempt to make workforce and unemployment insurance (UI) employment data more accessible to researchers, but substantial barriers remain in the actual implementation of such initiatives (Blume, Meza, and Bragg, 2019; Bragg, 2017). Using a case study approach, we delve into labor market and employment

outcomes data use in three postsecondary CTE programs in Washington. These three programs all received funding from the National Science Foundation Advanced Technical Education (NSF-ATE) grant in the years immediately before this research study for program development. We interviewed faculty and administrators in these programs to answer the following questions:

Research Questions

- What sources of student outcomes data related to employment are available and used by CTE faculty and administrators?
- What employment outcomes data points could CTE faculty and administrators use for program improvement?
- What are the barriers to using available employment outcomes data?

What data is available and used?

Several federal initiatives require colleges to report employment outcomes. In particular and relevant to this analysis, the National Science Foundation's Advanced Technological Education (ATE) investment in community colleges – approximately $66 million in fiscal year 2019 (NSF, 2019) – throughout the United States (Zinser & Lawrenz, 2004). This investment, in turn, is dwarfed by the $1.2 billion in grants made to states through Perkins Act funding in fiscal year 2019. Federal reporting requirements may require colleges to aggregate and report employment rates for CTE completers (e.g. postsecondary "indicators of performance" for Perkins Act funding or employment metrics established by the Workforce Innovation and Opportunity Act). In addition to these federal requirements, industry specific accreditation requirements may require the reporting of additional data, states may also require reporting. However, these efforts are aimed at accountability and monitoring and faculty may not have direct access or knowledge of the reporting requirements or outcomes reported. With few exceptions, we find little evidence that scholars, researchers, or practitioners leverage such federally-mandated employment data in systematic ways to improve technical education programs.

Colleges themselves often also have specific data needs such as program review processes or program viability metrics that measure performance on a number of indicators. In most cases, and in our three in-depth case studies, we found that the data that faculty and administrators see is not granular or nuanced enough to draw conclusions and make program or curricular changes. In addition, the data is often outdated, or faculty perceive the data to be untrustworthy or incomplete.

One college of three, Renton Technical College (RTC), located in a diverse suburb of Seattle, has some data dashboards that allow examination of labor market data. The other two colleges we studied do not have labor market information available to CTE faculty. Administrators at RTC make use of Tableau dashboards. These dashboards are maintained by the institutional research department and are populated with data from the State Board for Community and Technical Colleges (SBCTC). However, it is not known by faculty how data are collected. Research staff report that requests for data were primarily for program viability, an administrative function that monitors program metrics to determine programs in need of improvement.

Figure 1

Renton Technical College Employment Dashboard for the Computer Networking Program
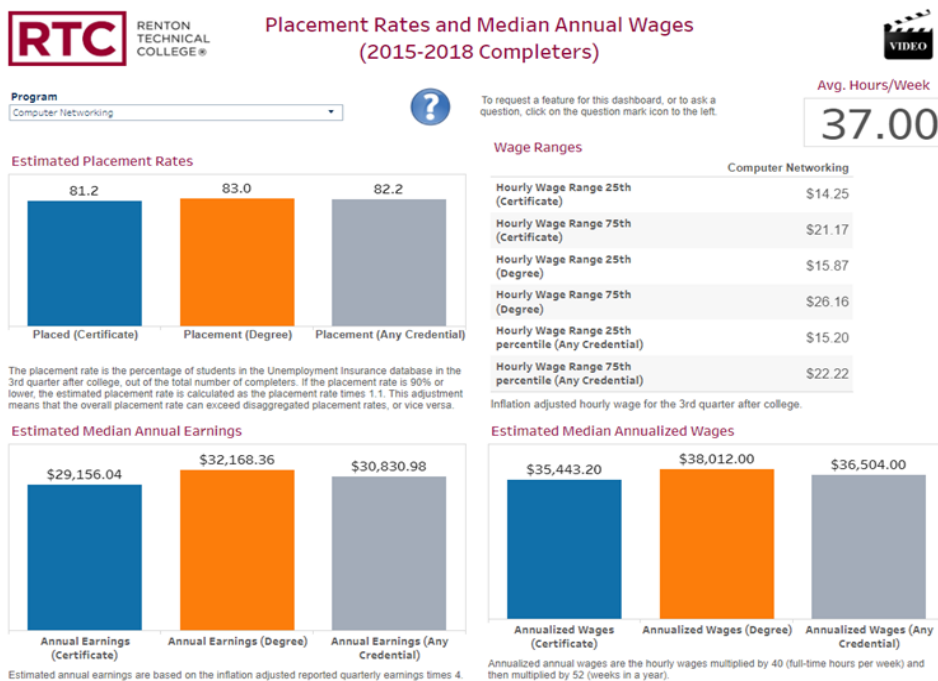
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At RTC the employment data dashboards are available to instructors, but only by request. Institutional Research members confirmed that instructor requests are rare, and requests for employment data are primarily in support of applying for grants or in evaluating the outcomes of grants. Many CTE programs at the college have an internship or cooperative requirement within the program. In lieu of administrative data, faculty gather most data on student employment and salaries through internship information. Students fill out a training agreement form where they must list their current hourly wage, Figure 2 shows the relevant portion of the form. Many students are salaried and provide either their salaried or equivalent hourly rate. Students do not include information about benefits such as health insurance or retirement plans.

Figure 2
Renton Technical College Internship Salary Information

Renton Technical College
Cooperative Vocational Education Training Agreement

_____
(Program)

Student _____   Birth date _____
Job Title _____   Beginning Hourly Wage _____

Among the three colleges in our case study, one suffered from a lack of trust between faculty and administrators that caused barriers to using employment data. Faculty in this college were fearful that any data could be used against them to shutter a program or marginalize their work. The other two colleges had very limited data, but both were making strides to get more data into the hands of faculty. In these colleges faculty were dependent on individual entrepreneurial efforts in some programs to generate their own data for program improvement and innovation. All three colleges expressed the desire to gather and use more data and technological advances were on the horizon that would allow them to put more data into the hands of faculty but a barrier they all faced to some degree was faculty distrust in how data would be used, shared, and interpreted by administrators.

What data could be useful?

While we find no evidence that employment outcomes are systematically used for analysis and program improvement in our case study institutions by technical education faculty in Washington State, Mullin (2012) suggests a broad range of possible employment outcomes across earnings, employment, and licensure pass rates that could be used for such analysis (Table 1). Any of these outcomes could be conceptualized as lagging indicators (Phillips & Horowitz, 2017) but statistical analysis of these outcomes could also model earnings and employment outcomes as lagging indicators conditional on a leading indicator, such as pass rate outcomes, in the cases where licensure was a necessary condition for employment.

Following work done in Washington by Leinbach and Jenkins (2011), any one of the employment outcomes noted in Table 1 could also serve as a "milestone achievement" for which "momentum points" could then been established. Consider the milestone achievement of obtaining living-wage employment within the first year after program exit. In the case of credit momentum, which refers to a student attempting at least 15 semester credits in the first term or at least 30 semester credits in the first academic year, this metric could be analyzed to determine the extent to which credit momentum predicts post-program attainment of a living-wage. Gateway momentum refers to a student taking and passing pathway-appropriate college-level math and English in the first academic year; in this case an analytic framework would determine the predicted power of completing this course relative to post-program employment.

Table 1
Potential Employment Outcomes for CTE Programs and Pathways

Earnings	Employment	Pass Rates

• Average earnings
• Attainment of livable wage
• Change in earnings
  – After 2nd/3rd quarter of program exit
  – After 3rd/4th quarter of program exit
  – Pre-program and post-program wage growth
	• Entered employment 1st quarter after program exit
	• Retained employment in 2nd/3rd/4th quarter after entering employment in 1st quarter
	• Placement rate of those entering employment (within one year of program exit) directly related to their technical training
		• Technical skill attainment
		• Licensure pass rate
		• Licensure and certification pass rates

Source: Mullin 2012

In addition to the traditional metrics faculty expressed a need for outcome data points that represent their industry, maximize their agency, afford them time to react, and include student factors. Faculty want points that they can impact during class time, such as having career services visit, a company recruiter, or a resume review session. Faculty in programs with internship elements, wanted the ability to contribute their employment data to any formal program review processes. This would increase faculty confidence in the data and give them more power to discuss what they can do impact employment outcomes.

What challenges and barriers arise in using labor market outcomes?

The most common barrier we found regarding the use of data for program improvement was a tension between faculty desire to have data for their own faculty-driven program improvement and innovation processes and what they sometimes perceived as administrative accountability and evaluation processes that may lead to negative consequences for them and their programs. Sometimes data was feared as a putative tool rather than as a means to drive improvement and program innovation. In some cases, we found a lack of trust in statewide longitudinal data systems to deliver reliable data on student employment outcomes. This lack of trust was especially evident at colleges facing financial difficulties where faculty feared data as a screen to shield administrator responsibility for closing programs. For example, an instructor reported "Administrators announce the data points a few weeks before entering program review, giving faculty no time for comment, nor time to pivot their program."

In other cases, we found that faculty disagreed with the metrics used. For example, by only looking at employment outcomes data for graduates, we heard from faculty that they felt they were not getting credit for students who were hired out of their programs before graduation into "good" jobs.

Faculty spearhead a broad range of entrepreneurial efforts to access and analyze student-level data to the best of their abilities. These entrepreneurial efforts are supported by administrators, but limited resources mean colleges rarely have the resources to support such efforts institutionally.

Implications for policy and practice

Washington has a robust system of statewide longitudinal data yet we find little evidence that such data makes it into the hands of CTE faculty members who may be able to improve or innovate their educational programs or offerings. In many cases faculty rely on a cobbled together set of incomplete information to determine student outcomes. Faculty do their best, based on what information they have, to make program changes and assess labor market alignment. Often, they do not have enough data to know about gender, racial or ethnic disparities. Washington has a robust system of statewide longitudinal data, yet we find little evidence that such data makes it into the hands of CTE faculty members who may

be able to improve or innovate their educational programs or offerings. In many cases faculty rely on a cobbled together set of incomplete information to determine student outcomes.

Students may also suffer from a lack of transparency in what labor market information does exist. Therefore, students may not be able to accurately assess the value or employment prospects of credentials or degrees. This lack of transparency may do particular harm to underserved students of color and women in which they might enroll or persist.

Stakeholders must make a concerted efforts to overcome both technical and cultural barriers to accessing and using employment data for program improvement.

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