



Summary of TILT Tutoring & Study Group Programs: AY 2017-2018

The Institute for Learning and Teaching (TILT) provides academic support via the tutoring and study group programs. To quantify the efficacy of the tutoring program, the current analysis compares course grade points of program participants to non-participants enrolled in the offered courses.

Among all courses that offered tutoring and study groups over the academic year, there were 2,686 unique students (2,216 students for tutoring and 600 for study group) for the AY17-18.¹ Frequently, students attended tutoring for multiple courses (see Table 1). No students went to more than one study group per term; however, 52 students attended two study groups over the academic year.

Table 1. Number of tutoring courses

# of Tutoring Participants	1 Course	2 Courses	3 Courses	4 Courses	5 Courses	6 Courses
AY 2017-2018	1651	389	133	37	9	1
FA17	1395	230	14	1	0	0
SP18	807	132	14	2	1	0

Student Characteristics of Program Participants

When examining who attends TILT programs, females, sophomores, juniors, STEM majors, and students of a minoritized race and/or ethnicity were well represented in the tutoring program when compared to non-participant students in the same courses. These are consistent findings with previous years. In particular, tutoring participants had a higher proportion of STEM majors and students with a minoritized race/ethnicity compared to non-tutoring participants (11.5 and 8.2 percentage points (PP) higher respectively). Among unique program participants over the academic year, about 55% of tutoring participants were women and 28% were of a minority race or ethnicity (non-tutoring participants: 50%, and 23% respectively). New students and freshmen were underrepresented in comparison to the proportion represented in the non-tutoring group. Overall, tutoring participants had significantly lower average academic preparedness scores (CCHE index) (mean = 115.19) than non-tutoring participants (mean = 115.88); however, there was only a .7 point difference in index (a small effect, $d = .05$)² (see Table 2).

Examining the study group program, STEM majors and females were well represented compared to non-study group participants (13.8 and 24.8 PP higher respectively), while freshmen were underrepresented (18 PP lower than non-study group participants). In contrast to the tutoring program, study group

¹ There were 756 students who were not included in the report due to attending tutoring or study group for a course they were not enrolled in for the corresponding term.

² For a statistically significant result, an effect size, reported as Cohen's d , is included. An effect size is a standardized measure that describes the magnitude of the difference between the two group means. This allows for a practical interpretation for understanding to what extent the two groups differ. Although there is no objective rule, Cohen (1988) suggests the following guide for interpreting an effect size: small = .20, moderate = .50, large = .80.



participants had significantly higher average academic index scores (mean = 116.89) than non-study group participants (mean = 114.44; $d=.19$, $p < .01$). Generally, study group participants were more similar to their comparison group in their student characteristics compared to the tutoring program groups (see Table 3).

Relationship between the Tutoring Program and Course Grade Point

Looking at all courses that offered tutoring programs for the 2017-2018 academic year, students who participated in tutoring programs earned a significantly lower average course grade point (mean = 2.59) when compared to non-tutoring participants (mean = 2.73) ($p < .01$)³. Although this was a relatively small effect ($d=.12$) this relationship remained significant even after controlling for index ($p < .01$). Specifically, of the 39 tutoring courses analyzed, CHEM 343 and MATH 155 were the only courses where tutoring participants received a significantly higher average course grade point than non-tutoring participants (moderate to low effect size). However, non-tutoring participants had significantly higher course grades for CHEM 111, MATH 160, STAT 204 and STAT 201 compared to tutoring participants. Note, non-tutoring participants had significantly higher average index scores compared to tutoring participants for 12 of the 39 courses (effect sizes ranged from moderate to low) (see Appendix: Table 4).⁴

After noting the statistically significant differences between participants' index scores in the tutoring program, the relationship between the tutoring program and course grade was examined after controlling for the impact of index. After controlling for index, tutoring participants still had a significantly higher average course grade point for CHEM 343 and MATH 155 compared to non-participants ($B = .46$ and $.36$ respectively, $p < .01$). Additionally, three other courses emerged with significant findings. Tutoring participants in BZ 350, CHEM 107, and STAT 301 all had a significant and positive impact on course grade point compared to non-tutoring courses ($B = .24$, $.45$, $.27$ respectively, $p < .05$).

Relationship between the Study Group Program and Course Grade Point

Conversely to the tutoring program, when looking at all courses that offered study groups for the 2017-2018 academic year, students who participated in study groups earned significantly higher course grade points on average (mean = 2.59) when compared to non-study group participants (mean = 2.73) ($p < .03$, $d = .03$). However, this overall positive finding was non-significant when controlling for index. For two-thirds of the courses, study group participants received higher course grades on average than those non-participants in courses with study group opportunities. This effect was considerably large for ANEQ 305 ($d=.82$). Even after controlling for index, study group participants received higher average course grades for ANEQ 305, CIVE 360, and HES 403 compared to non-study group participants ($B = 1.2$, $.44$, $.52$, $p < .03$) (see Appendix: Table 5).

⁴ Course level analyses are limited due to the small number of participants. Please interpret results with extreme caution and note the small sample sizes may not yield significant results even if there may be an effect (Tables 4 & 5).



Although study group participants had an overall higher average index than non-participants, non-study group participants had significantly higher index scores for three of the nine courses compared to study group participants. Study group participants did not have any significantly higher index scores at the course level (note group size will impact this analysis). Further, study group participants in two of the three courses where non-study group participants had significantly higher index scores, still had significantly higher course grades than non-participants (CIVE 260 and HES 403) (see Appendix: Table 5).

Frequency of Program Visits

When isolating the analysis to look just at program participants, frequency of visits significantly and positively impacted course grade point for both tutoring and study group programs ($B = .03, p < .01$). On average, students attended tutoring for a course 4.02 times. This was higher than the average in AY16-17 (mean = 3.87 visits) and a little lower than in AY15-16 (mean = 4.17 visits). Among the tutoring participants, 60% of students received an A or B in their course if they attended tutoring for their course 7-9 times, while only 54.9% of students who visited once received an A or B in their course (Figure 2a). A study group participant attended study group on average 3.32 times per course. Among these study group participants, 28% of participants received an A if they attended study group for their course two or three times, while only 22% of participants who went to study group once received an A (see Figure 2b). This suggests the students who attended the program more frequently received significantly higher course grades. This paralleled results of the 2016-2017 academic year for the tutoring program; however, frequency did not have a significant impact in the 2015-2016 academic year for the tutoring program.

Two-thirds of study group participants and 73% of tutoring participants first attended their course's program prior to midterms. However, among program participants, there was not a significant mean difference in course grade points between students who first attended tutoring or study group programs before midterm compared to those who first attended after midterms.

Conclusion

Overall, the impact of the TILT programs on course grade varies widely and conclusions may be more meaningful at the individual course level. The numerous limitations (e.g. small program sizes, extraneous variables impacting comparison group, programs target students who need help, etc.) with this research contribute limitations when extracting general program findings. Keeping these limitations in mind, it was concluded that study group participation had a positive impact on a student's course grade overall, but this relationship became non-significant when controlling for index. On the other hand, tutoring participation was significantly related to a lower course grade overall even after controlling for index; however, there is some evidence tutoring participation had a positive impact on course grade points among certain courses. A key finding that did emerge for both the tutoring and study group programs suggest participants will receive a higher course grade the more they attend the course program.



Student Characteristics by Tutoring Participation

Table 2. Student characteristics for tutoring participants and non-tutoring participants for the AY2017-2018

	Tutoring (# and %)						No Tutoring (%)		
	FA17		SP18		AY17-18		FA17	SP18	AY17-18
Total	1,846		1,094		2,216		10,150	8,995	13,108
Females	1055	57.2%	600	54.8%	1276	57.7%	50.2%	50.6%	50.4%
First Generation	470	25.5%	284	26.0%	559	25.2%	23.9%	24.0%	24.4%
Colorado Resident	1290	69.9%	761	69.6%	1556	70.2%	68.0%	67.6%	68.1%
STEM Major	1253	67.9%	728	66.5%	1425	64.3%	56.0%	55.0%	52.8%
Average of HS GPA	3.69		3.67		3.68		3.63	3.62	3.61
Average INDEX	115.19		115.07		114.98		115.87	115.72	115.28
Average Total Credits a Term	14.42		14.27		14.36		14.10	14.06	13.98
Average Term GPA	2.93		2.95		2.93		2.82	2.85	2.81
Average CSU GPA at end of Term	3.04		3.03		3.03		2.92	2.95	2.92
Race/Ethnicity									
Racially Minoritized	508	27.5%	340	31.1%	613	27.7%	23.0%	23.2%	22.9%
Asian	61	3.3%	53	4.8%	81	3.7%	2.9%	2.5%	2.8%
Black	60	3.3%	41	3.7%	64	2.9%	1.9%	1.9%	2.0%
Hawaiian/Pac. Islander	3	0.2%	3	0.3%	4	0.2%	0.2%	0.2%	0.2%
Hispanic/Latino	305	16.5%	184	16.8%	364	16.4%	13.5%	14.0%	13.6%
Multi-Racial	66	3.6%	50	4.6%	83	3.7%	4.0%	4.1%	3.9%
Native American	13	0.7%	9	0.8%	17	0.8%	0.5%	0.4%	0.5%
Not Racially Minoritized	1,338	72.5%	754	68.9%	1603	72.3%	77.0%	76.8%	77.1%
International	58	3.1%	41	3.7%	73	3.3%	4.7%	5.3%	5.0%
No Response	21	1.1%	14	1.3%	26	1.2%	1.0%	1.0%	1.2%
White	1259	68.2%	699	63.9%	1504	67.9%	71.2%	70.5%	70.9%
Undergraduate	1841	99.7%	1092	99.8%	2209	99.7%	99.2%	99.3%	99.0%
Freshman	484	26.2%	225	20.6%	544	24.5%	37.2%	28.4%	29.5%
Sophomore	667	36.1%	380	34.7%	750	33.8%	28.6%	30.2%	29.3%
Junior	447	24.2%	311	28.4%	562	25.4%	19.4%	23.4%	22.3%
Senior	219	11.9%	164	15.0%	323	14.6%	12.6%	15.8%	16.3%
Post Bach	3	0.2%		0.0%	3	0.1%	0.1%	0.1%	0.1%
2nd Bach	21	1.1%	12	1.1%	27	1.2%	1.3%	1.3%	1.6%
Graduate	5	0.3%	2	0.2%	7	0.3%	0.8%	0.7%	1.0%
Grad N-Deg	2	0.1%	0	0.0%	2	0.1%	0.2%	0.3%	0.3%
Masters	3	0.2%	2	0.2%	5	0.2%	0.6%	0.3%	0.6%
PHD Lvl 2	0						0.0%	0.0%	0.0%
Graduate Coop Pgm	0							0.0%	0.0%
Student Type									
New Student	388	21.0%	6	0.5%	314	14.2%	31.5%	0.8%	11.4%
Continuing Student	1288	69.8%	1037	94.8%	1726	77.9%	58.1%	93.0%	79.6%
Transfer	14	0.8%	10	0.9%	141	6.4%	1.4%	1.0%	5.6%
Readmit	145	7.9%	37	3.4%	22	1.0%	7.6%	3.3%	1.4%
Non Degree Student	11	0.6%	4	0.4%	13	0.6%	1.4%	2.0%	2.0%
College									
Agricultural Sciences	100	5.4%	58	5.3%	129	6.7%	6.9%	6.2%	6.7%
Business	72	3.9%	34	3.1%	96	6.0%	4.9%	5.1%	6.0%
Engineering	300	16.3%	165	15.1%	323	12.2%	13.6%	13.0%	12.2%
Health and Human Sciences	312	16.9%	177	16.2%	394	18.1%	16.8%	17.8%	18.1%
Intra- University	153	8.3%	103	9.4%	207	13.5%	13.5%	13.3%	13.5%
Liberal Arts	44	2.4%	22	2.0%	57	5.1%	4.2%	4.4%	5.1%
Natural Sciences	559	30.3%	344	31.4%	650	25.6%	27.4%	26.3%	25.6%
Vet. Med & Biomedical Sci	163	8.8%	93	8.5%	179	5.8%	6.5%	6.0%	5.8%
Warner-Natural Resources	143	7.7%	98	9.0%	181	7.0%	6.2%	7.8%	7.0%



Student Characteristics by Study Group Participation

Table 3. Student characteristics for study group participants and non-study group participants for AY2017-2018

	Study Group (# and %)						No Study Group (%)		
	FA17		SP18		AY17-18		FA17	SP18	AY17-18
Total	358		294		600		3,451	3,199	5,480
Females	208	58.1%	150	51.0%	330	55.0%	40.9%	40.6%	41.2%
First Generation	71	19.8%	57	19.4%	120	20.0%	21.9%	21.0%	21.7%
Colorado Resident	233	65.1%	193	65.6%	394	65.7%	68.5%	67.5%	68.0%
STEM Major	213	59.5%	188	63.9%	353	58.8%	35.1%	35.0%	34.0%
Average of HS GPA	3.76		3.72		3.73		3.59	3.56	3.56
Average INDEX	117.22		116.44		116.49		114.67	114.18	114.01
Average Credits a Term	14.62		14.44		14.54		14.28	14.19	14.21
Average of TERM GPA	3.01		3.06		3.05		2.88	2.87	2.89
Average CSU GPA at end of Term	3.11		3.09		3.11		2.98	2.96	2.97
Race/Ethnicity									
Racially Minoritized	61	17.0%	66	22.4%	117	19.5%	20.5%	21.0%	20.5%
Asian	8	2.2%	8	2.7%	15	2.5%	2.5%	2.5%	2.6%
Black	5	1.4%	4	1.4%	9	1.5%	2.0%	1.8%	1.9%
Hawaiian/Pac. Islander	0						0.1%	0.1%	0.1%
Hispanic/Latino	35	9.8%	44	15.0%	71	11.8%	11.5%	12.1%	11.8%
Multi-Racial	10	2.8%	9	3.1%	18	3.0%	4.2%	4.1%	3.9%
Native American	3	0.8%	1	0.3%	4	0.7%	0.2%	0.3%	0.3%
Not Racially Minoritized	297	83.0%	228	77.6%	483	80.5%	79.5%	79.0%	79.5%
International	20	5.6%	16	5.4%	33	5.5%	4.9%	5.5%	5.0%
No Response	7	2.0%	7	2.4%	11	1.8%	1.0%	1.5%	1.3%
White	270	75.4%	205	69.7%	439	73.2%	73.6%	72.1%	73.1%
Undergraduate	351	98.0%	291	99.0%	591	98.5%	99.2%	99.7%	99.4%
Freshman	39	10.9%	13	4.4%	51	8.5%	25.6%	24.3%	26.5%
Sophomore	101	28.2%	69	23.5%	156	26.0%	28.8%	28.4%	26.8%
Junior	121	33.8%	120	40.8%	219	36.5%	27.2%	29.4%	28.0%
Senior	84	23.5%	78	26.5%	148	24.7%	16.5%	16.6%	17.3%
Post Bach	0						0.0%	0.1%	0.1%
2nd Bach	6	1.7%	11	3.7%	17	2.8%	1.0%	1.0%	0.9%
Graduate	7	2.0%	3	1.0%	9	1.5%	0.8%	0.3%	0.6%
Grad N-Deg	3	0.8%		0.0%	3	50.0%	0.5%	0.1%	0.3%
Masters	4	1.1%	3	1.0%	6	1.0%	0.3%	0.1%	0.2%
PHD Lvl 2	0						0.0%	0.1%	0.1%
Student Type									
New Student	36	10.1%	2	0.7%	38	6.3%	17.9%	0.4%	11.4%
Continuing Student	299	83.5%	287	97.6%	534	89.0%	70.5%	93.1%	78.1%
Transfer	18	5.0%	4	1.4%	22	3.7%	8.1%	2.8%	6.4%
Readmit	1	0.3%	1	0.3%	2	0.3%	1.4%	1.0%	1.4%
Non Degree Student	4	1.1%		0.0%	4	0.7%	2.1%	2.7%	2.7%
College									
Agricultural Sciences	41	11.5%	19	6.5%	60	10.0%	11.8%	9.0%	11.2%
Business	28	7.8%	18	6.1%	46	7.7%	22.2%	21.0%	21.4%
Engineering	154	43.0%	136	46.3%	246	41.0%	17.3%	17.4%	14.5%
Health and Human Sciences	85	23.7%	91	31.0%	171	28.5%	13.9%	16.4%	16.2%
Intra- University	25	7.0%	7	2.4%	31	5.2%	17.0%	18.2%	17.9%
Liberal Arts	13	3.6%	11	3.7%	23	3.8%	9.0%	9.1%	9.3%
Natural Sciences	8	2.2%	9	3.1%	16	2.7%	5.6%	5.4%	5.7%
Vet. Med & Biomedical Sci	1	0.3%	3	1.0%	4	0.7%	0.5%	0.5%	0.6%
Warner-Natural Resources	3	0.8%		0.0%	3	0.5%	2.8%	2.8%	3.2%



Program by Whole Grade Distribution

Both tutoring and study group participants had higher success course rates (A/B/C course grades) (82.5% and 90.7% respectively) than non-program participants (75.3% and 85.8% respectively) (see Figure 1a and 1b below).

Figure 1a. Overall Course Grade by Tutoring Participation for AY17-18, All Courses⁵

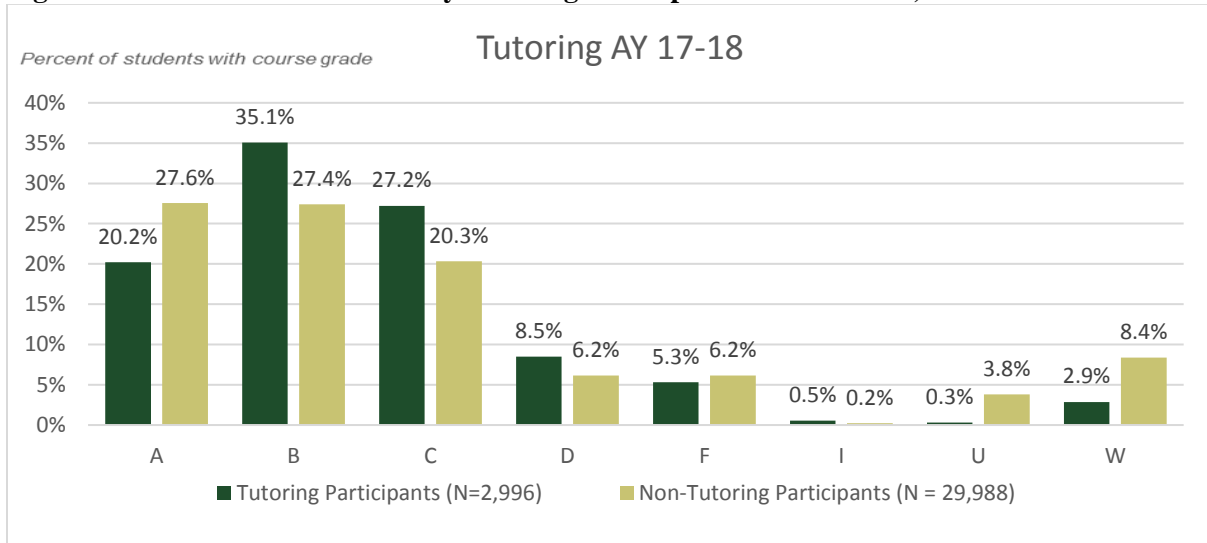
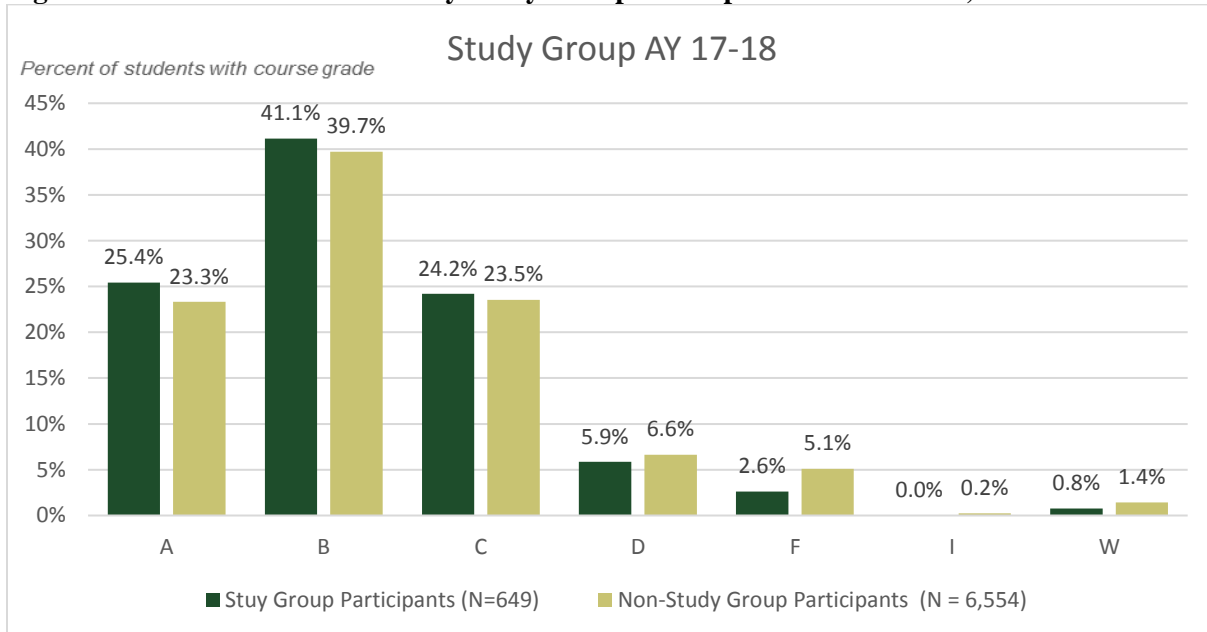


Figure 1b. Overall Course Grade by Study Group Participation for AY17-18, All Courses



⁵ Course grades were collapsed into whole grades for summary purposes. For example, course grades of B+ and B- were categorized as 'B' (Figures 1-2).



Program Frequency by Whole Grade Distribution

Figure 2a. Course grade by number of tutoring visits for AY 2017-2018

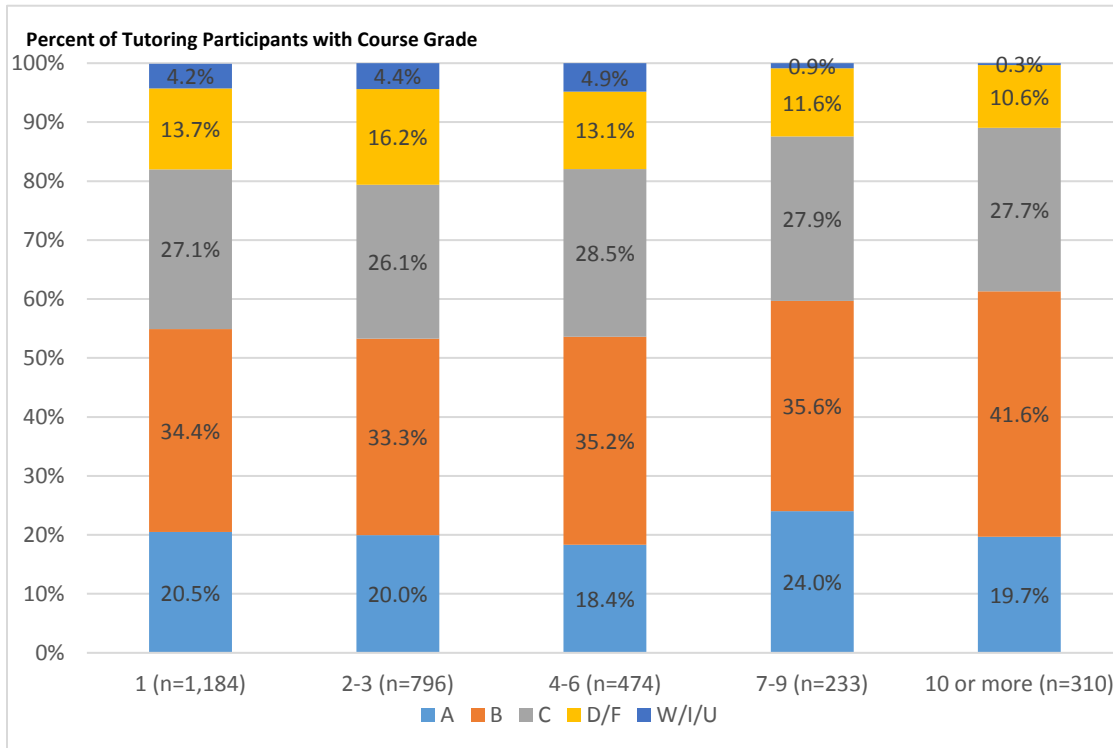
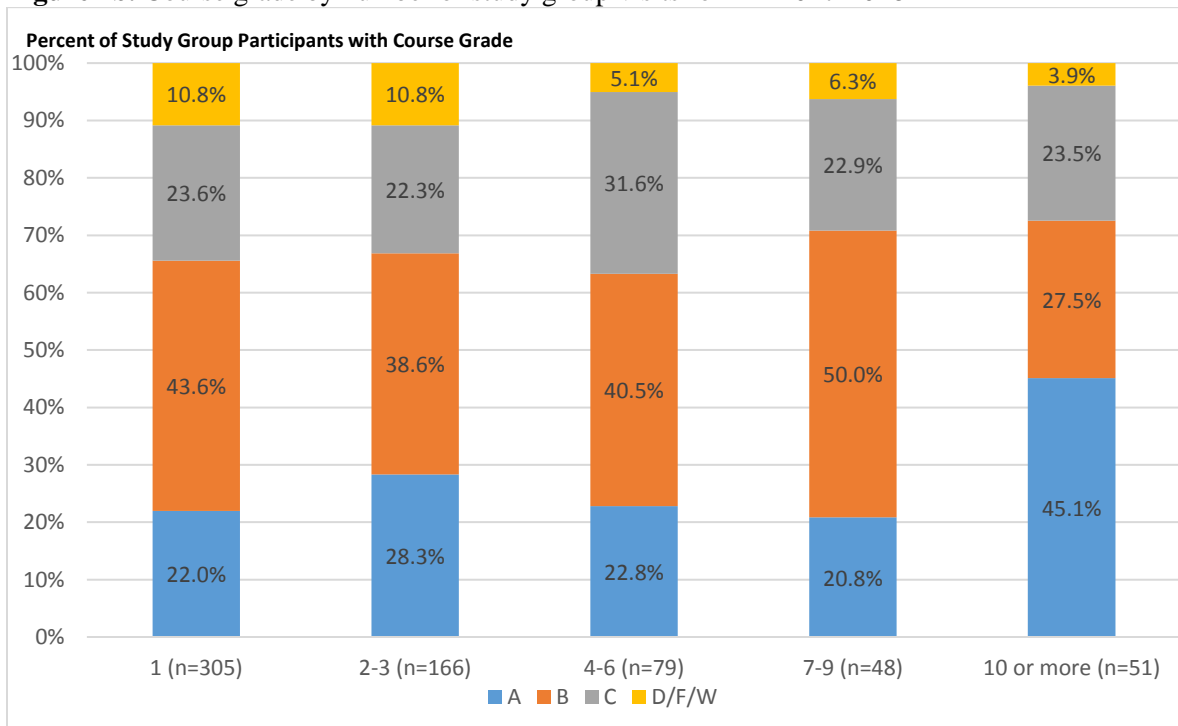


Figure 2b. Course grade by number of study group visits for AY 2017-2018



Appendix⁶

Table 4. Academic Year 2017-18: Average course grade and CCHE index across tutoring program participant status and course

	Tutoring			No Tutoring			Avg. Grade Gap (AY only)	Effect Size	
	#	Avg. Grade	Avg. Index	#	Avg. Grade	Avg. Index		d-Grade	d-Index
BMS 300	71	2.36	112.69	1298	2.25	116.55	0.12		0.27
FA17	34	2.28	116.23	635	2.25	116.94			
SP18	37	2.44	109.16	663	2.24	116.16			
BMS 301	31	2.45	114.89	366	2.61	119.17	-0.16		
FA17	30	2.47	114.89	267	2.58	117.89			
SP18	1	2.00		99	2.69	122.47			
BZ 350	68	2.49	112.56	247	2.39	119.73	0.10		0.40
FA17	27	2.64	111.90	131	2.41	118.63			
SP18	41	2.39	112.97	116	2.36	120.91			
CHEM103	8	2.75	103.83	390	2.64	109.00	0.11	NA	
FA17	7	2.86	106.40	208	2.56	110.05			
SP18	1	2.00	91.00	182	2.72	107.78			
CHEM107	47	2.78	111.32	757	2.47	113.51	0.31		
FA17	22	2.59	113.27	418	2.40	112.54			
SP18	25	2.93	110.00	339	2.56	114.62			
CHEM111	181	2.07	116.15	1823	2.36	120.77	-0.30	0.28	0.41
FA17	116	2.04	118.02	1051	2.37	122.81			
SP18	65	2.11	112.42	772	2.36	117.98			
CHEM113	193	2.24	116.34	1205	2.30	121.28	-0.07		0.42
FA17	111	2.54	115.46	527	2.35	117.82			
SP18	82	1.83	117.51	678	2.27	123.85			
CHEM245	114	2.39	114.82	595	2.48	117.92	-0.09		
FA17	68	2.37	114.74	270	2.46	118.40			
SP18	46	2.43	114.94	325	2.49	117.51			
CHEM341	140	2.80	121.82	499	2.64	122.13	0.15		
FA17	111	2.57	122.92	341	2.44	122.83			
SP18	29	3.63	117.85	158	3.05	120.74			
CHEM343	110	2.79	121.86	467	2.40	121.50	0.40	0.38	
FA17	44	2.75	118.59	140	2.32	117.94			
SP18	66	2.82	123.96	327	2.43	122.94			
LIFE102	248	2.48	113.45	2096	2.61	115.52	-0.13		0.17
FA17	208	2.42	114.13	1414	2.45	116.09			
SP18	40	2.81	109.25	682	2.93	114.28			
LIFE103	30	2.27	112.16	724	2.38	118.24	-0.11		0.45
FA17	8	2.75	108.71	229	2.09	117.13			
SP18	22	2.09	113.50	495	2.51	118.70			

⁶ Cells in red indicate a significantly higher mean course grade or mean index score than the comparing group ($p < .05$).

Due to cell sizes of tutoring participants, analyses on academic year only were conducted. Cells with less than 11 students were excluded from analysis.

Grade Point Conversion: A+/A = 4.0, A- = 3.67, B+ = 3.33, B = 3.0, B- = 2.67, C+ = 2.33, C = 2, C- = 1.67, D = 1.0, F or U = 0. Students who received a final course grade of 'W', 'NG', or 'I' were excluded for the course mean analysis.



Table 4 cont. Average course grade and CCHE index across tutoring program participant status and course

	Tutoring			No Tutoring			Avg. Grade Gap (AY only)	Effect Size	
	#	Avg. Grade	Avg. Index	#	Avg. Grade	Avg. Index		d-Grade	d-Index
MATH117	40	2.94	106.22	1923	3.18	109.76			
FA17	31	2.85	106.07	1249	3.20	110.38			
SP18	9	3.29	107.00	674	3.12	108.50	-0.24		
MATH118	27	2.88	105.71	2689	3.21	110.69			
FA17	19	2.94	104.39	1725	3.26	111.41			
SP18	8	2.75	109.67	964	3.13	109.31	-0.34		0.44
MATH124	16	3.21	103.94	2106	3.35	112.58			
FA17	9	3.38	106.67	1105	3.39	112.85			
SP18	7	3.00	100.43	1001	3.32	112.27	-0.14		0.77
MATH125	22	2.94	108.00	2114	3.19	112.19			
FA17	11	3.00	111.60	1114	3.18	112.33			
SP18	11	2.86	102.86	1000	3.20	112.03	-0.25		
MATH126	10	3.00	104.43	887	3.46	113.25			
FA17	3	4.00	106.00	536	3.45	113.64			
SP18	7	2.57	104.17	351	3.48	112.57	-0.46	NA	
MATH141	140	2.93	108.82	1033	2.89	110.73			
FA17	90	3.06	109.58	500	2.94	110.69			
SP18	50	2.70	107.53	533	2.84	110.76	0.04		
MATH155	195	2.72	116.24	540	2.44	116.99			
FA17	108	2.60	115.25	276	2.22	115.43			
SP18	87	2.86	117.45	264	2.65	118.57	0.28	0.23	
MATH160	76	1.79	113.95	754	2.22	118.13			
FA17	37	1.67	115.39	452	2.33	119.82			
SP18	39	1.89	112.55	302	2.07	115.29	-0.44	0.36	0.37
MATH161	114	2.16	117.79	696	2.13	121.92			
FA17	74	2.23	118.20	345	2.18	121.83			
SP18	40	2.03	117.00	351	2.09	122.00	0.02		0.33
MATH255	11	3.30	121.22	44	3.24	120.00			
FA17	7	3.62	128.00	21	3.19	116.44			
SP18	4	2.75	112.75	23	3.28	123.35	0.07		
MATH261	131	2.95	121.32	620	2.90	124.06			
FA17	87	2.81	122.28	352	2.82	124.73			
SP18	44	3.25	119.19	268	3.01	123.07	0.05		
MATH340	124	2.26	122.43	573	2.10	123.69			
FA17	63	2.10	120.54	255	1.99	122.91			
SP18	61	2.44	124.11	318	2.19	124.25	0.16		
MATH369	37	2.59	120.28	333	2.82	122.53			
FA17	23	2.73	121.45	146	2.76	122.06			
SP18	14	2.38	117.67	187	2.86	122.91	-0.23		



Table 4 cont. Average course grade and CCHE index across tutoring program participant status and course

	Tutoring			No Tutoring			Avg. Grade Gap (AY only)	Effect Size	
	#	Avg. Grade	Avg. Index	#	Avg. Grade	Avg. Index		d-Grade	d-Index
PH 110-SP18 only	4	2.83	112.33	108	2.03	113.22	0.80	NA	
PH 121	164	3.05	113.28	655	3.04	117.06	0.02		0.24
FA17	136	3.09	113.58	362	3.10	119.77			
SP18	28	2.89	111.50	293	2.96	113.50			
PH 122	53	3.12	116.72	490	3.05	120.62	0.07		
FA17	15	2.95	118.60	102	2.96	121.58			
SP18	38	3.18	115.84	388	3.08	120.38			
PH 141	109	2.79	119.48	766	2.70	121.86	0.08		
FA17	62	2.84	117.22	334	2.65	120.17			
SP18	47	2.72	122.46	432	2.74	123.05			
PH 142	85	2.58	121.67	465	2.70	124.16	-0.12		
FA17	57	2.30	121.86	230	2.29	123.77			
SP18	28	3.13	121.21	235	3.09	124.59			
STAT201	99	2.30	107.65	679	2.56	111.09	-0.26	0.24	0.28
FA17	39	2.03	109.51	342	2.61	111.27			
SP18	60	2.47	106.33	337	2.51	110.90			
STAT204	86	2.44	108.87	674	2.73	111.76	-0.30	0.30	
FA17	70	2.35	107.08	339	2.77	111.82			
SP18	16	2.82	116.93	335	2.70	111.69			
STAT301	144	2.91	112.68	1323	2.77	115.81	0.14		0.23
FA17	97	2.91	112.06	590	2.78	115.75			
SP18	47	2.92	114.00	733	2.77	115.86			
STAT305-FA17 only	6	0.80	108.33	48	2.85	122.84	-2.05	NA	
STAT307	62	3.07	117.24	359	3.11	121.38	-0.04		
FA17	42	3.06	117.00	171	3.09	119.91			
SP18	20	3.07	117.75	188	3.12	122.73			
STAT312-FA17 only	13	3.00	110.00	80	2.97	116.20	0.03		
STAT315	10	3.19	120.20	233	3.01	122.26	0.18	NA	
FA17	8	3.19	118.63	122	3.06	122.07			
SP18	2	3.17	126.50	111	2.95	122.48			
STAT341-FA17 only	8	2.63	110.71	69	2.49	121.44	0.14	NA	



Table 5. Academic Year 2017-18: Average course grade and CCHE index across study group participant status and course

Table 5. Academic Year 2017-18: Average course grade and CCHE index across study group participant status and course.

	Study Group			Non Study Group			Avg. Grade Gap (AY only) (SG-NonSG)	Effect Size (AY only)	
	#	Avg. Grade	Avg. Index	#	Avg. Grade	Avg. Index		d-Grade	d-Index
ANEQ 305	34	3.12	115.24	88	2.12	114.07			
FA17	16	2.87	117.17	62	2.13	115.11	1.00	0.82	
SP18	18	3.33	113.46	26	2.09	112.04			
CIVE 260	120	2.79	122.43	261	2.49	125.84			
FA17	77	2.70	123.74	199	2.49	126.33	0.30	0.30	0.36
SP18	43	2.93	119.50	62	2.46	124.11			
CIVE 261	84	2.75	122.83	247	2.54	123.83			
FA17	29	2.76	117.67	74	2.56	119.63	0.21		
SP18	55	2.74	124.85	173	2.53	125.59			
CIVE 300	58	2.27	123.48	108	1.81	122.09			
FA17	28	2.32	124.00	53	1.82	125.42	0.46	0.34	
SP18	30	2.22	122.95	55	1.81	117.55			
CIVE 360	30	3.11	121.74	373	2.71	122.79			
FA17	22	3.18	122.58	178	2.92	122.47	0.40	0.42	
SP18	8	2.92	119.75	195	2.52	123.08			
ECON 202, AREC 202	88	3.01	113.51	2715	2.68	112.69			
FA17	70	2.99	114.11	1488	2.66	113.50	0.32	0.35	
SP18	18	3.09	111.07	1227	2.71	111.71			
ECON 204	10	2.80	109.70	1341	2.80	113.50			
FA17	1	3.00	106.00	638	2.83	112.77	0.00		
SP18	9	2.78	110.11	703	2.77	114.17			
FIN 300, FIN 305	61	2.93	110.58	1161	2.90	111.93			
FA17	37	2.62	112.90	596	2.84	111.96	0.03		
SP18	24	3.40	107.05	565	2.96	111.89			
FSHN 350	58	2.86	112.03	145	3.05	118.10			
FA17	29	2.90	113.15	81	3.15	115.91	-0.19		0.41
SP18	29	2.82	110.71	64	2.92	120.94			
FSHN 470	23	3.04	117.08	45	2.75	110.06			
FA17	7	3.00	117.67	8	3.13	107.00	0.29		
SP18	16	3.06	116.90	37	2.67	111.00			
HES 403	86	2.54	109.92	166	2.14	114.26			
FA17	42	2.51	109.18	74	2.07	115.20	0.40	0.41	0.30
SP18	44	2.57	110.74	92	2.19	113.41			