

Indicators of Student Success

A Focused Inquiry for Faculty Discussion

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Introduction

- Research has shown that high levels of student engagement (academic and social) promote student success
- Studies done at PRIE have identified several key behaviors that impact student success
- Our studies raise questions about how faculty & staff can improve services
- Data Presentation & Focused Inquiry
- Who are our students? Why are they successful?

Student Characteristics

- What are entering students' skill levels?
- What is the composition of the student body?

Incoming freshmen math skills

2007 San Joaquin County High School Graduates

High School	Total Enrolled	Level 1	Level 1 %	Level 2	Level 2 %	Level 3	Level 3 %
FRANKLIN HS	184	76	41.3%	59	32.1%	49	26.6%
PLAZA ROBLES	20	8	40.0%	10	50.0%	2	10.0%
LIBERTY HS LODI	16	6	37.5%	7	43.8%	3	18.8%
WEBER INSTITUTE	25	9	36.0%	8	32.0%	8	32.0%
SAN JOAQUIN CO HS	28	10	35.7%	11	39.3%	7	25.0%
EDISON	176	61	34.7%	55	31.3%	60	34.1%
WEST MERRILL F HIGH	113	36	31.9%	33	29.2%	44	38.9%
VENTURE ACADEMY	13	4	30.8%	5	38.5%	4	30.8%
MANTECA HS	80	24	30.0%	25	31.3%	31	38.8%
TRACY JOINT UNION	109	31	28.4%	35	32.1%	43	39.4%
CALLA HS	11	3	27.3%	7	63.6%	1	9.1%
LINDEN HS	70	18	25.7%	26	37.1%	26	37.1%
STAGG	237	54	22.8%	84	35.4%	99	41.8%
LINCOLN HS	224	51	22.8%	73	32.6%	100	44.6%
EAST UNION HS	84	17	20.2%	30	35.7%	37	44.0%
SIERRA HIGH MANTECA	101	19	18.8%	43	42.6%	39	38.6%
TOKAY HS	277	50	18.1%	83	30.0%	144	52.0%
BEAR CREEK HS	214	36	16.8%	82	38.3%	96	44.9%
ESCALON HS	18	3	16.7%	12	66.7%	3	16.7%
LODI HIGH	204	32	15.7%	53	26.0%	119	58.3%
ST MARYS HS	123	17	13.8%	31	25.2%	75	61.0%

Note. Level 3 comprised of Levels 4,5,6 in COMPASS tests

Incoming freshmen reading skills

2007 San Joaquin County High School Graduates

High School	Total Enrolled	Level 1	Level 1 %	Level 2	Level 2 %	Level 3	Level 3 %
EDISON	176	54	30.7%	113	64.2%	9	5.1%
PLAZA ROBLES	20	6	30.0%	12	60.0%	2	10.0%
WEST MERRILL F HIGH	113	30	26.5%	65	57.5%	18	15.9%
FRANKLIN HS	184	38	20.7%	131	71.2%	15	8.2%
TRACY JOINT UNION	109	20	18.3%	70	64.2%	19	17.4%
CALLA HS	11	2	18.2%	8	72.7%	1	9.1%
STAGG	237	43	18.1%	168	70.9%	26	11.0%
MANTECA HS	80	12	15.0%	52	65.0%	16	20.0%
LINDEN HS	70	10	14.3%	50	71.4%	10	14.3%
ST MARYS HS	123	17	13.8%	81	65.9%	25	20.3%
BEAR CREEK HS	214	29	13.6%	160	74.8%	25	11.7%
TOKAY HS	277	35	12.6%	186	67.1%	56	20.2%
LIBERTY HS LODI	16	2	12.5%	13	81.3%	1	6.3%
WEBER INSTITUTE	25	3	12.0%	21	84.0%	1	4.0%
SIERRA HIGH MANTECA	101	10	9.9%	75	74.3%	16	15.8%
LINCOLN HS	224	20	8.9%	159	71.0%	45	20.1%
SAN JOAQUIN CO HS	28	2	7.1%	25	89.3%	1	3.6%
EAST UNION HS	84	6	7.1%	60	71.4%	18	21.4%
LODI HIGH	204	13	6.4%	132	64.7%	59	28.9%
ESCALON HS	18	1	5.6%	15	83.3%	2	11.1%

Incoming freshmen writing skills

2007 San Joaquin County High School Graduates

High School	Total Enrolled	Level 1	Level 1 %	Level 2	Level 2 %	Level 3	Level 3 %
PLAZA ROBLES	20	9	45.0%	10	50.0%	1	5.0%
EDISON	176	66	37.5%	91	51.7%	19	10.8%
WEST MERRILL F HIGH	113	39	34.5%	53	46.9%	21	18.6%
FRANKLIN HS	184	51	27.7%	103	56.0%	30	16.3%
TRACY JOINT UNION	109	26	23.9%	65	59.6%	18	16.5%
STAGG	237	56	23.6%	133	56.1%	48	20.3%
MANTECA HS	80	18	22.5%	38	47.5%	24	30.0%
WEBER INSTITUTE	25	5	20.0%	17	68.0%	3	12.0%
BEAR CREEK HS	214	40	18.7%	131	61.2%	43	20.1%
LINDEN HS	70	13	18.6%	38	54.3%	19	27.1%
CALLA HS	11	2	18.2%	7	63.6%	2	18.2%
ESCALON HS	18	3	16.7%	10	55.6%	5	27.8%
TOKAY HS	277	44	15.9%	155	56.0%	78	28.2%
ST MARYS HS	123	18	14.6%	70	56.9%	35	28.5%
SIERRA HIGH MANTECA	101	14	13.9%	59	58.4%	28	27.7%
LINCOLN HS	224	29	12.9%	122	54.5%	73	32.6%
LIBERTY HS LODI	16	2	12.5%	11	68.8%	3	18.8%
SAN JOAQUIN CO HS	28	3	10.7%	23	82.1%	2	7.1%
EAST UNION HS	84	9	10.7%	46	54.8%	29	34.5%
LODI HIGH	204	21	10.3%	103	50.5%	80	39.2%

Incoming academic skills

- Focused Inquiry for Faculty/Staff:
 - What steps can be done to increase the skill levels of entering HS students?
 - Communicate expectations about skill levels to HS students?
 - Take steps to better align curriculum standards to boost incoming skill levels?

Student Demographics

- 30,111 students in 2007-08
- 58% female
- 11% African American
- 28% Hispanic/Latino
- 20% Asian/Pacific Islander
- Average age is 24.8
- 45% qualify for fee waivers (income guideline or child of disabled vet/deceased vet)

Student Demographics

- 2008 Equity for All Study
 - African Americans are underrepresented when examining AA degree attainment, transfer status, and completion of “critical 4” courses (1. ENG 1A, 2. COMST 1A, 3. ENG 1B/1D/PHIL 30, and 4. Transfer MATH)
 - Hispanics lag behind other groups on several measures (transfer success, degrees, critical 4 attainment)

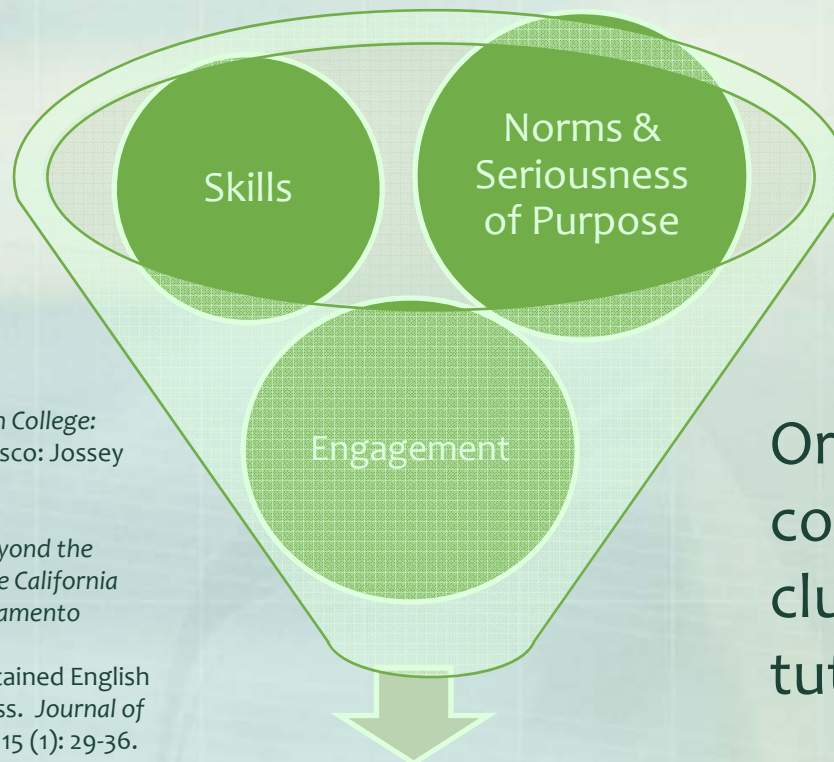
Student Demographics

- Focused Inquiry for Faculty/Staff
 - Recognizing the disproportionate number of students who come from impoverished and non-traditional educational backgrounds, what steps can we take to address their learning needs?
 - Recognizing equity gaps across ethnic groups, what can Delta do to close those gaps?

Model of Student Success

Student's Background Characteristics

Assessment scores
GPA history



Course taking patterns & unit loads

Orientation
counseling
clubs
tutoring

George Kuh et. al. 2005. *Student Success in College: Creating Conditions that Matter*. San Francisco: Jossey Bass.

Colleen Moore & Nancy Shulock. 2007. *Beyond the Open Door: Increasing Student Success in the California Community Colleges*. Sacramento: CSU Sacramento

Steve Spurling. 2007. The Impact of an Attained English Competence on Subsequent Course Success. *Journal of Applied Research in the Community College*, 15 (1): 29-36.

Vince Tinto. 2008. Student Success and the Building of Involving Educational Communities, in *Promoting Student Success in College*, http://soeweb.syr.edu/academics/grad/higher_education

Student Success

Research on Student Success

Research Questions

- What variables provide the best prediction of student success?
- Recent SJDC studies
 - Orientation
 - Social Science & ENG 79/1A course patterns
 - Tutoring Services

Research on Student Success

- **Multivariate Model – Cohort Used: Fall 2007 Students**

- **Predictor Variables**

- **BACKGROUND**

- Age
- Gender (1 = Female, 0 = Not female)
- Ethnic Group (1 = White, 0 = Non-White)
- DSPS Status
- EOPS Status
- Veteran Status
- Financial Aid (BOG fee waiver)

- **SERIOUSNESS OF PURPOSE**

- Student Education Plan (SEP)
- Units Attempted
- Prior course work in ENG 79/1A

- **ENGAGEMENT**

- Number of Counseling Services
- Tutoring Hours (Math/Science)

- **SKILLS**

- Reading Assessment Level
- Math Assessment Level
- Prior Related Course GPA

Research on Student Success

- **Outcome Variables**
 - Persistence to Spring 2008 term
 - Fall 2007 Overall Success Rate
(Success defined as Semester GPA ≥ 2.00)

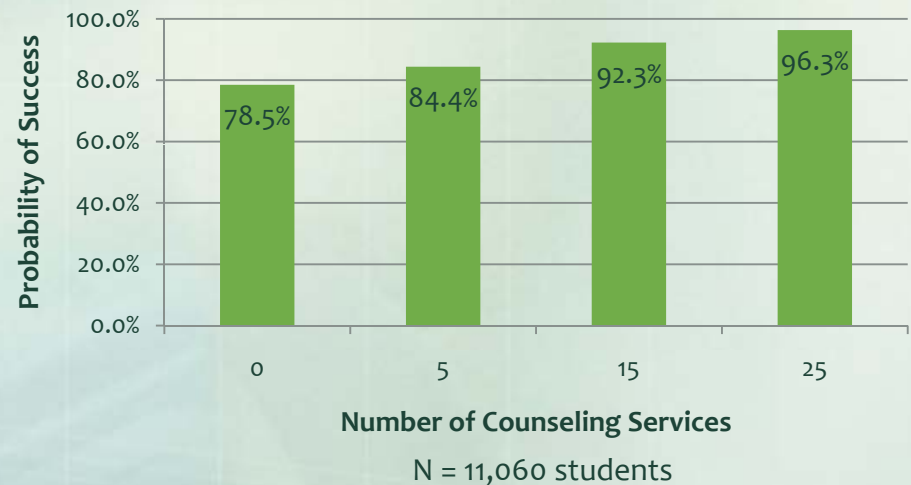
- **Success Rates in Critical Courses**
 - English 79
 - Psychology 1
 - History 17A
 - Political Science 1
 - Math 82
 - Chemistry 3A

Term to Term Persistence

Variable	Co-Efficient	2-tailed <i>p</i> value
AGE***	-0.023	.000
ATTEMPTED UNITS***	0.137	.000
SEP**	-0.168	.007
EOPS*	0.234	.041
BOG*	0.131	.021
NUM COUNSELING SERVICES***	0.079	.000
DSPS*	0.350	.031
ETHNIC_GROUP	-0.006	.917
GENDER_GROUP	0.045	.375
MATH LEVEL	-0.038	.291
READING LEVEL	-0.047	.273
GUID 11***	0.377	.000
SEMESTER GPA***	0.572	.000
CONSTANT	-0.999	.000
CHI-SQUARE	26.010	.001
Nagelkerke R-Square	.231	
Proportion Reduction In Error	13.4%	

* Significant at the 95% confidence level, ** = 99% level, *** = 99.9% Level

Spring 2008 Persistence & Counseling Services Obtained



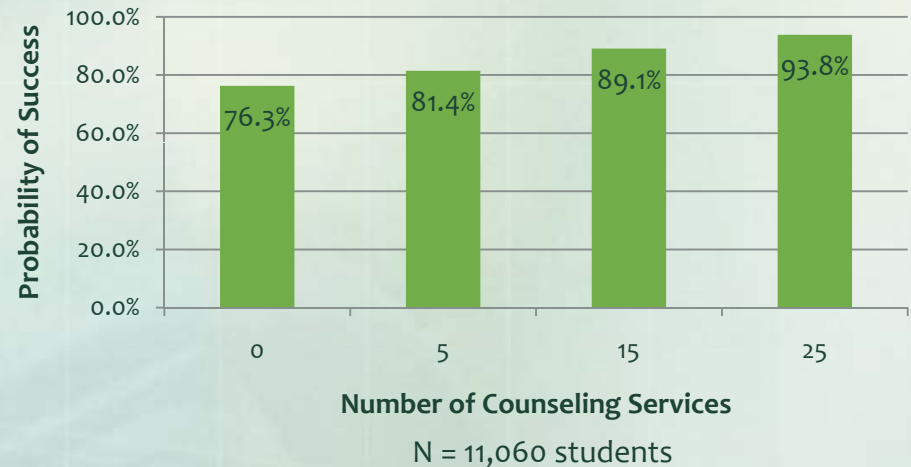
A number of variables help explain persistence, including key indicators of engagement (i.e., counseling & orientation services) All other things being equal, the more counseling services received, the greater the likelihood of student persistence

Overall Term GPA (2.0 or higher)

Variable	Co-Efficient	2-tailed p value
AGE***	0.036	.000
ATTEMPTED UNITS*	0.010	.076
SEP	0.088	.159
EOPS	0.040	.663
BOG***	-0.253	.000
NUM COUNSELING SERVICES***	0.062	.000
DSPS	-0.041	.775
ETHNIC GROUP	0.078	.146
GENDER GROUP***	0.156	.001
MATH LEVEL***	0.282	.000
READING LEVEL***	0.275	.000
GUID 11	0.048	.471
CONSTANT	-0.833	.000
CHI-SQUARE	10.920	.206
Nagelkerke R-Square	.058	
Proportion Reduction In Error	0.0%	

* Significant at the 95% confidence level, ** = 99% level, *** = 99.9% Level

Overall Term GPA = 2.0 or Higher & Counseling Services



Holding all other variables constant, greater amounts of counseling produce greater odds of term GPA exceeding 2.0. The same applies for higher reading and math assessment levels, being a woman, being older, and taking more units.

Successful Completion of ENG 79

Variable	Co-Efficient	2-tailed <i>p</i> value
AGE	-0.014	.211
GENDER GROUP**	0.424	.004
ETHNIC GROUP	0.294	.081
READING	0.214	.115
GUID 11	-0.071	.668
SEP	-0.104	.668
EOPS	-0.094	.701
BOG	-0.270	.102
DSPS	0.553	.283
NUM COUNSELING SERVICES**	0.066	.015
ENGLISH 79 ATTEMPTS***	-1.417	.000
Constant	2.143	.000
CHI-SQUARE	25.646	.001
Nagelkerke R-Square	.268	
Proportion Reduction In Error	30.5%	

* Significant at the 95% confidence level, ** = 99% level, *** = 99.9% Level



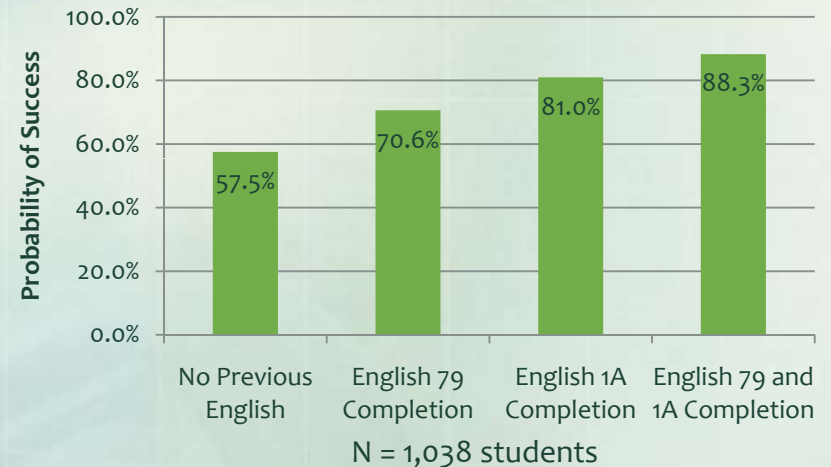
Successful completion of ENG 79 is largely dependent upon skill level upon entry and the ability to pass on the first attempt. Other relevant predictors are gender (women are more likely to succeed) and the number of counseling services.

Successful Completion of PSYCH 1

Variable	Co-Efficient	2-tailed <i>p</i> value
AGE	0.011	.328
GENDER_GROUP	0.026	.861
ETHNIC_GROUP	0.233	.159
READING	-0.017	.892
MATH LEVEL***	0.333	.001
GUID 11**	0.438	.017
SEP*	-0.522	.028
EOPS	0.365	.213
BOG	-0.288	.075
DSPS	0.863	.148
NUMBER OF COUNSELING SERVICES***	0.080	.007
PREVIOUS ENGLISH***	0.572	.000
Constant	-0.702	.058
CHI-SQUARE	14.226	.076
Nagelkerke R-Square	.157	
Proportion Reduction In Error	4.3%	

* Significant at the 95% confidence level, ** = 99% level, *** = 99.9% Level

Psychology 1 Success & English Course Patterns



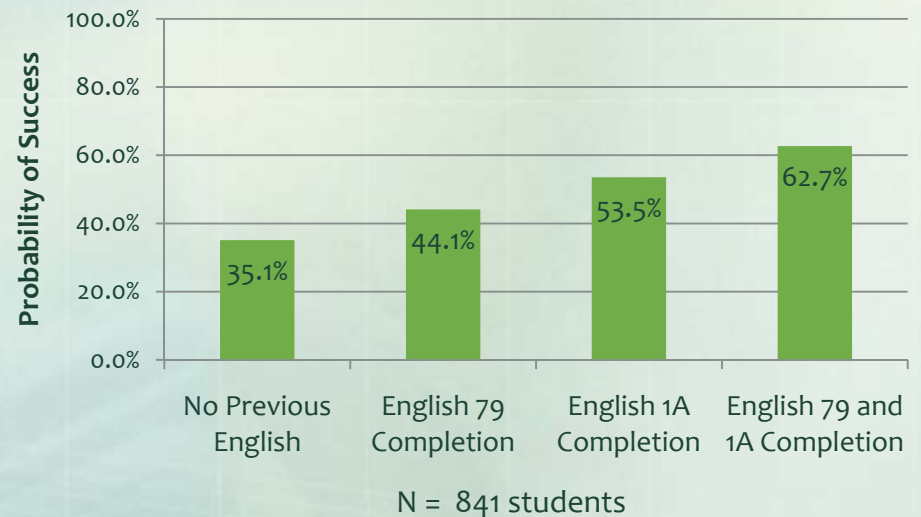
Success in PSYCH 1 is influenced by prior success in English courses & Math skills. Put simply, writing & critical thinking skills are critical for such a course. Other significant predictors of success are counseling services and completion of orientation.

Successful Completion of HIST 17A

Variable	Coefficient	2-tailed <i>p</i> value
AGE**	0.038	.005
GENDER GROUP	0.056	.711
ETHNIC GROUP*	0.297	.051
READING LEVEL***	0.354	.002
GUID 11*	0.345	.083
SEP	-0.280	.182
EOPS	0.239	.463
BOG	-0.282	.109
DSPS	1.085	.133
NUM COUNSELING SERVICES	-0.026	.321
PREVIOUS ENGLISH***	0.378	.000
Constant	-2.211	.000
CHI-SQUARE	9.606	.294
Nagelkerke R-Square	.115	
Proportion Reduction In Error	22.9%	

* Significant at the 95% confidence level, ** = 99% level, *** = 99.9% Level

History 17A Success & English Course Patterns

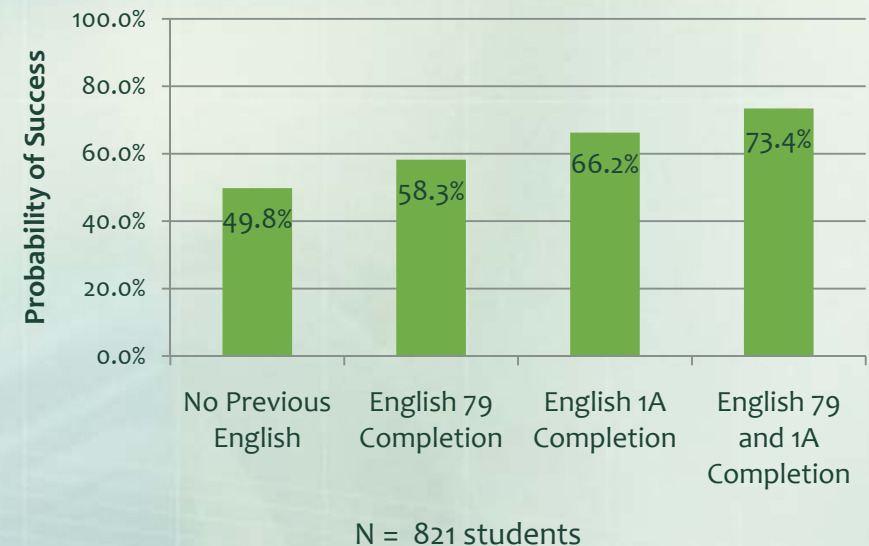


Success in History 17A is influenced by prior success in English courses and reading skill levels. Age, ethnicity, and completion of orientation are also significant predictors.

Successful Completion of POLSC 1

Variable	Co-Efficient	2-tailed <i>p</i> value
AGE	-0.003	.843
GENDER GROUP	0.035	.818
ETHNIC GROUP	0.099	.558
READING LEVEL*	0.275	.022
GUID 11**	0.666	.003
SEP	-0.122	.558
EOPS	-0.006	.984
BOG	-0.138	.429
DSPS	1.159	.089
NUM COUNSELING SERVICES*	0.051	.078
PREVIOUS ENGLISH***	0.341	.000
Constant	-0.681	.067
CHI-SQUARE	9.126	.332
Nagelkerke R-Square	.097	
Proportion Reduction In Error	5.8%	

Political Science 1 Success & English Course Patterns

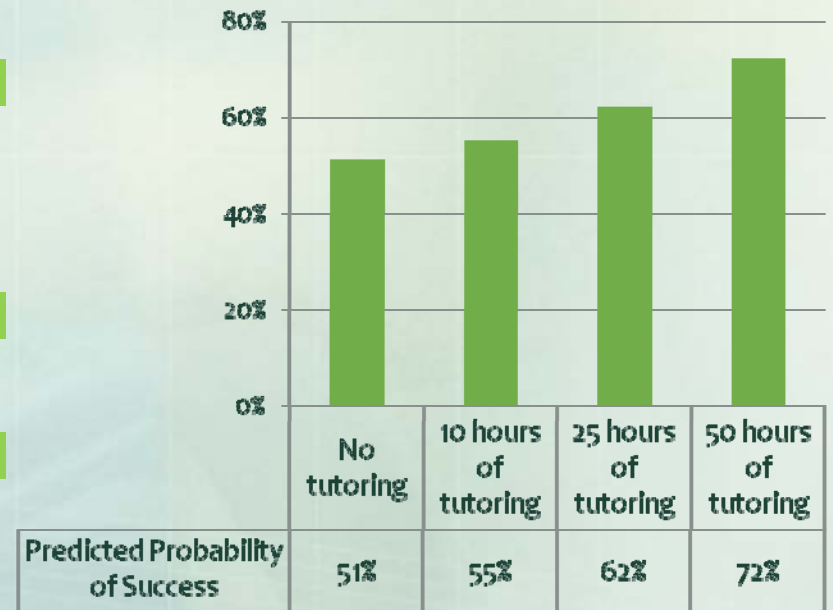


Success in POLSC 1 is influenced by prior success in English courses and reading skill levels. Student engagement measures (counseling and orientation) are also significant predictors of success.

Successful Completion of MATH 82

Variable	Coefficient	2 tailed p value
Gender	.002	.992
Ethnicity	-.168	.348
Age*	.025	.039
Low-income status	-.186	.302
EOPS status	-.492	.273
SEP completion	-.082	.688
Guidance 11 completion	-.297	.168
Prior math course GPA**	.454	.000
Initial math assessment level	.026	.809
Semester unit load	.026	.247
Tutoring hours*	.018	.068
Constant	-1.725	.003
CHI-SQUARE	70.4	.000
Nagelkerke R Square	.127	
Proportion Reduction in Error	24.3%	

Success in Math 82 & Tutoring Hours



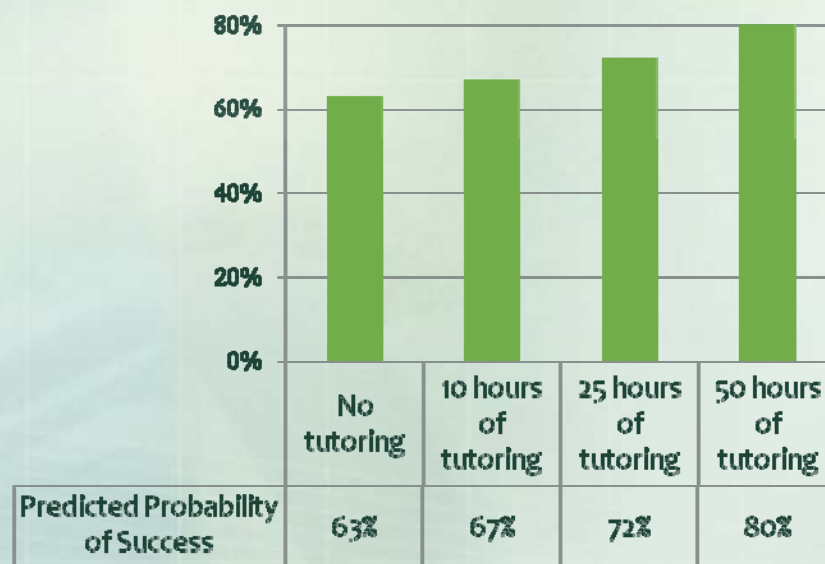
N = 702

Success in Math 82 is influenced strongly by prior math success and student tutoring. Note that age also has a positive effect on Math 82 success

Successful Completion of CHEM 3A

Variable	Coefficient	2 tailed p value
Gender	.326	.206
Ethnicity	.422	.106
Age*	.052	.017
Low-income status	-.392	.126
EOPS status	.243	.704
SEP completion	-.445	.148
Guidance 11 completion	-.380	.246
Prior math course GPA**	.555	.000
Initial math assessment level	.164	.320
Semester unit load	.048	.168
Tutoring hours*	.017	.074
Constant	-3.072	.001
CHI-SQUARE	51.0	.000
Nagelkerke R Square	.180	
Proportion Reduction in Error	16.5%	

Predicted Probability of Success in Chemistry 3A



Success in Chemistry 3A is positively correlated with prior math success, age and tutoring hours.

Concluding Questions & Summary

- What actions have we taken here at Delta to promote student engagement & success?
 - Guidance 11
 - Small Learning Communities
 - Academic Alert
 - Supplemental Instruction
 - Tutoring Services at the Learning Centers
 - Assessment scores & recommendations

Concluding Questions & Summary

- What else can we do to foster success?
 - Recommend better course taking patterns?
 - Implement wider use of orientation & tutoring?
 - Communicate higher expectations?
 - Better sequencing of courses for students?
 - Link courses across disciplines?