

Data Management Plan

Study Information

Title: Examining the Impact of Career and Technical Education Course-Taking in Two States

Abstract: The focus on college and career readiness under ESSA is underpinned by growing evidence identifying a gap between current workforce skills and workforce demands, which has generated significant policy discussions and changes to education programs across the nation. Increasingly, attention has turned toward career and technical education (CTE) as a means to bridge this gap and support the readiness of students. This study investigates the impact of CTE course-taking on high school graduation, postsecondary enrollment and completion, and employment and wage outcomes in Nebraska and South Dakota. REL Central will use a quasi-experimental design, designed to meet What Works Clearinghouse group design standards with reservations, to compare student CTE concentrators to a group of similar students who are not CTE concentrators. The study sample will be drawn from all students in Nebraska and South Dakota whose 4-year high school graduation cohort year is between 2012/13 and 2016/17. The study will assess postsecondary outcomes two and five years after students' expected high school graduation year.

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Data Sources

REL Central will not collect any original data for the proposed study. All data have previously been collected by state agencies in Nebraska and South Dakota. The study sample will be drawn from all students in Nebraska and South Dakota whose 4-year high school graduation cohort year is between 2012/13 and 2016/17. Specifically, the study sample will include students who were identified as CTE concentrators at the end of their graduation cohort year (treatment) and a group of matched students who were not identified as CTE concentrators at the end of their graduation cohort year (comparison). As our study will address both 2- and 5-year post-high school outcomes, analyses examining 2-year outcomes will utilize a sample of students across the 2012/13 to 2016/17 student cohorts. Analyses examining 5-year outcomes will utilize a sample of students across the 2012/13 to 2013/14 student cohorts, as these are the only students who will have 5-year outcome data. South Dakota estimates that, on average, 4,300 students graduated from high school as CTE concentrators each year between 2013/14 and 2016/17. Nebraska estimates an average of 9,900 concentrators per year. Assuming a 1-to-1 treatment-to-comparison student match, the study sample may be as large as 142,000.

Name of Data Source	Owner/Publisher of the Data	Year(s)	Variable(s) <i>Please include the variable name and brief definition</i>
Matching Variables/Covariates			
Cohort graduation year	NDE/SD DOE	2012/13 to 2016/17	<i>Cohort year</i> – the student's expected 4-year high school graduation year
Student demographics	NDE/SD DOE	2012/13 to 2016/17	<i>Gender</i> – binary variable indicating a student's gender <i>Race/ethnicity</i> – categorical variable indicating a student's race and ethnicity

Name of Data Source	Owner/Publisher of the Data	Year(s)	Variable(s) <i>Please include the variable name and brief definition</i>
			<i>Eligibility for the National School Lunch Program (grade 8)</i> – binary variable indicating if a student was eligible for the National School Lunch Program while in grade 8 <i>Disability status (grade 8)</i> – binary variable indicating if a student had a disability or received special education services while in grade 8
Student baseline academic achievement	NDE/SD DOE	2012/13 to 2016/17	<i>State math assessment scores (grade 8)</i> – scale score a student received on the state standardized math assessment during grade 8 <i>State reading assessment scores (grade 8)</i> – scale score a student received on the state standardized reading assessment during the grade 8
District characteristics	NDE/SD DOE	2012/13 to 2016/17	<i>District ID</i> – identification number of the district in which a student was registered during his or her expected 4-year graduation year <i># of CTE pathways/clusters offered</i> – indicator of the number of unique CTE programs offered by the district in which a student was registered during his or her expected 4-year graduation year
Independent Variables			
Student CTE concentrator status	NDE/SD DOE	2012/13 to 2016/17	<i>CTE status</i> – binary variable indicating if a student was a CTE concentrator
Career cluster of CTE concentration	NDE/SD DOE	2012/13 to 2016/17	<i>Career cluster</i> – categorical variable indicating the career cluster of a student’s CTE concentration
Academic Outcome Variables			
High school graduation status	NDE/SD DOE	2012/13 to 2016/17	<i>Graduation status</i> – binary variable indicating if a student graduated during his or her expected 4-year high school graduation year
2-year postsecondary enrollment status	NSC (NDE/SD DOE)	2014/15 to 2018/19	<i>2-year enrollment</i> – binary variable indicating if a student was enrolled in a postsecondary or professional certification/licensure program within two years of the expected high school graduation year
5-year postsecondary enrollment status	NSC (NDE/SD DOE)	2017/18 to 2018/19	<i>5-year enrollment</i> – binary variable indicating if a student was enrolled in a postsecondary or professional certification/licensure program within five

Name of Data Source	Owner/Publisher of the Data	Year(s)	Variable(s) <i>Please include the variable name and brief definition</i>
			years of the expected high school graduation year
2-year postsecondary award status	NSC (NDE/SD DOE)	2014/15 to 2018/19	<i>2-year award</i> – binary variable indicating if a student received a postsecondary or professional certification/ licensure award within two years of the expected high school graduation year
5-year postsecondary award status	NSC (NDE/SD DOE)	2017/18 to 2018/19	<i>5-year award</i> – binary variable indicating if a student received a postsecondary or professional certification/ licensure award within five years of the expected high school graduation year
2-year postsecondary award date	NSC (NDE/SD DOE)	2014/15 to 2018/19	<i>2-year award date</i> – the day, month, and year of each postsecondary or professional certification/ licensure award a student received within two years of the expected high school graduation year
5-year postsecondary award date	NSC (NDE/SD DOE)	2017/18 to 2018/19	<i>5-year award date</i> – the day, month, and year of each postsecondary or professional certification/ licensure award a student received within five years of the expected high school graduation year
Workforce Outcome Variables			
2-year employment status	Nebraska Department of Labor (NDL)/South Dakota Department of Labor (SDDLRL)	2014/15 to 2018/19	<i>2-year employment</i> – binary variable indicating if a student was employed during the student’s second year after the expected high school graduation year
5-year employment status	NDL/SDDLRL	2017/18 to 2018/19	<i>5-year employment</i> – binary variable indicating if a student was employed during the student’s fifth year after the expected high school graduation year
2-year quarterly wages	NDL/SDDLRL	2014/15 to 2018/19	<i>2-year wages</i> – average quarterly wages during a student’s second year after the expected high school graduation year
5-year quarterly wages	NDL/SDDLRL	2017/18 to 2018/19	<i>2-year wages</i> – average quarterly wages during a student’s fifth year after the expected high school graduation year

Data Confidentiality Procedures

REL Central will ensure data confidentiality and will protect personally identifiable information. We will suggest that, before they receive any data, state partners link student data between the state agencies (e.g., education and labor), and that personally identifiable information (PII) such as student ID numbers and student names be stripped and replaced with a unique student identification number once linking is completed. Partner agencies will transmit the study data to REL Central through a secure file transfer site. After the data is transferred, it will be stored in a secure folder

that only study team members have access to. Any reports that are released under this project will present data only in aggregate form such that individuals will not be identifiable. Once the study is completed, all data will be destroyed.

R. Marc Brodersen, the principal investigator, will oversee data management and ensure that the procedures described here are followed. Should Brodersen leave Marzano Research during the study period, REL Central Director Trudy Cherasaro will assign a new principal investigator who will also oversee study data management.

Format for Final Data File

REL Central will create an alternative data file in the form of a PDF file that will be posted on our website, on the report publication page for the study. This alternative file will discuss the steps that we took to merge and clean the data as well as to create any new variables. This file will allow other researchers to recreate the dataset we will establish if they wish to replicate the study's findings.

Why Public Use Files Might Not Be Available

Due to state and federal guidelines and statutes related to the use of student PII, this study requires that all data be kept secure until analyses are completed, at which point they must be destroyed. Specifically, Family Educational Rights and Privacy Act (FERPA) regulations allow state education agencies to provide student PII, without parental consent, only to organizations working on their behalf, and the PII may not subsequently be released to outside parties (Regulation 34 CFR 99.31(a)(6)(iii)(A)(3)). Workforce data used for this study will be obtained through data sharing agreements already in place between the relevant state departments of education and departments of labor, and these data will not be directly accessed by REL Central. Additionally, the data sharing agreements established between REL Central and NDE, and REL Central and SD DOE, stipulate that REL Central may not make the data available to those outside of the organizations named in the agreements. Finally, South Dakota state statute (13-3-51.3) prevents the sharing of PII to the U.S. Department of Education.