



*** Special Data Analysis ***

Postsecondary Outcomes of Dual Enrollment Students

“Dual enrollment” programs – which allow qualified high school students to earn college credit while still enrolled in high school – have become ubiquitous in the United States. The Education Commission of the States (ECS) reports that forty-six US states maintain a state-level program for dual enrollment delivery, and the National Association for College Admission Counseling (NACAC) estimates that 88.8% of US public high schools offer dual enrollment opportunities.¹ In fact, some states have pushed the envelope so far as to encourage students to complete entire associate’s degree programs before finishing high school.² But do students participating in these programs experience any educational benefit from having done so? The current analysis explores this question by examining the postsecondary outcomes of students entering the Regental system after earning dual enrollment credits.

Policy Background

For nearly two decades, the South Dakota Board of Regents has provided an administrative framework for dual enrollment offerings in the state. There are two main routes by which students may earn college credit in the Regental system through coursework delivered in a high school classroom: 1) transferring in credits earned in dual enrollment courses offered by non-Regental institutions, and 2) taking dual enrollment courses offered directly by Regental institutions. The Board’s central policy statement with respect to dual enrollment is found in *BOR Policy 2:5:3f:1*, which pertains mainly to the first of these routes.³ This policy specifies the conditions under which (non-Regental) high school coursework may be accepted for college-level credit by Regental institutions. Under this policy, college credit may be awarded for high school coursework meeting one of three criteria:

- 1) Student achievement has been validated through AP or CLEP testing
(OR)
- 2) College credit was issued (in the original dual enrollment course) by a postsecondary institution with which SDBOR has an existing dual enrollment agreement
(OR)
- 3) College credit was issued (in the original dual enrollment course) by a postsecondary institution accredited by the National Alliance of Concurrent Enrollment Partnerships

¹ Education Commission of the States (2008). Dual enrollment. Retrieved from <http://mb2.ecs.org/reports/Report.aspx?id=950>; National Association for College Admission Counseling (2011). 2011 State of College Admissions. Retrieved from <http://www.nacacnet.org/research/research-data/Documents/2011SOCA.pdf>

² Utah’s “New Century Scholarship” provides funding to qualified students (i.e., those earning an associate’s degree by the time of high school graduation) who subsequently attempt to complete a four-year degree at an eligible in-state institution. For general information, see http://www.higheredutah.org/scholarship_info/new-century-scholarship/

³ Policy text available at http://www.sdbor.edu/policy/2-Academic_Affairs/documents/2-5.pdf

The delivery of dual enrollment courses by Regental institutions is regulated by policy guidelines adopted by AAC and affirmed by COPS.⁴ These guidelines (which also serve as the basis for the inter-institutional dual enrollment agreements noted above) lay out comprehensive rules and procedures for such courses, including:

- Admission criteria for dual-enrolled high school students
- Required qualifications for on-site high school teachers
- Participation of a supervising Regental faculty member
- Provisions for the development of a course syllabus and grading plan

The above policies and guidelines are meant to safeguard the academic integrity of dual enrollment coursework, and consequently to ensure that students completing such coursework do in fact benefit scholastically from their efforts. Across a range of indicators – from academic preparation to enrollment persistence, and student achievement to degree completion – participation in dual enrollment programs *should* serve as a springboard for a range of future postsecondary successes. In general, existing scholarship has indeed linked dual enrollment participation to an array of improved academic outcomes.⁵

But are such benefits realized in South Dakota? On the whole, there appears to be reason for optimism. South Dakota has been recognized as a national exemplar for its dual enrollment management practices. The National Alliance of Concurrent Enrollment Partnerships (NACEP), for example, highlighted South Dakota as a model for its efforts to establish uniform, rigorous quality assurance standards.⁶ SDBOR has established robust dual enrollment agreements with nearly twenty different postsecondary institutions and systems, in addition to forming tacit agreements with a more than eighty other institutions via NACEP accreditation. Altogether then, the current analysis was conducted in order to assess the postsecondary value (or lack thereof) of dual enrollment participation in the South Dakota context.

Dataset and Purpose

SDBOR High School Transition Report (HSTR) datasets provide information on students matriculating to the Regental system immediately after graduating from a South Dakota high school. The current analysis relied on a “retrofitted” HSTR dataset using data from the Fall 2006 entering cohort. As a result, the analyzed dataset included data for all first-time, full-time, (bachelor’s) degree-seeking students entering a Regental university in Fall 2006 (after having graduated from an in-state high school during the preceding school year). The analysis tracks these students through the subsequent six academic years (AY2006-2007 through AY2011-2012) to assess differences in academic performance between 1) students who completed dual enrollment coursework prior to entering college, and 2) students who did not complete such coursework. It should be noted that the postsecondary entry of the Fall 2006 cohort predates SDBOR’s current dual enrollment policy framework. As a result, this analysis is not intended as a narrow evaluation of SDBOR’s current policy, but as a broad appraisal of the concept of dual enrollment.

⁴ These guidelines were last modified in March 2010. For text and further discussion of these guidelines, see http://www.sdbor.edu/services/academics/DualCredit/documents/guidelines_dual-credit_BOR03-2010.pdf and <http://www.sdbor.edu/theboard/agenda/2011/documents/Z.pdf>

⁵ For examples, see North, T. & Jacobs, J. (2010). *Dual credit in Oregon – 2010 follow-up: An analysis of students taking dual credit in high school in 2007-08 with subsequent performance in college*. Office of Institutional Research, Oregon University System. Retrieved from <http://www.ous.edu/sites/default/files/dept/ir/reports/dualcredit/DualCredit2010FINAL.pdf> and Swanson, J.L., (2008). *An analysis of the impact of high school dual enrollment course participation on post-secondary academic success, persistence, and degree completion*. The University of Iowa, College of Education. Retrieved from: http://nacep.org/wp-content/uploads/2010/02/2008_joni_swanson_summary.pdf

⁶ National Alliance of Concurrent Enrollment Partnerships (2010). *Promoting quality: State strategies for overseeing dual enrollment programs*. Retrieved from http://nacep.org/wp-content/uploads/2010/10/NACEP_Promoting_Quality_Report_2010.pdf

Analysis

Of the $n=2,649$ students in the analyzed dataset (i.e., all bachelor's degree-seeking students from the Fall 2006 HSTR cohort), approximately 17.8% ($n=472$) had earned dual enrollment credit prior to enrolling in the Regental system, while the remaining 82.2% ($n=2,177$) had not. Table 1 presents a comprehensive comparison of these two groups using a wide array of both pre-entry and post-entry performance indicators. As seen below, the completion of dual enrollment coursework in high school appears to be positively and strongly associated with other measures of academic preparation and performance. "Dual enrollers" appear to outperform other students with respect to ACT performance, remedial (non-) placement, first year GPA, second year retention, and persistence to degree completion. Perhaps most striking among the figures shown here is that students with dual enrollment credits "out-graduated" students with no such credit by a difference of 40.5% to 22.4% (four-year rates) and 74.2% to 54.0% (six-year rates). Such disparities signal clear categorical differences in these students' likelihood for postsecondary success.

Table 1: Comparison of Dual Enrolling Students with All Other (non-Dual Enrolling) Students Fall 2006 SDBOR High School Transition Report Cohort, Bachelor's-Seekers Only

	<i>All Other Students</i> ($n=2,177$)	<i>Dual Enrolling</i> [†] ($n=472$)
ACT Performance		
<i>Met All Four ACT Benchmarks</i>	29.8%	49.4%
<i>Mean ACT English</i>	21.7	23.9
<i>Mean ACT Reading</i>	22.9	24.7
<i>Mean ACT Math</i>	22.4	24.2
<i>Mean ACT Science</i>	22.6	24.2
<i>Mean ACT Composite</i>	22.6	24.4
Remedial Placement		
<i>Remedial Placement (English)</i>	12.8%	6.2%
<i>Remedial Placement (Math)</i>	25.7%	11.2%
<i>Remedial Placement (Either English OR Math)</i>	30.5%	13.6%
<i>Remedial Placement (Both English AND Math)</i>	8.0%	3.8%
Other Preparation Indicators		
<i>SD Opportunity Scholarship Recipient</i>	23.7%	51.5%
<i>Awarded AP Credit</i>	10.0%	12.3%
First-Year Academic Performance		
<i>Mean First-Year GPA</i>	2.70	3.09
<i>Mean First-Year Attempted Credit</i>	26.2	29.3
<i>Mean First-Year Completed Credit</i>	24.4	28.4
Retention Rates		
<i>2nd Fall Retention at Same Institution</i>	71.7%	84.3%
<i>2nd Fall Retention at Any BOR Institution</i>	77.1%	88.8%
Persistence to Completion		
<i>Bachelor's Seekers Earning a Bachelor's Degree in ≤ 4 Years</i>	22.4%	40.5%
<i>Bachelor's Seekers Earning a Bachelor's Degree in ≤ 6 Years</i>	54.0%	74.2%
<i>Average Time (in Years) to Bachelor's Degree Completion*</i>	4.72	4.52
<i>* for those completing in in ≤ 6 Years</i>		

[†] Includes students transferring in any number of credits earned prior to postsecondary entry (Fall 2006)

The above measures speak to a marked difference in academic performance between dual enrollers and their non-dual enrolling peers. However, what is not clear from the above table is whether dual enrollment participation itself actually contributed to these students' successes. Since high-achieving, college-bound students would seem most likely to complete dual enrollment coursework in the first place, it stands to reason that the postsecondary achievements of these students may have occurred even in the absence of dual enrollment participation. In this light, dual enrollment might be seen more as an *effect* of postsecondary preparation than as a *cause*.

The regression analysis below was conducted in an attempt to test the independent, causal influence of dual enrollment participation on subsequent academic performance. The key question targeted by the regression model is this: after controlling for incoming ability, does dual enrollment participation continue to act as an independent predictor of postsecondary academic performance? The model operationally defines a student's "incoming ability" as his or her ACT composite score, and defines "postsecondary academic performance" as the student's cumulative first-year GPA. Dual enrollment participation is defined in the model as having transferred in any number of college credits earned prior to entry. Results from the model are shown in Table 2.

**Table 2. Multivariate Regression: First-Year GPA and Dual Enrollment, Controlling for ACT⁷
Fall 2006 SDBOR High School Transition Report Cohort, Bachelor's-Seekers Only**

F(2, 2422) = **488.20**
 Prob > F = **0.0000**
 R-squared = **0.2603**
 Root MSE = **3.648**

GPA	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
DUAL	.8969897	.1922562	4.67	0.000	.5199862	1.273993
ACT	.5566299	.0193185	28.81	0.000	.5187474	.5945124
_cons	-4.507183	.4375457	-10.30	0.000	-5.365186	-3.64918

GPA	b	t	P> t	bStdX	bStdY	bStdXY	SDofX
DUAL	0.89699	4.666	0.000	0.3494	0.2116	0.0824	0.3895
ACT	0.55663	28.813	0.000	2.0677	0.1313	0.4877	3.7147

Results suggest that, even after controlling for incoming ability, the positive relationship between dual enrollment participation and first-year academic performance remains intact. While standardized beta coefficients indicate that ACT performance ("ACT") may be a more forceful driver of first-year GPA, dual enrollment participation ("DUAL") is nonetheless a significant, positive predictor. Inspection of the results from an alternative model (not shown here) using a non-transformed iteration of first-year GPA suggests that completing even one course through dual enrollment may deliver a predictive benefit equivalent to a two-point increase in ACT composite score. Overall, this analysis provides preliminary evidence for the utility of dual enrollment programming.

⁷ The model was executed with ordinary least squares regression using White's heteroskedasticity-consistent covariance matrix correction (HC₃) for robust standard error estimates. The two predictors (dual enrollment participation and ACT composite score) were regressed on a power-transformed iteration of GPA.