STEM Project Internal Evaluation
November 5th, 2010

1. Spring 2010 Grades Comparisons Between The Students Who Participated In The SI Program And The Ones Who Did Not

    a. Summary (P. 2)
    b. Subject: (P. 3 – 24)
        i. Biology
        ii. Astronomy
        iii. Chemistry
        iv. Physics
        v. Math

2. Math Success Center Usage Report (CI Tracker) – Summer 2010 (P. 25)

3. STEM Center Usage Report (CI Tracker) – Summer 2010 (P. 28)

4. STEM APR (P. 31)

    a. UCR Fall2010 Student Transfer Report
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5. Summary of STEM Evaluation Projects from Winter2009 to Fall2010 (P. 35)

6. Next Meetings:

    - December 3rd 10:00 am – Room AD206

Summary Page for SI Quantitative Studies

Table 1 Summary of SI Quantitative Study Results (Spring 2010)

	Courses	SI/Total (%)	Success Rates (%)	Major Findings
Astronomy	ASTR115 & 116	49.4	SI: 88.5 Non-SI: 60.7	• A higher percentage of students passed the ASTR course than the students who did not attend any SI sessions. • The Chi-square and Logistic Regression results reveal that attending SI sessions is significantly related to the course success rates and the level of grades a student obtained
Biology	BIOL105, BIOL200, & 201	54.1	SI: 81.0 Non-SI: 61.8	• A higher percentage of students passed the BIOL course than the students who did not attend any SI sessions. • The Chi-square and Logistic Regression results reveal that attending SI sessions is significantly related to the course success rates and the level of grades a student obtained
Chemistry	CHEM103, 110, 111, & 112	54.1	SI: 79.8 Non-SI:72.4	• A slight higher percentage of students who attended SI sessions passed the Chemistry courses than the students who did not attend any SI sessions. • However, participating in SI program and course success rates is not significantly related.
Physics	PHYS110	15.7	SI: 76.9 Non-SI:60.0	• A slight higher percentage of students who attended SI sessions passed the Physics courses than the students who did not attend any SI sessions. • However, participating in SI program and course success rates is not significantly related.
Math	MATH130, 150, & 170	22.3	SI: 64.2 Non-SI:46.7	• A higher percentage of students who attended SI sessions passed the Math courses than the students who did not attend any SI sessions. • The Chi-square and Logistic Regression results reveal that attending SI sessions is significantly related to the course success rates and the level of grades a student obtained

Quantitative Study Results – Supplemental Instruction Program
BIOLOGY 105, 200 & 201

Executive Summary:

Attending SI sessions has shown to be beneficial to students in terms of increasing their academic performance in this study. The descriptive data analysis results show a higher percentage of students passed the Biology courses than the students who did not attend any SI sessions. The Chi-square and Logistic Regression results reveal that attending SI sessions is significantly related to the course success rates and the level of grades a student obtained. In general, the likelihood of a student passing the course and/or getting a higher grade increased when he or she attended SI sessions.

Key Points:

- The descriptive data analysis result shows that course success rates are higher for students who attended SI sessions than the ones who did not attend any SI sessions (81.0% vs. 61.8%). There are also more students achieving an A, a B, or a C for the course they took when they attended SI sessions in comparison to the ones who did not.
- The Chi-Square test result shows that *Attending SI sessions* and *Passing the course* was significantly related (X^2 =33.31, df=1, p=0.000). In other words, if a student attended SI sessions, he/she had a higher chance to pass the course.
- The Logistic Regression tests reveal that *Attending SI sessions* and *the frequency of attending SI sessions* significantly affected the level of grades a student obtained.
    - Students who attended SI sessions were likely to achieve higher level of grades than the ones who did not (the probability of getting As and Bs and Cs are 1.99 times greater for students who attended SI sessions than the ones who did not attend the sessions).
    - Also, the higher the frequency of attending SI sessions the higher the likelihood that a student obtained a higher level of grade (the probability of getting As and Bs and Cs is 1.06 times greater for each unit of increase in the frequency of attending SI sessions).

Study Results:

1. **Descriptive Data analysis:**
   - Final Grade Comparisons

	A	B	C	A, B, & C Combined	D	F	W	Total
Not Attended SI	14.5% (49)	21.0% (71)	26.3% (89)	61.8% (209)	9.2% (31)	22.2% (75)	6.8% (23)	100% (338)
Attended SI	20.6% (82)	28.6% (114)	31.8% (127)	81.0% (323)	5.8% (23)	11.0% (44)	2.3% (9)	100% (399)
Combined	17.8% (131)	25.1% (185)	29.3% (216)	72.2% (532)	7.3% (54)	16.1% (119)	4.3% (32)	100% (737)

There are more students achieving an A, a B, or a C for the Biology courses they took when they attended SI sessions in comparison to the ones who didn't attend any SI sessions. The course success rates (the combination of A, B, and C) are higher for the students who attended SI sessions (81.0%) than the students who did not attend the sessions (61.8%).

   - Frequency of Attendance

Times of Attendance	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	25	26	27	28	29	30	31	32	35	39	40	46	47	49	55
Frequency	338	63	34	33	30	25	26	14	21	15	11	8	7	17	12	9	11	4	3	2	4	2	8	3	5	1	1	2	3	1	1	1	1	4	4	1	1	1	1

Out of the students who were eligible to attend SI sessions, 45.9% of them (338 out of 737) did not attend any SI sessions.

Appendix

2. Chi-Square Test:

Next, a Chi-Square test was conducted to see if there is a significant relationship between *Attending SI sessions* and *Passing the course* (the combination of A, B, and Cs). Based on the Chi-square test results (X^2 =33.31, df=1, p=0.000), we can conclude that *Attending SI sessions* and *Passing the course* was significantly related. In other words, if a student attended SI sessions, he/she had a higher chance to pass the course. The effect size for the relation is small (φ=0.213).

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	33.310(b)	1	.000		
Continuity Correction(a)	32.365	1	.000		
Likelihood Ratio	33.424	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	33.265	1	.000		
N of Valid Cases	737				

a Computed only for a 2x2 table
b 0 cells (.0%) have expected count less than 5. The minimum expected count is 94.02.

Symmetric Measures

		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Nominal by Nominal	Phi	.213			.000
	Cramer's V	.213			.000
Interval by Interval	Pearson's R	.213	.036	5.899	.000(c)
Ordinal by Ordinal	Spearman Correlation	.213	.036	5.899	.000(c)
N of Valid Cases		737			

a Not assuming the null hypothesis.
b Using the asymptotic standard error assuming the null hypothesis.
c Based on normal approximation.

3. Logistic Regression Tests:

Next, two logistic regression tests were conducted to find out if *Attending SI sessions* affected the level of the grades that a student received and also if *the frequency of Attending SI sessions* affected the level of the grades that a student received. The level of the grades was coded as: A (level 4), B (level 3), C (level 2), and D, F, W, FW (Level 1).

3.1. In the first Logistic Regression, the overall model is significant (p=0.000). *Attending SI sessions* has significantly affected the level of the grades a student achieved. For students who attended SI sessions, we would expect a 0.689 increase in the expected level of grades in the log odds scale. In other words, the odds of getting As and Bs and Cs are 1.99 times (expb=1.99) greater for students who attended SI sessions than the ones who did not attend the sessions.

Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	69.066			
Final	42.790	26.275	1	.000

Link function: Logit.

Parameter Estimates

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Upper Bound	Lower Bound
Threshold	[Grade_Level = 1.00]	-1.283	.107	142.457	1	.000	-1.494	-1.072
	[Grade_Level = 2.00]	-.004	.096	.002	1	.963	-.192	.183
	[Grade_Level = 3.00]	1.260	.110	131.216	1	.000	1.045	1.476
Location	[SI_Yes=.00]	-.689	.135	26.110	1	.000	-.954	-.425
	[SI_Yes=1.00]	0(a)	.	.	0	.	.	.

Link function: Logit.
a This parameter is set to zero because it is redundant.

3.2. In the second Logistic Regression, the overall model is significant (p=0.000). *The frequency of attending SI sessions* has significantly affected the level of the grades a student achieved. For each unit of increase in the frequency of attendance (i.e., going from 0 to 1 time), we would expect a 0.061 increase in the expected level of grades in the log odds scale. In other words, the odds of getting As and Bs and Cs are 1.06 times (expb=1.06) greater for each unit of increase in the frequency of attending SI sessions.

Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	373.007			
Final	312.690	60.317	1	.000

Link function: Logit.

Parameter Estimates

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Upper Bound	Lower Bound
Threshold	[Grade_Level = 1.00]	-.688	.089	59.813	1	.000	-.862	-.514
	[Grade_Level = 2.00]	.619	.087	50.829	1	.000	.449	.789
	[Grade_Level = 3.00]	1.942	.115	285.220	1	.000	1.716	2.167
Location	SI	.061	.008	55.001	1	.000	.045	.077

Link function: Logit.

Quantitative Study Results – Supplemental Instruction Program
Astronomy 115 & 116

Executive Summary:

Attending SI sessions has shown to be beneficial to students in terms of increasing their academic performance in this study. The descriptive data analysis results show a higher percentage of students passed the ASTR courses than the students who did not attend any SI sessions. The Chi-square and Logistic Regression results reveal that attending SI sessions is significantly related to the course success rates and the level of grades a student obtained. In general, the likelihood of a student passing the course and/or getting a higher grade increased when he or she attended SI sessions.

Key Points:

- The descriptive data analysis result shows that course success rates are higher for students who attended SI sessions than the ones who did not attend any SI sessions (88.5% vs. 60.7%). There are also more students achieving either an A, a B or a C for the course they took when they attended SI sessions in comparison to the ones who did not.
- The Chi-Square test result shows that *Attending SI sessions* and *Passing the course* was significantly related (X^2 =17.907, df=1, p=0.000). In other words, if a student attended SI sessions, he/she had a higher chance to pass the course**.**
- The Logistic Regression tests reveal that *Attending SI sessions* and *the frequency of attending SI sessions* significantly affected the level of grades a student obtained.
    - Students who attended SI sessions were likely to achieve higher level of grades than the ones who did not (the probability of getting As and Bs and Cs are 2.8 times greater for students who attended SI sessions than the ones who did not attend the sessions).
    - Also, the higher the frequency of attending SI sessions the higher the likelihood that a student obtained a higher level of grade (the probability of getting As and Bs and Cs is 1.08 times greater for each unit of increase in the frequency of attending SI sessions).

Study Results:

1. **Descriptive Data analysis:**
   - Final Grade Comparisons

	A	B	C	A, B, & C Combined	D	F	W	Total
Not Attended SI	19.1% (17)	23.6% (21)	18.0% (16)	60.7% (54)	13.5% (12)	13.5% (12)	12.4% (11)	100% (89)
Attended SI	29.9% (26)	37.9% (33)	20.7% (18)	88.5% (77)	6.9% (6)	4.6% (4)	0.0% (0)	100% (87)
Combined	24.4% (43)	30.7% (54)	19.3% (34)	74.4% (131)	10.2% (18)	9.1% (16)	6.3% (11)	100% (176)

There are more students achieving either an A, B or a C for the Astronomy courses they took when they attended SI sessions in comparison to the ones who didn't attend any SI sessions. There is also higher percentage of course success rates (the combination of A, B, and C) for the students who attended SI sessions (88.5%) than the students who did not attend the sessions (60.7%).

- Frequency of Attendance

Times of Attendance	0	1	2	3	4	5	6	7	8	9	10	12	13	14	15	16	17	19	20	23	24	25	26	28	37
Frequency	89	17	11	16	5	6	4	2	2	1	3	2	2	2	1	2	1	1	1	1	1	1	2	2	1

Out of the students who were eligible to attend SI sessions, 53.3% of them (89 out of 176) did not attend any SI sessions.

Appendix

2. Chi-Square Test:

Next, a Chi-Square test was conducted to see if there is a significant relationship between *Attending SI sessions* and *Passing the course* (the combination of A, B, and Cs). Based on the Chi-square test results (X^2 =17.907, df=1, p=0.000), we can conclude that Attending SI sessions and Passing the course was significantly related. In other words, if a student attended SI sessions, he/she had a higher chance to pass the course. The effect size for the relation is small (φ=0.319).

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	17.907(b)	1	.000		
Continuity Correction(a)	16.474	1	.000		
Likelihood Ratio	18.746	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	17.805	1	.000		
N of Valid Cases	176				

a Computed only for a 2x2 table
b 0 cells (.0%) have expected count less than 5. The minimum expected count is 22.24.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.319	.000
	Cramer's V	.319	.000
N of Valid Cases		176	

a Not assuming the null hypothesis.
b Using the asymptotic standard error assuming the null hypothesis.

3. Logistic Regression Tests:

Next, two logistic regression tests were conducted to find out if *Attending SI sessions* affected the level of the grades that a student received and also if *the frequency of Attending SI sessions* affected the level of the grades that a student received. The level of the grades was coded as: A (level 4), B (level 3), C (level 2), and D, F, W, FW (Level 1).

3.1. In the first Logistic Regression, the overall model is significant (p=0.000). *Attending SI sessions* has significantly affected the level of the grades a student achieved. For students who attended SI sessions, we would expect a 1.031 increase in the expected level of grades in the log odds scale. In other words, the odds of getting As and Bs and Cs are 2.8 times (expb=2.8) greater for students who attended SI sessions than the ones who did not attend the sessions.

Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	45.684			
Final	31.754	13.929	1	.000

Link function: Logit.

Parameter Estimates

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Upper Bound	Lower Bound
Threshold	[Grade_Level = 1.00]	-.593	.209	8.046	1	.005	-1.003	-.183
	[Grade_Level = 2.00]	.334	.205	2.667	1	.102	-.067	.735
	[Grade_Level = 3.00]	1.732	.244	50.593	1	.000	1.255	2.209
Location	SI_yes	1.031	.280	13.562	1	.000	.482	1.580

Link function: Logit.

3.2. In the second Logistic Regression, the overall model is significant (p=0.001). *The frequency of attending SI sessions* has significantly affected the level of the grades a student achieved. For each unit of increase in the frequency of attendance (i.e., going from 0 to 1 time),

we would expect a 0.078 increase in the expected level of grades in the log odds scale. In other words, the odds of getting As and Bs and Cs are 1.08 times (expb=1.08) greater for each unit of increase in the frequency of attending SI sessions.

Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	138.988			
Final	124.790	14.198	1	.000

Link function: Logit.

Parameter Estimates

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Upper Bound	Lower Bound
Threshold	[Grade_Level = 1.00]	-.840	.183	20.995	1	.000	-1.200	-.481
	[Grade_Level = 2.00]	.070	.168	.171	1	.679	-.260	.400
	[Grade_Level = 3.00]	1.488	.207	51.719	1	.000	1.083	1.894
Location	SI	.078	.023	11.655	1	.001	.033	.123

Link function: Logit.

Quantitative Study Results – Supplemental Instruction Program
CHEMISTRY 103, 110, 111, & 112*

Executive Summary:

The descriptive data analysis results show a slight higher percentage of students who attended SI sessions passed the Chemistry courses than the students who did not attend any SI sessions. However, participating in SI program and course success rates are not significantly related.

Key Points:

- The descriptive data analysis result shows that course success rates are a lightly higher for students who attended SI sessions than the ones who did not attend any SI sessions (79.8% vs. 72.4%).

- However, *Attending SI Sessions* and *Passing the Course* are not significantly related (X^2 =1.755, df=1, p=0.185).

Study Results:

1. **Descriptive Data analysis:**
   - Final Grade Comparisons

	A	B	C	A, B, & C Combined	D	F	W	I	Total
Not Attended SI	18.1% (19)	29.5% (31)	24.8% (26)	72.4% (76)	7.6% (8)	10.5% (11)	8.6% (9)	1.0% (1)	100% (105)
Attended SI	17.7% (22)	26.6% (33)	35.5% (44)	79.8% (99)	4.8% (6)	4.0% (5)	11.3% (14)	0.0% (0)	100% (124)
Combined	17.9% (41)	27.9% (64)	30.6% (70)	76.4% (175)	6.1% (14)	7.0% (16)	10.0% (23)	0.4% (1)	100% (229)

The percentage of course success rates (the combination of A, B, and C) for the students who attended SI sessions (79.8%) is slightly higher than the students who did not attend the sessions (72.4%).

- Frequency of Attendance

Times of Attendance	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	16	17	18	19	20	24	27	28	30	28	32	35	36
Frequency	105	16	18	7	12	12	7	5	6	6	1	1	4	2	3	5	2	1	2	1	1	1	4	1	1	1	2	1

Out of the students who were eligible to attend SI sessions, 45.9% of them (105 out of 229) did not attend any SI sessions.

Appendix

1. Chi-Square Test:

Next, a Chi-Square test was conducted to see if there is a significant relationship between *Attending SI sessions* and *Passing the course* (the combination of A, B, and Cs). Based on the Chi-square test results (X^2 =1.755, df=1, p=0.185), we can conclude that *Attending SI Sessions* and *Passing the Course* are not significantly related.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.755(b)	1	.185		
Continuity Correction(a)	1.365	1	.243		
Likelihood Ratio	1.750	1	.186		
Fisher's Exact Test				.213	.121
Linear-by-Linear Association	1.747	1	.186		
N of Valid Cases	229				

a Computed only for a 2x2 table
b 0 cells (.0%) have expected count less than 5. The minimum expected count is 24.76.

Quantitative Study Results – Supplemental Instruction Program
Physics 110

Executive Summary:

The descriptive data analysis results show a slight higher percentage of students who attended SI sessions passed the Chemistry courses than the students who did not attend any SI sessions. However, participating in SI program and course success rates are not significantly related.

Key Points:

- The descriptive data analysis result shows that course success rates are a lightly higher for students who attended SI sessions than the ones who did not attend any SI sessions (76.9% vs. 60.0%).

- However, *Attending SI Sessions* and *Passing the Course* are not significantly related (X^2 =1.342, df=1, p=0.247).

Study Results:

1. **Descriptive Data analysis:**
   - Final Grade Comparisons

	A	B	C	A, B, & C Combined	D	F	W	Total
Not Attended SI	8.6% (6)	18.6% (13)	32.9% (23)	60.0% (42)	21.4% (15)	14.3% (10)	4.3% (3)	100% (70)
Attended SI	23.1% (3)	15.4% (2)	38.5% (5)	76.9% (10)	15.4% (2)	7.7% (1)	0.0% (0)	100% (13)
Combined	10.8% (9)	18.1% (15)	33.7% (28)	62.7% (52)	20.5% (17)	13.3% (11)	3.6% (3)	100% (83)

The percentage of course success rates (the combination of A, B, and C) for the students who attended SI sessions (76.9%) is slightly higher than the students who did not attend the sessions (60.0%).

- Frequency of Attendance

Times of Attendance	0	1	2	4	9	13	14
Frequency	70	6	2	2	1	1	1

Out of the students who were eligible to attend SI sessions, 84.3% of them (70 out of 83) did not attend any SI sessions.

Appendix

1. Chi-Square Test:

Next, a Chi-Square test was conducted to see if there is a significant relationship between *Attending SI sessions* and *Passing the course* (the combination of A, B, and Cs). Based on the Chi-square test results (X^2 =1.342, df=1, p=0.247), we can conclude that *Attending SI Sessions* and *Passing the Course* are not significantly related.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.342(b)	1	.247		
Continuity Correction(a)	.716	1	.397		
Likelihood Ratio	1.424	1	.233		
Fisher's Exact Test				.353	.201
Linear-by-Linear Association	1.326	1	.250		
N of Valid Cases	83				

a Computed only for a 2x2 table
b 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.86.

Quantitative Study Results – Supplemental Instruction Program
Math 130, 150, and 170

Executive Summary:

Attending SI sessions has shown to be beneficial to students in terms of increasing their academic performance in this study. The descriptive data analysis results show a higher percentage of students passed the Math courses than the students who did not attend any SI sessions. The Chi-square and Logistic Regression results reveal that attending SI sessions is significantly related to the course success rates and the level of grades a student obtained. In general, the likelihood of a student passing the course and/or getting a higher grade increased when he or she attended SI sessions.

Key Points:

- The descriptive data analysis result shows that course success rates are a higher for students who attended SI sessions than the ones who did not attend any SI sessions (64.2% vs. 46.7%).

- The Chi-Square test result shows that *Attending SI sessions* and *Passing the course* was significantly related (X^2 =12.754, df=1, p=0.000). In other words, if a student attended SI sessions, he/she had a higher chance to pass the course.

- The Logistic Regression tests reveal that *Attending SI sessions* and *the frequency of attending SI sessions* significantly affected the level of grades a student obtained.
    - Students who attended SI sessions were likely to achieve higher level of grades than the ones who did not (the probability of getting As and Bs and Cs are 1.8 times greater for students who attended SI sessions than the ones who did not attend the sessions).
    - Also, the higher the frequency of attending SI sessions the higher the likelihood that a student obtained a higher level of grade (the probability of getting As and Bs and Cs is 1.08 times greater for each unit of increase in the frequency of attending SI sessions).

Study Results:

1. **Descriptive Data analysis:**
   - Final Grade Comparisons

	A	B	C	A, B, & C Combined	D	F	FW	W	Total
Not Attended SI	8.1% (38)	17.1% (80)	21.4% (100)	46.7% (218)	8.1% (38)	22.7% (106)	6.6% (31)	15.8% (74)	100% (467)
Attended SI	14.2% (19)	18.7% (25)	31.3% (42)	64.2% (86)	14.2% (19)	17.2% (23)	0.7% (1)	3.7% (5)	100% (134)
Combined	9.5% (57)	17.5% (105)	23.6% (142)	50.6% (304)	9.5% (57)	21.5% (129)	5.3% (32)	13.1% (79)	100% (601)

There are more students achieving either an A or a B or a C for the Math courses they took when they attended SI sessions in comparison to the ones who didn't attend any SI sessions. There is also higher percentage of course success rates (the combination of A, B, and C) for the students who attended SI sessions (64.2%) than the students who did not attend the sessions (46.7%).

- Frequency of Attendance

Times of Attendance	0	1	2	3	4	5	6	7	9	10	11	12	13	14	15	17	18	19	20	23	25	27	28	30	31	33
Frequency	467	24	26	16	15	9	2	11	3	1	1	3	2	1	3	2	1	2	1	1	3	1	1	1	1	1

Out of the students who were eligible to attend SI sessions, 77.7% of them (467 out of 601) did not attend any SI sessions.

Appendix

2. Chi-Square Test:

Next, a Chi-Square test was conducted to see if there is a significant relationship between *Attending SI sessions* and *Passing the course* (the combination of A, B, and Cs). Based on the Chi-square test results (X^2 =12.754, df=1, p=0.000), we can conclude that *Attending SI sessions* and *Passing the course* was significantly related. In other words, if a student attended SI sessions, he/she had a higher chance to pass the course. The effect size for the relation is small (φ=0.146).

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	12.754(b)	1	.000		
Continuity Correction(a)	12.064	1	.001		
Likelihood Ratio	12.903	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	12.733	1	.000		
N of Valid Cases	601				

a Computed only for a 2x2 table
b 0 cells (.0%) have expected count less than 5. The minimum expected count is 66.22.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.146	.000
	Cramer's V	.146	.000
N of Valid Cases		601	

a Not assuming the null hypothesis.
b Using the asymptotic standard error assuming the null hypothesis.

3. Logistic Regression Tests:

Next, two logistic regression tests were conducted to find out if *Attending SI sessions* affected the level of the grades that a student received and also if *the frequency of Attending SI sessions* affected the level of the grades that a student received. The level of the grades was coded as: A (level 4), B (level 3), C (level 2), and D, F, W, FW (Level 1).

3.1. In the first Logistic Regression, the overall model is significant (p=0.000). *Attending SI sessions* has significantly affected the level of the grades a student achieved. For students who attended SI sessions, we would expect a 0.587 increase in the expected level of grades in the log odds scale. In other words, the odds of getting As and Bs and Cs are 1.8 times (expb=1.8) greater for students who attended SI sessions than the ones who did not attend the sessions.

Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	46.713			
Final	35.947	10.766	1	.001

Link function: Logit.

Parameter Estimates

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Upper Bound	Lower Bound
Threshold	[Grade_Level = 1.00]	.111	.091	1.470	1	.225	-.068	.290
	[Grade_Level = 2.00]	1.145	.103	122.401	1	.000	.942	1.348
	[Grade_Level = 3.00]	2.412	.149	262.559	1	.000	2.120	2.704
Location	SI_yes	.587	.180	10.599	1	.001	.233	.940

Link function: Logit.

3.2. In the second Logistic Regression, the overall model is significant (p=0.000). *The frequency of attending SI sessions* has significantly affected the level of the grades a student achieved. For each unit of increase in the frequency of attendance (i.e., going from 0 to 1 time), we would expect a 0.074 increase in the expected level of grades in the log odds scale. In other words, the odds of getting As and Bs and Cs are 1.08 times (expb=1.08) greater for each unit of increase in the frequency of attending SI sessions.

Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	190.214			
Final	172.737	17.477	1	.000

Link function: Logit.

Parameter Estimates

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Upper Bound	Lower Bound
Threshold	[Grade_Level = 1.00]	.075	.085	.768	1	.381	-.092	.242
	[Grade_Level = 2.00]	1.115	.098	130.722	1	.000	.924	1.306
	[Grade_Level = 3.00]	2.405	.147	268.775	1	.000	2.118	2.693
Location	SI	.074	.017	18.085	1	.000	.040	.108

Link function: Logit.

MA 130 Math Success Center Usage Report
Summer 2010

Table 1. Aggregated Usage Frequency Table for Math Success Center in Winter 09, Spring 09, Fall 09, Spring 2010, and Summer 2010 Semesters

	Average/Mean	Median	Minimum	Maximum
Winter 09 (Jan 20th – Feb 12th)	2 hrs + 57 mins	1 hr + 35 mins	2 min	18 hrs + 13 mins
Spring 09 (Feb 23rd – June 2nd)	7 hrs + 52 mins	2 hrs + 38 mins	1 min	132 hrs + 22 mins
Fall 09 (Aug 28th – Dec 19th)	7 hrs + 55 mins	3 hrs + 10 mins	1 min	136 hrs + 28 mins
Spring 2010 (Feb 16th – June 12th)	9 hrs + 1 mins	2 hrs + 56 mins	1 min	133 hrs + 57 mins
Summer 2010 (Jun 21st – Aug 12th)	2 hrs + 36 mins	42 mins	1 min	31 hrs + 2 mins

Table 2. Aggregated Usage Breakouts for Math Success Center in Winter 09, Spring 09, Fall 09, Spring 2010, and Summer 2010 Semesters

	< 1 hour	1 to 3 hrs	3 to 6 hrs	6 to 10 hrs	10 to 20 hrs	20 to 40 hrs	40 to 80 hrs	80+ hrs	Total Students
Winter 09 (Jan 20th – Feb 12th)	37 (31.1%)	47 (39.5%)	19 (16.0%)	10 (8.4%)	6 (5.0%)	0	0	0	119
Spring 09 (Feb 23rd – June 2nd)	166 (24.0%)	199 (28.7%)	110 (15.9%)	60 (8.7%)	90 (13.0%)	43 (6.2%)	21 (3.0%)	4 (0.6%)	693
Fall 09 (Aug 28th – Dec 19th)	153 (21.5%)	190 (26.7%)	117 (16.4%)	87 (12.2%)	98 (13.8%)	42 (5.9%)	22 (3.1%)	3 (0.4%)	712
Spring 2010 (Feb 16th – June 12th)	141 (22.3%)	179 (28.3%)	90 (14.2%)	69 (10.9%)	73 (11.5%)	51 (8.1%)	22 (3.5%)	8 (1.3%)	633
Summer 2010 (Jun 21st – Aug 12th)	63 (61.8%)	14 (13.7%)	14 (13.7%)	5 (4.9%)	3 (2.9%)	3 (2.9%)			102

Notes:

1. In Winter 09 semester, there are 2.8% usages in which students did not log out (N=10 out of 353). Thus, the minutes of these usages were replaced by the median of all the usages (minutes=48).

2. In Spring 09 semester, there are 2.4% usages in which students did not log out (N=101 out of 4,165). Thus, the minutes of these usages were replaced by the median of all the usages (minutes=62).

3. In Fall 09 semester, there are 4.9% usages in which students did not log out (N=211 out of 4,309). Thus, the minutes of these usages were replaced by the median of all the usages (minutes=61).

4. In Spring 2010 semester, there are 3.3% usages in which students did not log out (N=141 out of 4,221). Thus, the minutes of these usages were replaced by the median of all the usages (minutes=63).

5. In Summer 2010 semester, there are 2.9% usages in which students did not log out (N=8 out of 275). Thus, the minutes of these usages were replaced by the median of all the usages (minutes=42).

MA 129 STEM Success Center Usage Report
Summer 2010

Table 1. Aggregated Usage Frequency Table for STEM Success Center in Fall 09, Winter 2010, Spring 2010, and Summer 2010 Semesters

	Average/Mean	Median	Minimum	Maximum
Fall 09 (Aug 28th – Dec 19th)	7 hrs + 30 mins	2 hrs + 45 mins	1 min	83 hrs + 24 mins
Winter 2010 (Jan 4th – Feb 11th)	1 hr + 34 mins	1 hr + 5 mins	1 min	9 hrs + 14 mins
Spring 2010 (Feb 16th – June 12th)	6 hrs + 37 mins	3 hrs + 26 mins	1 min	71 hrs + 56 mins
Summer 2010 (Jun 21st – Aug 12th)	4 hrs + 27 mins	2 hrs + 47 mins	1 min	24 hrs + 4 mins

Table 2. Aggregated Usage Breakouts for STEM Success Center in Fall 09, Winter 2010, Spring 2010, and Summer 2010 Semesters

	< 1 hour	1 to 3 hrs	3 to 6 hrs	6 to 10 hrs	10 to 20 hrs	20 to 40 hrs	40 to 80 hrs	80+ hrs	Total Students
Fall 09 (Aug 28th – Dec 19th)	155 (19.1%)	265 (32.7%)	118 (14.5%)	75 (9.2%)	114 (14.1%)	64 (7.9%)	19 (2.3%)	1 (0.1%)	811
Winter 2010 (Jan 4th – Feb 11th)	20 (33.9%)	32 (54.2%)	6 (10.2%)	1 (1.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	59
Spring 2010 (Feb 16th – June 12th)	180 (20.2%)	233 (26.1%)	178 (19.9%)	111 (12.4%)	122 (13.7%)	61 (6.8%)	8 (0.9%)	0 (0.0%)	893
Summer 2010 (Jun 21st – Aug 12th)	43 (21.0%)	63 (30.7%)	43 (21.0%)	31 (15.1%)	24 (11.7%)	1 (0.5%)	0 (0.0%)	0 (0.0%)	205

Notes:

1. In Fall 09 semester, there are 4.4% usages in which students did not log out (N=246 out of 5, 565). Thus, the minutes of these usages were replaced by the median of all the usages (minutes=60).

2. In CI-Tracker, LocationID is MA130 and CategoryName is STEM Success Center, General_Course_work, and Math Success Center Tutoring.

3. In Spring 2010 semester, there are 10.2% usages in which students did not log out (N=545 out of 5, 360). Thus, the minutes of these usages were replaced by the median of all the usages (minutes=59).

4. In Summer2010 semester, there are 4.3% usages in which students did not log out (N=36 out of 835). Thus, the minutes of these usages were replaced by the median of all the usages (minutes=59).

Fall 2010 New Transfer Enrollment from Citrus College
University of California, Riverside

Fall 2010 New Transfer Enrollment from Citrus College at the University of California, Riverside

Major Desc	African American	Asian/Pac Islander	Hispanic	Native American	White	Unknown	Nonres Aliens	Total
Anthropology			1					1
Business Administration			2					2
Business Economics		1						1
Environmental Sciences		1			1			2
Liberal Studies					1			1
Mathematics			1					1
Media and Cultural Studies					1			1
Psychology	1	1	6					8
Sociology		1						1
Undeclared - College of Natural and Agricultural Science, Life Science								
Total	1	4	10	0	3	0	0	18

Fall 2009 New Transfer Enrollment from Citrus College at the University of California, Riverside

Major Desc	African American	Asian/Pac Islander	Hispanic	Native American	White	Unknown	Nonres Aliens	Total
Business Preparatory		1					2	3

Economics/Law & Society			1					1
English		1						1
History			1					1
Political Science						1		1
Political Science/Law & Society				1				1
Psychology			1					1
Religious Studies					1			1
Theatre			1		1			2
Undeclared - College of Natural and Agricultural Science, Life Science			1					1
Total	0	2	5	1	2	1	2	13

Fall 2008 New Transfer Enrollment from Citrus College at the University of California, Riverside

Major Desc	**African American**	**Asian/Pac Islander**	**Hispanic**	**Native American**	**White**	**Unknown**	**Nonres Aliens**	**Total**
Art History/Religious Studies			1					1
Business Administration		1						1
Business Preparatory							1	1
Economics			1					1
English			1					1
Film and Visual Culture			1					1
Mathematics			1					1
Total	0	1	5		0	0	1	7

Fall 2010 Transfer Enrollment from Citrus College
California State University at Fullerton

Fall 2010

Major	Continuing						New Transfer	
	Hispanic	Asian	White	Unknown	Nonres	**Total**	Hispanic	**Total**
Biochemistry	0	0	0	0	1	**1**	1	**1**
Biological Science	2	0	0	1	0	**3**	0	**0**
Chemistry	0	0	0	0	0	**0**	0	**0**
Computer Engineering	1	0	1	0	0	**2**	0	**0**
Computer Science	2	0	1	0	0	**3**	0	**0**
Electrical Engineering	0	0	1	0	0	**1**	0	**0**
Information Systems	1	0	0	0	0	**1**	0	**0**
Mathematics	1	0	1	1	0	**3**	0	**0**
Physics	0	0	0	0	0	**0**	0	**0**
Systems Engineering	0	1	0	0	0	**1**	0	**0**
Total	7	1	4	2	1	**15**	1	**1**

Fall 2009

Major	Continuing						New Transfer	
	Hispanic	Asian	White	Unknown	Nonres	**Total**	White	**Total**
Biochemistry	0	0	0	0	1	**1**	0	**0**
Biological Science	2	0	0	1	0	**3**	0	**0**
Chemistry	0	0	1	0	1	**2**	0	**0**
Computer Engineering	1	0	1	0	0	**2**	0	**0**
Computer Science	2	0	1	1	0	**4**	0	**0**
Electrical Engineering	1	0	1	0	0	**2**	0	**0**
Information Systems	1	1	0	0	0	**2**	0	**0**
Mathematics	1	0	1	0	0	**2**	1	**1**
Physics	0	0	0	0	0	**0**	0	**0**
Systems Engineering	0	0	0	0	0	**0**	0	**0**
Total	8	1	5	2	2	**18**	1	**1**

Summary of STEM Evaluation Projects from Winter2009 to Fall2010

		Winter 2009	Spring 2009	Summer 2009	Fall 2009	Winter 2010	Spring 2010	Summer 2010	Fall 2010
1	MA 127 Math Success Center Usage (CI-Tracker)	X	X		X	X	X	X	X
2	Weekly Hourly Comparisons (MSC CI-Tracker)		X		X				
3	Math Success Center Usage Satisfaction Survey		X		X		X		X
4	Math Success Center Usage Satisfaction Survey - Correlation Study				X				
5	Math Success Center Usage Satisfaction Survey - Comparison Study Between Semesters				X				
6	Math Success Center Performance Comparisons		X		X		X		X
7	Math Success Center - MATH 130, MATH 150, and MATH 165 Comparisons		X						
8	MATH 020 Course Success-Rate Comparisons Before and After the Offering of MATH 017		X						
9	Math Progression Study - Percentage of Students who Started MATH 017 (MATH 020) and Moved on to MATH 150 in Three Years		X						
10	PAGE Program Evaluation			X				X	
11	STEM Center Usage (CI-Tracker)		X		X	X	X	X	X
12	SI Performance Comparisons		X	X	X		X	X	X
13	SI Interview (Science)		X		X				
14	SI Interview (Math)								
15	CHEM 103 Tutoring Program			X					
16	STEM Center Satisfaction Survey				X		X		X
17	Focus-on-calculus Peer Mentoring			X	X	X			
18	Motivation Study						X		
19	Calculus Enrichment/Readiness Workshop				X	X			
20	Online Tutoring Survey				X				
21	Math029 Lab Survey						X		
22	STEM Day (Middle-school Students) Evaluations						X		