

A JARCC Research Brief

Using CCSSE Data to Analyze the Impact of Risk Factors on Student Outcomes

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The purpose of this study was to create a methodology for examining the impact of risk factors on student learning and engagement at a community college using the Community College Survey of Student Engagement (CCSSE). The two primary objectives associated with the study were to examine differences between students who took the CCSSE based on their level of risk and to establish baseline data against which the responses of students participating in the college's TRIO/Student Support Services program could be compared. This comparison served as one part of the Student Support Services program's ongoing assessment plan.

Introduction

The retention and success of students is a priority for the nation's colleges. Community colleges, in particular, are challenged by a higher proportion of students with risk factors. Studies of risk have focused on a broad range of characteristics to examine why students have difficulty successfully transitioning from high school to college or meeting their educational goals once in college. A large body of literature examines retention and persistence of students with risk factors (Choy, 2000; Schmid & Abell, 2003; McGaha & Fitzpatrick, 2005) and institutional interventions that address academic, financial, and affective needs of students with risk factors (Tinto, 1993; Heisserer & Parette, 2002; Vivian, 2005)

Analyses conducted by the National Center for Education Statistics (NCES) have utilized national survey data to examine the retention and success of

college students. In *Profile of Undergraduates in U. S. Postsecondary Education Institutions: 1999-2000* (Horn, Peter, & Rooney, 2002) and *Community College Students: Goals, Academic Preparation, and Outcomes* (Hoachlander, Sikora, & Horn, 2003), an index of risk factors associated with not completing postsecondary education was created to analyze the relationships between risk and achievement. Horn, Peter, and Rooney used these factors to examine diversity and risk of attrition, concluding that single parents and all students with children had the highest average of risk factors. Hoachlander, Sikora and Horn concluded that fewer risk factors combined with better academic preparation were associated with higher completion of postsecondary degrees or certificate.

The risk factors identified in the NCES report included: delayed enrollment between high school graduation and postsecondary entry; part-time atten-

dance at first institution; completing high school by certificate or GED; working full time when first enrolled; having a child; and being a single parent before or while enrolled. Another risk variable, financially independent, was added for students 24 or older or those with children or dependents.

Researchers with the Community College Leadership Program (2003) at the University of Texas at Austin, which oversees the Community College Survey of Student Engagement (CCSSE), have also examined students with risk factors using national data. The attributes used by CCSSE to identify at-risk students include: being academically under-prepared; a single parent; a first-generation college student; or financially independent. Other risk factors identified were caring for children at home, and working more than 30 hours per week. The respondents from the 2003 survey administration were categorized as high-risk (17%), moderate risk (66%), and low risk (17%). The researchers concluded that despite multiple risk factors, high-risk students exert significant effort to be successful, coming prepared for and participating in their classes. High-risk students also take advantage of services offered by the college to a greater extent than their low- and moderate-risk peers.

College and Student Characteristics

Skagit Valley College (SVC) was established in 1926 and is the second oldest community college in the state of Washington. Each quarter the college enrolls approximately 6,500 students in credit courses leading to a university transfer degree or to a degree or certificate in one of 30 professional/technical programs. Despite a relatively high percentage of dual-enrolled high school students, the average age of the student body is 31. Sixty-four percent of SVC students are female. From 2000 to 2004 the population in the college district grew 8.5 percent; the Hispanic population grew by 19 percent during this same period.

A significant portion of the students are first-generation and come from low-income households. The majority of students entering the college do not place into college-level mathematics. Consequently, the college has focused on supporting the economi-

cally disadvantaged and academically under-prepared student. The college has had a TRIO Student Support Services (TRIO/SSS) program for over two decades. The TRIO/SSS program participants at Skagit Valley College are primarily female (70%) who are first-generation and/or from low-income households.

The U.S. Department of Education TRIO program was created to provide educational opportunities for high-risk students who possess one or more of the following characteristics: economically disadvantaged; academically under-prepared; first-generation; or learning or physically disabled. The TRIO/SSS program at Skagit Valley College provides study skills courses, advising, tutoring, and other targeting academic development activities to increase student retention, achievement and graduation. The data indicate a relatively high success rate for students who participate in this program— 95 percent of participating students maintain a GPA of 2.0 or higher, 84 percent of the participants are retained, and 36 percent of the eligible cohort graduate each year.

Risk Factors Used in the Study

The administration of the CCSSE in Spring 2003 provided SVC with an opportunity to analyze the impact of risk factors on student engagement and to determine student use of and satisfaction with student services. While this information by itself was useful for the college, it also provided a baseline for the TRIO/SSS program staff who wished to compare CCSSE results with responses from their program participants. Consequently, TRIO/SSS staff members were consulted during the process of identifying risk factors to be used in the study. The literature cited previously was used as a basis for discussions about what constituted risk factors in the college environment. The selection of factors was also subject to the limitations of the CCSSE instrument. Table 1 shows the factors and the associated CCSSE items included in the study.

Table 2 presents the coding scheme that was used to create risk categories. The variables were recoded into a binary format with a “1” indicating the presence of the factors and a “0” indicating this was not a risk factor for the student. An SPSS data file was created with the variables of interest.

The schemes utilized in the NCES report (Horn, Peter & Rooney, 2003) and CCSSE report (Community College Leadership Program, 2003), which aggregated the risk variable into three categories, were adapted for this study. The corresponding labels used were No Risk, Low Risk (one risk factor), and At Risk (two or more risk factors).

Baseline Results

The objective of the initial phase of the study was to examine differences among SVC respondents

in the three risk categories on key items related to student engagement and development in the CCSSE. The analysis included the 765 respondents: there were 143 (19%) with no risk factors (No Risk), 264 (35%) with one risk factor (Low Risk), and 358 (46%) with two or more risk factors (At Risk). Analysis of Variance (ANOVA) was used to compare means among the groups. The Scheffe test was used to test all pairs for differences *post hoc*. Table 3 presents the results of this analysis for survey items selected for use in the TRIO/SSS assessment.

Significant differences between the No Risk and At Risk groups were found in social interactions, re-

Table 1: Risk Factors and CCSSE Items

Factor	CCSSE Item
1 Disabled	How often do you use the following services?: ‘Services for people with disabilities’
2 Academically under prepared	How likely is it that the following issues would cause you to withdraw from class or from this college: ‘Academically unprepared’
3 Lack of Finances	How likely is it that the following issues would cause you to withdraw from class or from this college?: ‘Lack of Finances’
4 Single Parent	Do you have children who live with you? AND Are you married?
5 English is Native Language	Is English your native (first) language?
6 First Generation	What is your highest level of education obtained by your: Mother? Father?
7 Part-Time Attendance	Thinking about this current academic term, how would you characterize your enrollment at this college?

Table 2: Coding Scheme

Item	Response	Code	Response	Code
1 Disabled services	Often & Sometimes	1	Rarely/Never; N/A	0
2 Academically unprepared	Very Likely & Likely	1	Somewhat Likely & Not Likely	0
3 Lack of finances	Very Likely & Likely	1	Somewhat Likely & Not Likely	0
4 Single parent	Yes to BOTH children and single	1	All other options/combinations	0
5 English is native language	No	1	Yes	0
6 First generation	BOTH Parents = Education < HS/GED	1	All other options/ combinations	0
7 Attendance	Less than full time	1	Full time	0

Table 3: Mean Responses for CCSSE Respondents by Risk Category

Survey Items	CCSSE Respondents, Spring 2003		
	No Risk	Low Risk	At Risk
In your experiences at this college during the current school year, about how often have you done each of the following: (1 = Never, 2 = Sometimes, 3 = Often, 4 = Very often)			
Discussed grades or assignments with an instructor	2.61	2.56	2.57
Worked with instructors on activities other than coursework	1.55	1.50	1.54
Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	2.81	2.83	2.69
How much does the college emphasize each of the following: (1 = Very little, 2 = Some, 3 = Quite a bit, 4 = Very much)			
Providing support you need to help you succeed at this college	2.98	2.84	2.87
Providing the support you need to thrive socially	1.94	2.01	2.11
Encouraging contact among students from different economic, social, and racial or ethnic backgrounds	2.39	2.57	2.63
Helping cope with non-academic responsibilities (work, family, etc.)	1.79	1.75	1.83
Mark the box that best represents the quality of your relationships with people at this college. (1 = Extremely Poor, 2 = Very poor, 3 = Poor, 4 = Neutral, 5 = Good, 6 = Very good, 7 = Extremely good)			
Relationships with other students	5.94**	5.66	5.55**
Relationships with instructors	5.93**	5.72	5.55**
Relationships with administrative personnel and offices	5.23**	4.96	4.77**
THIS COLLEGE contributed to your knowledge, skills, and personal development in: (1 = Very little, 2 = Some, 3 = Quite a bit, 4 = Very much)			
Working effectively with others.	2.77	2.85	2.91
How often do you use the following services? (0 = N/A, 1 = Rarely/Never, 2 = Sometimes, 3 = Often)			
Academic advising/ planning	1.75	1.69	1.81
Career counseling	1.30	1.26	1.24
Job placement assistance	0.65	0.58	0.67
Peer or other tutoring	1.01	0.95*	1.21*
Skill labs (writing, math, etc.)	1.23	1.13	1.26
Child care	0.57	0.44	0.43
Financial aid advising	1.67**	1.34	1.32**
Computer lab	1.70	1.93	1.99
Student organizations	0.80	0.81	0.96
Transfer credit assistance	1.13	1.10	1.23
Services for people with disabilities	0.33**	0.47	0.64**
To what extent is your college a comfortable environment for all students: ...? (1 = Very comfortable, 2 = Comfortable, 3 = Uncomfortable, 4 = Very uncomfortable).			
...an environment free of harassment of any kind (racial, sexual, or other)?	1.25**	1.37	1.47**

* Indicates significant differences between At Risk students and Low Risk students ≤ 0.05 .

** Indicates significant differences between At Risk students and No Risk students at the ≤ 0.05 .

relationships and use of some support services. Compared to the No Risk group, the At Risk group indicated a poorer relationship with other students ($p = .006$), instructors ($p = .009$), and administrative personnel ($p = .022$). Alternatively, the At Risk group indicated the college was a comfortable environment, significantly more so than the No Risk group ($p = .007$). At Risk students were more likely to use services for people with disabilities ($p = .001$), but less likely to use financial aid advising ($p = .009$) than the No Risk group. The only other significant difference between groups on the items identified for this study was that Low Risk group was less likely to use peer or other tutoring than the At Risk ($p = .004$).

Study Results for TRIO/Student Support Services

The TRIO/SSS program staff had been involved in discussions about the risk factors to be included in the initial study. They subsequently requested that a brief survey be developed that included some of the relevant questions from the CCSSE instrument that could be administered to current TRIO/SSS participants as part of an assessment pilot. The survey was administered at the conclusion of the Fall 2004 College Success Skills course for TRIO/SSS students. Since a majority of these students were new to the college, it was unlikely that the students were included in the CCSSE sample obtained the prior Spring. A comparison between the mean responses of TRIO/SSS participants ($n = 64$) and the baseline At Risk group from the CCSSE administration ($n = 358$) was conducted using the independent t -test. The comparison results are presented in Table 4.

Compared to the At Risk students in the CCSSE baseline, TRIO/SSS participants reported significantly higher ratings of the college's efforts to provide the support they need to succeed, help them thrive socially, and cope with non-academic responsibilities. TRIO/SSS students used academic advising, career planning, and financial aid advising significantly more often than the CCSSE At Risk group. TRIO/SSS participants also indicated a significantly higher quality relationship with instructors and administrative personnel compared to the At Risk group. While the TRIO/SSS participants' use of tutoring and skills labs

was reported to be higher than the CCSSE group, this was not significant.

Conclusions

This initial study allowed the college to examine the perceptions of students who had a high risk of not completing their postsecondary education compared to students with fewer risk factors. The findings from the CCSSE provided a baseline for the TRIO/SSS program staff who wanted to determine if TRIO/SSS participants were being adequately served, and whether they were using and satisfied with various services on campus. The study results indicated that TRIO/SSS students were more likely to report that the college provided both academic and social support, to use academic advising/planning, and to have better relationships with instructors and administrative staff than the baseline group. However, the TRIO/SSS staff expected a significantly higher use of tutoring and skills lab. These were meaningful findings for the college's TRIO/SSS program, and they have continued to use the survey as a regular part of their assessment strategy.

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Table 4: Mean Responses for CCSSE At Risk Respondents and TRIO/SSS Participants

Survey Items	CCSSE At Risk	TRIO/SSS participants
In your experiences at this college during the current school year, about how often have you done each of the following: (1 = Never, 2 = Sometimes, 3 = Often, 4 = Very often)		
Discussed grades or assignments with an instructor	2.57	2.47
Worked with instructors on activities other than coursework	1.54	1.79
Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	2.69	2.81
How much does the college emphasize each of the following: (1 = Very little, 2 = Some, 3 = Quite a bit, 4 = Very much)		
Providing support you need to help you succeed at this college	2.87**	3.39**
Providing the support you need to thrive socially	2.11**	2.63**
Encouraging contact among students from different economic, social, and racial or ethnic backgrounds	2.63	2.74
Helping cope with non-academic responsibilities (work, family, etc.)	1.83*	2.18*
Mark the box that best represents the quality of your relationships with people at this college. (1 = Extremely poor, 2 = Very poor, 3 = Poor, 4 = Neutral, 5 = Good, 6 = Very good, 7 = Extremely good)		
Relationships with other students	5.55	5.85
Relationships with instructors	5.55*	6.02*
Relationships with administrative personnel and offices	4.77*	5.84*
THIS COLLEGE contributed to your knowledge, skills, and personal development in: (1 = Very little, 2 = Some, 3 = Quite a bit, 4 = Very much)		
Working effectively with others.	2.91	3.10
How often do you use the following services? (0 = N/A, 1 = Rarely/Never, 2 = Sometimes, 3 = Often)		
Academic advising/ planning	1.81**	2.23**
Career counseling	1.24**	1.62**
Job placement assistance	0.67	0.73
Peer or other tutoring	1.21	1.46
Skill labs (writing, math, etc.)	1.26	1.44
Child care	0.43	0.58
Financial aid advising	1.32**	1.90**
Computer lab	1.99	1.93
Student organizations	0.96	0.93
Transfer credit assistance	1.23	1.21
Services for people with disabilities	0.64**	1.14**
To what extent is your college a comfortable environment for all students:... (1 = Very comfortable, 2 = Comfortable, 3 = Uncomfortable, 4 = Very uncomfortable)		
...an environment free of harassment of any kind (racial, sexual, or other)?	1.47	1.35

* Indicates significant differences between TRIO/SSS participants and the CCSSE At Risk group at the .05 level.

** Indicates significant differences between TRIO/SSS participants and the CCSSE At Risk group at the .01 level