Academic Support Centers Assessment Report
Fall 2017
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1 INTRODUCTION

Florida SouthWestern's Academic Support Center (ASC) employs a series of assessments in order to support and strengthen the capabilities of each center (writing, math, oral communications, and peer tutoring) in providing assistance in student achievement of the General Education competencies. Student learning centers have been shown to successfully improve student learning outcomes across the curriculum (Hendriksen et al., 2005) as well as increase college preparedness (Perin, 2004). Therefore, data informed improvement has potential for a compounded effect across multiple disciplines college-wide as well as within the learning centers. Information gathered from assessment is intended to be shared with ASC leadership and staff as well as, in certain cases, among faculty and students. This study is in partial fulfillment of the assessment goals established in fall 2017 which is to include the entire 2017-18 academic year and is outlined in each section below.

For additional detail on further analysis not provided in this report, please contact Dr. Joseph F. van Gaalen, Director of Academic Assessment, Assessment & Effectiveness (jfvangaalen@fsw.edu; x16965).

2 WRITING CENTER

In fall 2017, in order to support student achievement of the General Education competencies, the department established a goal of ensuring that participation in the Academic Support Centers (ASCs) is correlated with student success and retention. During the 2017-18 academic year, students with similar entering grade point averages (G.P.A.) who receive support in the ASCs for writing and are enrolled in ENC 1101 *Composition I* or ENC 1102 *Composition II* courses and who have two or more accrued hours in writing consultation visits will obtain satisfactory grades (A, B, or C) at a rate 10% higher than semester students who do not receive support via the Writing Center consultations. This objective will herein be referred to as Outcome #1.

2.1 DESCRIPTIVE STATISTICS & LEARNING OBJECTIVES
The ASC leadership established measure of success for Outcome #1, student success rate in ENC 1101 or ENC 1102 increases by 10% given two or more hours of ASC writing consultation time, was met for all five student cohorts (up from spring 2017 and the highest in the history of the study dating back to fall 2015). Success rates for those receiving greater than two hours of consultation is 32% higher for those with a GPA < 2.0, 25% higher for 2.0-2.4 GPA, 11% higher for 2.5-2.9 GPA, 10% higher for 3.0-3.4 GPA, and 11% higher for greater than or equal to 3.5 GPA (Table 1). A graphical representation of this data is shown in Figure 1. Note that not all records include a GPA in which to include in analysis.

	n ≥ 2hr	n < 2hr
Goal: Success Rate 10% higher for n ≥ 2hr		
GPA < 2.0	100% (n=2)	68% (n=22)
GPA 2.0 – 2.4	82% (n=17)	57% (n=463)
GPA 2.5 – 2.9	78% (n=49)	67% (n=1122)
GPA 3.0 – 3.4	90% (n=58)	80% (n=1077)
GPA ≥ 3.5	100% (n=32)	89% (n=389)

Table 1. Success rates in ENC 1101 or ENC 1102 for those receiving greater than two hours consultation in the Writing Center and those receiving less than two hours consultation based on GPA upon entering college.
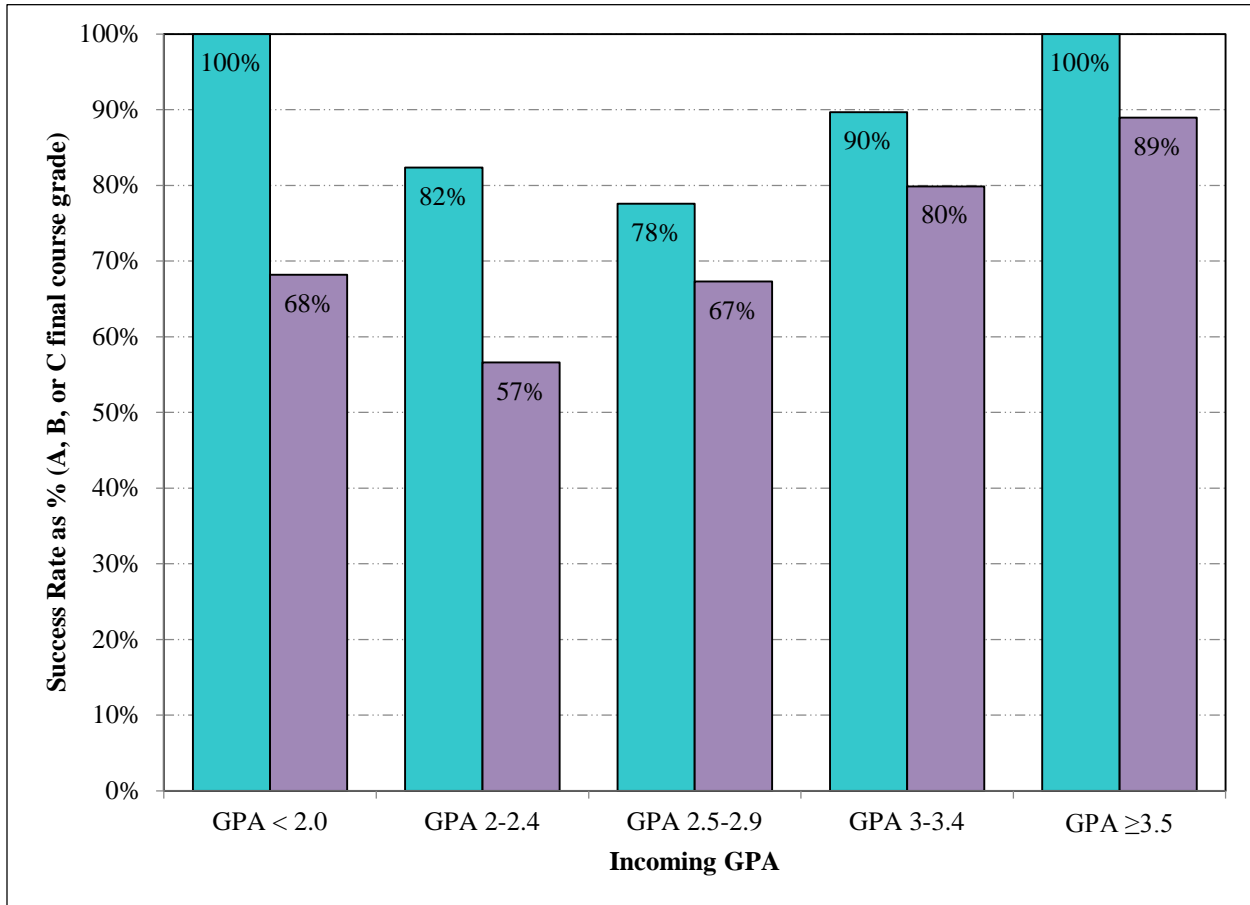

Figure 1. Success rates in ENC 1101 or ENC 1102 for those receiving greater than two hours consultation in the Writing Center (aqua) and those receiving less than two hours consultation (purple) based on GPA upon entering college.

A Cochran-Mantel-Haenszel (CMH) test was conducted on the success rate data of those who accrued more than two hours of consultation time in the Writing Center and those that did not to determine statistical significance of the results according to standard methods (McDonald, 2009). In other words, the CMH test compares collectively, inclusive of GPA score bins, whether the two cohorts (≥ 2hr consultation or < 2hr consultation) are statistically significantly different and is not an analysis of individual GPA cohorts. Based on the results of the CMH test for repeated tests of independence, students with greater than two hours of consultation does exhibit a statistically significantly higher success rate than those who accrued fewer than two hours of consultation time (χ^2_{MH}=12.127, 1 d.f., P=0.0005). The null hypothesis that the relative proportions of success to failure between students accruing more or less than two hours of consultation time are independent of each other is rejected.

2.2 EXPLORATORY ANALYSIS & LONGITUDINAL STUDIES

A comparison of success rate based on time spent in the Writing Center was conducted in order to explore and quantify the value of time spent in writing consultation. The results of the analysis are shown in Figure 2. For students spending two or more hours in the Writing Center, the time minimum used in the definition of Outcome #1, success rate for ENC 1101 or 1102 courses in fall 2017 students increases by 10% over those that did not spend time in the Writing Center (up from 9% in spring 2017). These results are either on par with or exceed that of comparative research (Cooper, 2010; Hendriksen et al., 2005).

As student demographics and department goals may shift through time, it is important to compare achievement through time along with changes. Figure 3 depicts a comparison of success rate based on time spent in the Writing Center beginning fall 2014 through fall 2017. Both demographics of students and student count vary by semester so it may be more reasonable to compare like semesters (Fall vs. Fall, Spring vs. Spring). In all cases success rate increases with increased time spent in the Writing Center with the exception of spring 2017, in which success rate appears to plateau. When comparing like terms, fall 2014, 2015, 2016, and 2017, increases are exhibited in all ranges (from 0 min to 1-119 min, and 1-119 min to ≥ 120 min) with the largest occurring in fall 2016, at 12% from 0 min to ≥ 120 min.
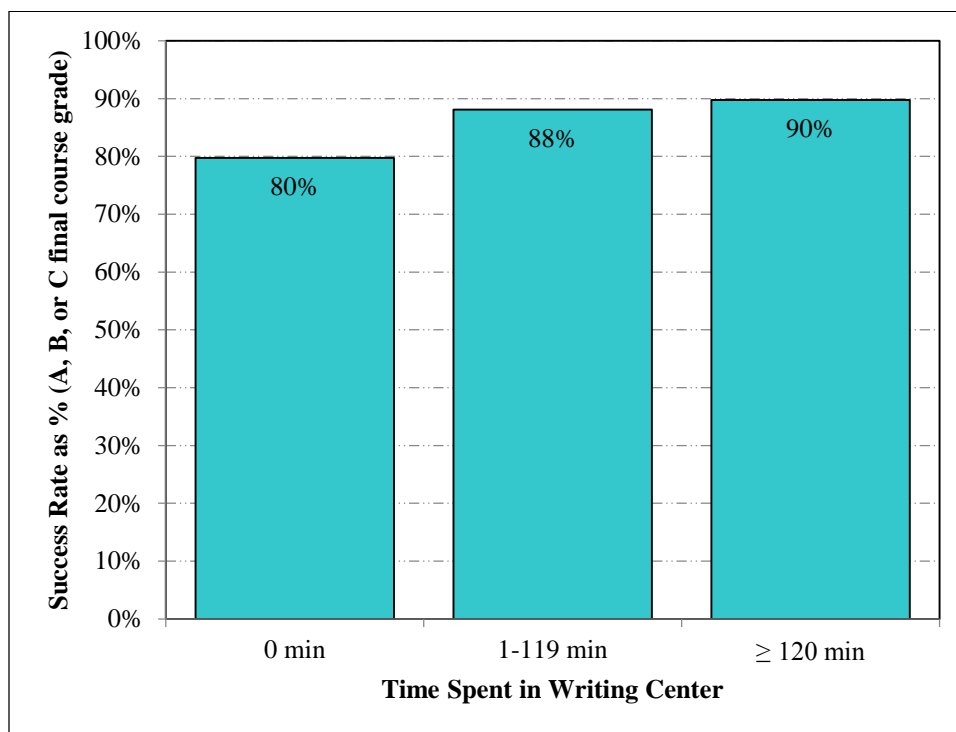

Figure 2. Success rates in ENC 1101 or ENC 1102 based on time spent in the Writing Center.
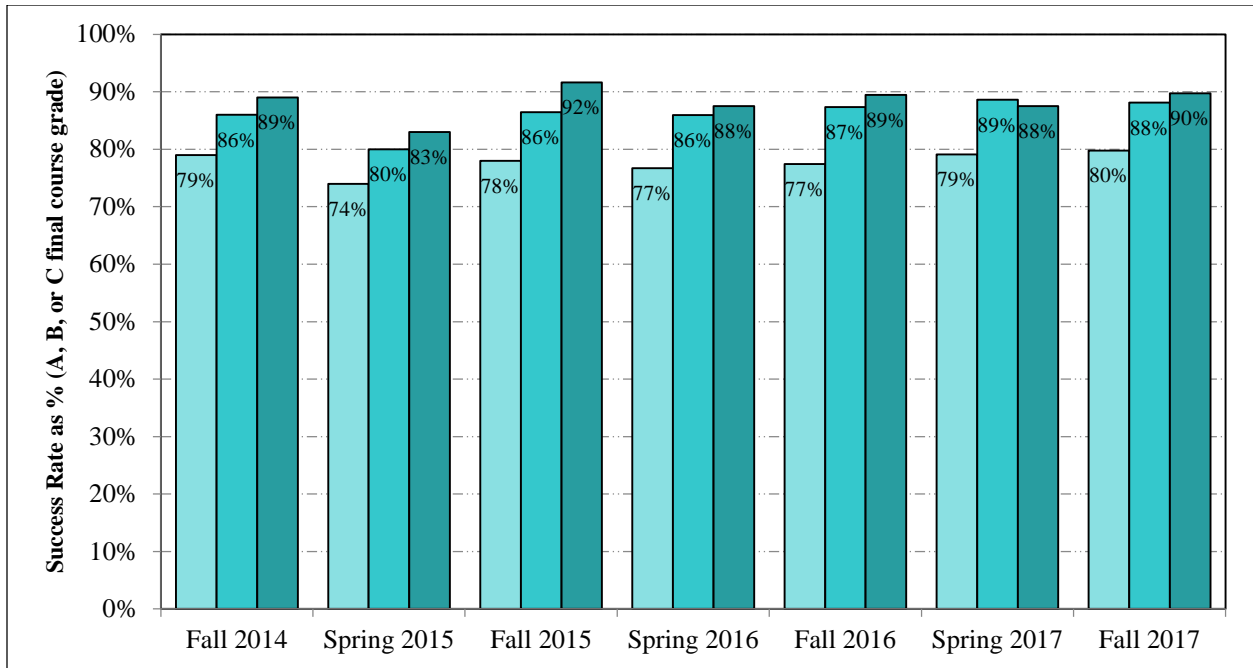
Figure 3. Success rates in ENC 1101 or ENC 1102 based on time spent in the Writing Center for fall 2014 through fall 2017. Light aqua denotes 0 minutes spent in the center, dark aqua denotes 1-119 minutes spent, and the darkest aqua denotes 120 or more minutes spent.

The results of the analysis shown in Figure 3 above highlight the improvement in success rate with time spent in the center. To further investigate the details of this matter, success rate by time spent is broken down further in Figure 4 below. The data exhibits an immediate jump in success rate from 0 minutes spent at the center to under one hour spent (80% to 90%). With the exception of the 8-9 hour bin, success rates remain in the mid-to-upper 80% range or higher.
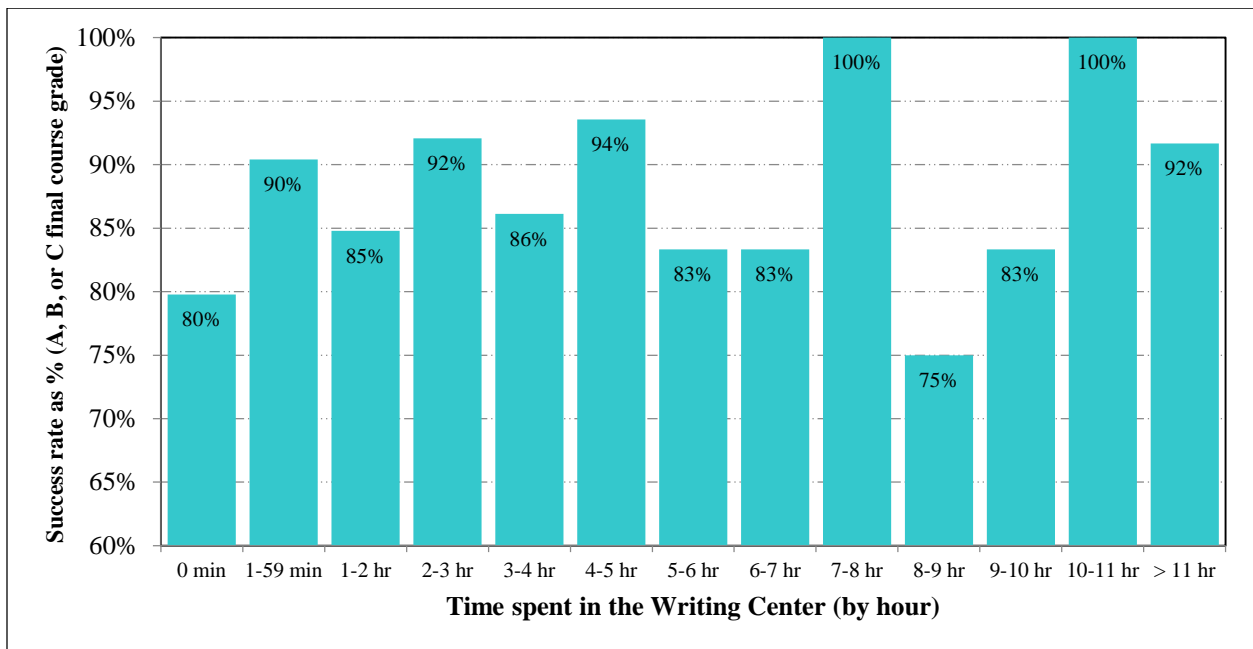

Figure 4. ENC 1101/1102 success rate based on time spent in the Writing Center per hour (up to 11+).

One area often looked at in course-level assessment is that of achievement or success rate based on enrollment type in order to add depth to the causes of the distribution of the artifacts. Figure 5 describes success rate based on time spent in the Writing Center as a function of status as dual enrollment or traditional student. Both dual enrollment students and traditional students exhibit increases in success rates with increased time spent in the Writing Center although in the case of dual enrollment, improvement is limited (success rates without time in the Writing Center are already at 95%). The dual enrollment cohort exhibits improvement from 4-5% for time spent in the Writing Center. The traditional cohort exhibits improvement of 18% for time spent in the Writing Center.
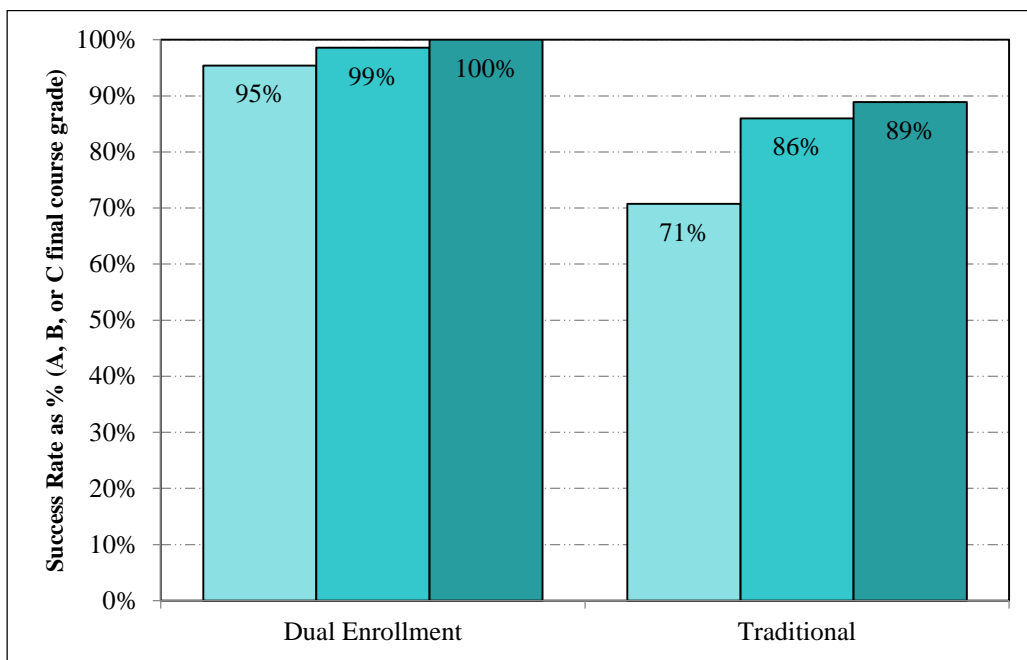

Figure 5. Comparison of ENC 1101/1102 success rates by time spent in the Writing Center disaggregated by student type. Light aqua denotes 0 minutes spent in the center, dark aqua denotes 1-119 minutes spent, and the darkest aqua denotes 120 or more minutes spent.

3   MATH CENTER

In fall 2017, in order to support student achievement of the General Education competencies, the department continued a goal of ensuring that participation in the ASCs is correlated with student success and retention. During the 2017-18 academic year, students with similar entering grade point averages (G.P.A.) who receive support in the ASCs for mathematics and are enroll in MAT 0057 *Mathematics for College Success*, MAT 1033 *Intermediate Algebra*, MAT 1100 *Mathematical Literacy for College Students*, and MAC 1105 *College Algebra* courses and who have two or more accrued hours in mathematics tutoring visits will obtain satisfactory grades (A, B, or C) at a rate 10% higher than students who do not receive support via the Math Center. This objective is herein referred to as Outcome #2.

3.1   DESCRIPTIVE STATISTICS & LEARNING OBJECTIVES

The ASC leadership established measure of success for Outcome #2, student success rate in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 increases by 10% given two or more hours of ASC math consultation

time, was met in four of five cases (the same as spring 2017). Success rates for those receiving greater than two hours of consultation is 71% high for those with a GPA < 2.0, 28% higher for 2.0-2.4 GPA, 26% higher for 2.5-2.9 GPA, 10% higher for 3.0-3.4 GPA, and 2% higher for greater than or equal to 3.5 GPA (Table 2). A graphical representation of this data is shown in Figure 6. Note that not all records include a GPA in which to include in analysis.

	$n \geq 2hr$	$n < 2hr$
Success Rate 10% higher for $n \geq 2hr$		
GPA < 2.0	86% (n=7)	15% (n=20)
GPA 2.0 – 2.4	68% (n=47)	40% (n=316)
GPA 2.5 – 2.9	76% (n=95)	50% (n=745)
GPA 3.0 – 3.4	78% (n=101)	68% (n=786)
GPA ≥ 3.5	85% (n=33)	83% (n=295)

Table 2. Success rates in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 for those receiving greater than two hours consultation in the Math Center and those receiving less than two hours consultation based on GPA upon entering college.

A Cochran-Mantel-Haenszel (CMH) test was conducted on the success rate data of those who accrued more than two hours of consultation time in the Math Center and those that did not to determine statistical significance of the results according to standard methods (McDonald, 2009). In other words, the CMH test compares collectively, inclusive of GPA score bins, whether the two cohorts (≥ 2hr consultation or ≤ 2hr consultation) are statistically significantly different and is not an analysis of individual GPA cohorts. Based on the results of the CMH test for repeated tests of independence, students with greater than two hours of consultation have a statistically significantly higher success rate than those who accrued fewer than two hours of consultation time (χ^2_{MH}=37.913, 1 d.f., P=7.40x10^{-10}). The null hypothesis that the relative proportions of success to failure between students accruing more or less than two hours of consultation time are independent of each other is rejected.
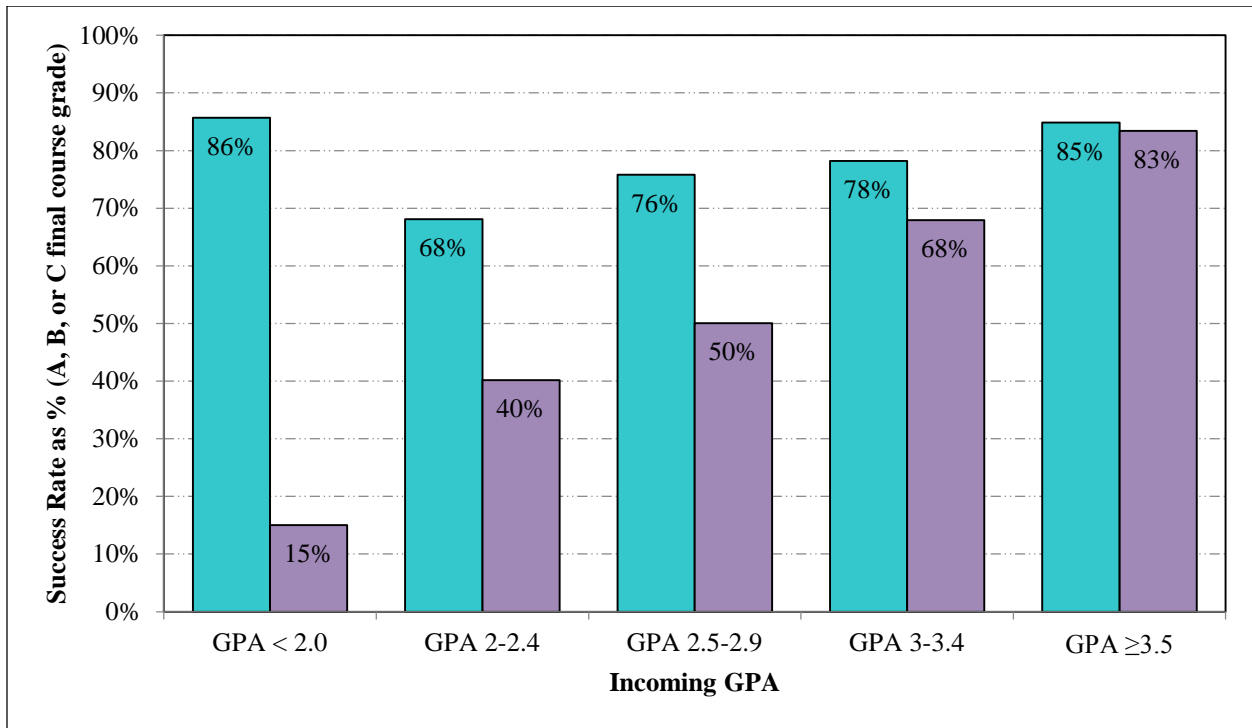

Figure 6. Success rates in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 for those receiving greater than two hours consultation in the Math Center (aqua) and those receiving less than two hours consultation (purple) based on GPA upon entering college.

3.2 EXPLORATORY ANALYSIS & LONGITUDINAL STUDIES

A comparison of success rate based on time spent in the Math Center was conducted in order to explore and quantify the value of time spent in math consultation. The results of the analysis are shown in Figure 7. For students spending two or more hours in the Math Center, the time minimum used in the definition of Outcome #2, success rate is approximately 12% higher in MAT 0057, MAT 1033, MAT 1100, or MAC 1105, down from 16% in spring 2017.
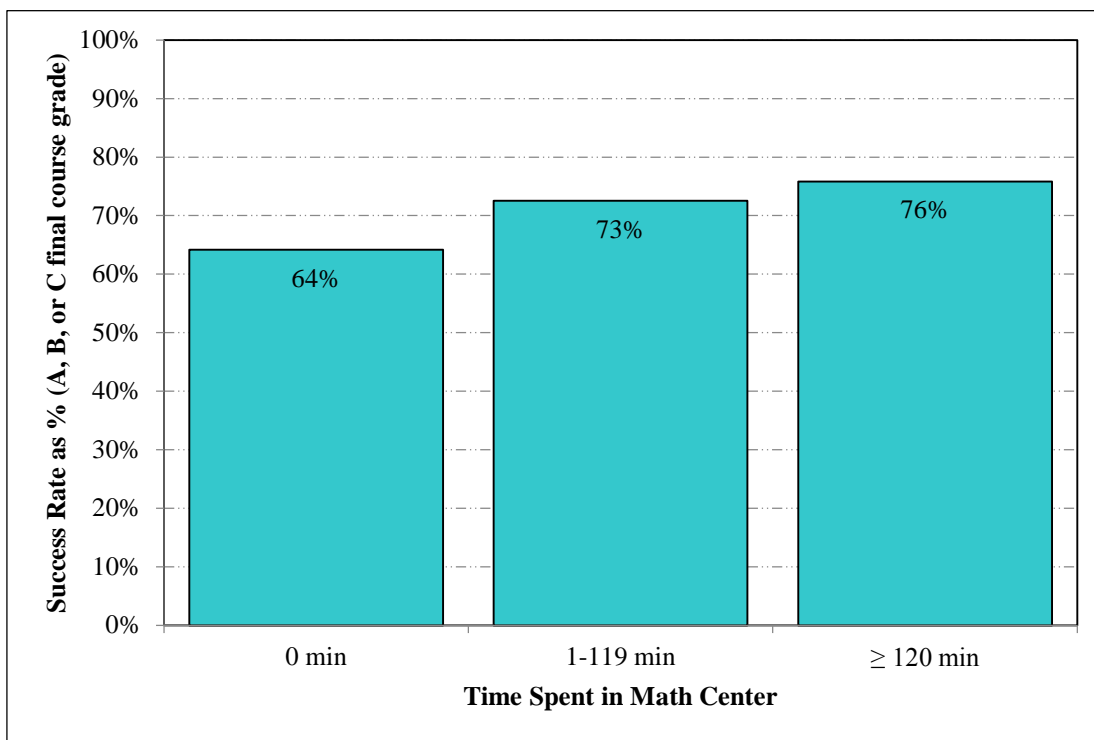

Figure 7. Success rates in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 based on time spent in the Math Center.

As student demographics and department goals may shift through time, it is important to compare achievement through time along with changes. Figure 8 depicts a comparison of success rate based on time spent in the Math Center beginning fall 2014 through fall 2017. Both the demographics of students and student count vary by semester so it may be more reasonable to compare like semesters (Fall vs. Fall, Spring vs. Spring). In five of seven terms since fall 2014, success rate consistently increases with increased time spent in the Math Center. In the remaining terms (fall 2014 and fall 2015), success rate peaks for those spending 1-119 min. at the center.
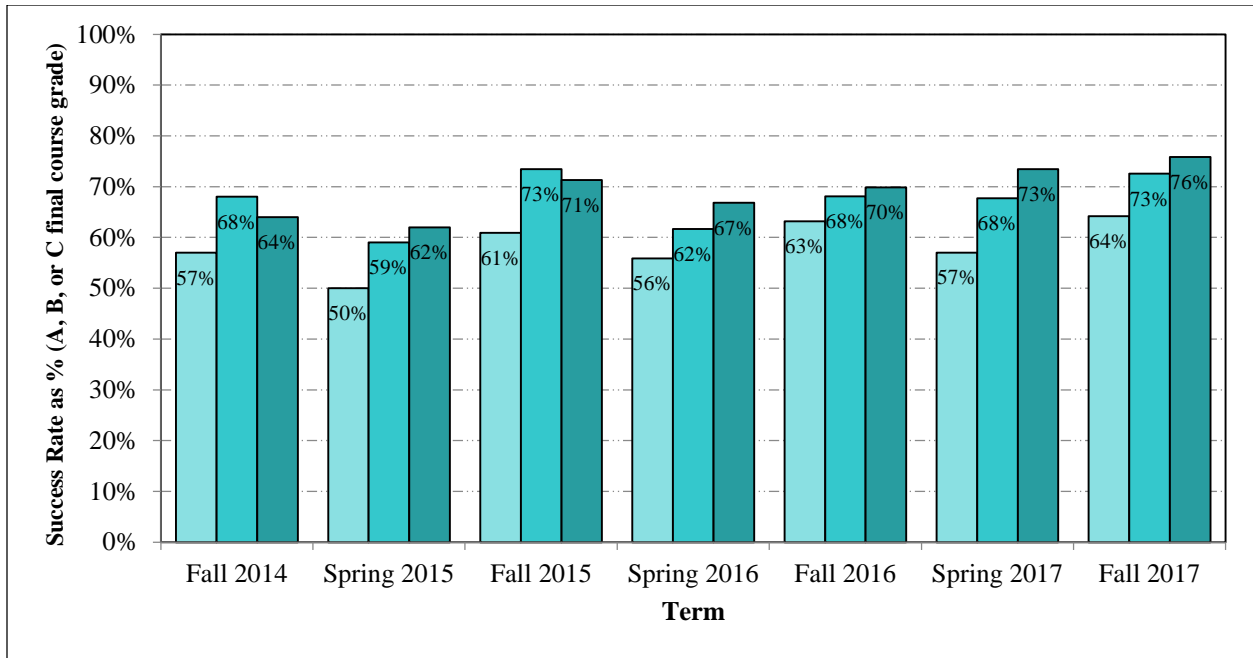
Figure 8. Success rates in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 based on time spent in the Math Center for fall 2014 through fall 2017. Light aqua denotes 0 minutes spent in the center, dark aqua denotes 1-119 minutes spent, and the darkest aqua denotes 120 or more minutes spent.

The results of the analysis shown in Figure 8 above highlight the improvement in success rate with time spent in the center. To further investigate the details of this matter, success rate by time spent is broken down further in Figure 9 below. Like the ENC 1101/1102 Writing Center study, the data exhibit an immediate increase. The student success rate without visiting the Math Center is 64%. Success rates are consistently above 65% for all but one case (5-6 hr).
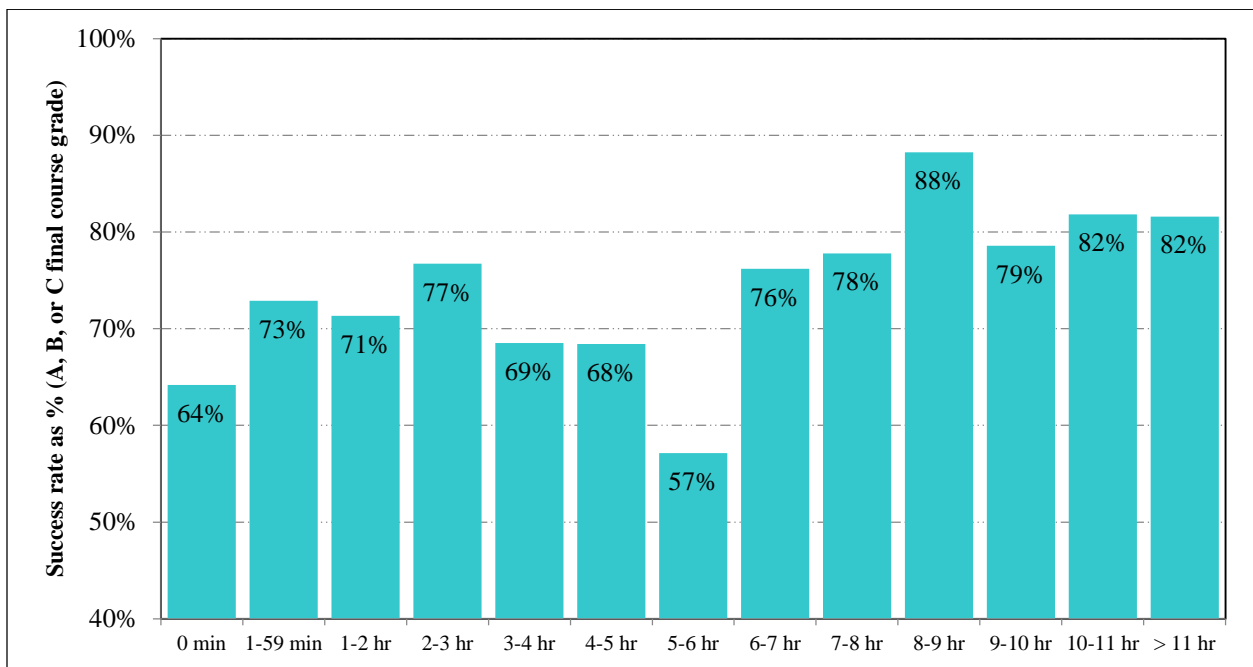

Figure 9. MAT 0057 / 1033 / 1100 / MAC 1105 success rate based on time spent in the Math Center per hour (up to 11+).

One area often looked at in course-level assessment is that of achievement or success rate based on enrollment type. This is done in order to add depth to the causes of the distribution of the artifacts. Figure 10 describes success rate based on time spent in the Math Center as a function of status as dual enrollment or traditional student.

Both dual enrollment students and traditional students exhibit increases in success rates with increased time spent in the Math Center, however, dual enrollment students peak at 1-119 minutes (95%). Traditional students exhibit a consistently increasing success rate with time spent in the Math Center (57% at 0 minutes, 69% at 1-119 minutes, and 75% at ≥ 120 minutes). Like the dual enrollment cohort, the Math Center studies have historically shown drop-offs in overall success rates for those spending ≥ 120 minutes, occurring twice in the last seven semesters. This drop-off appears to be related in some way to student type.
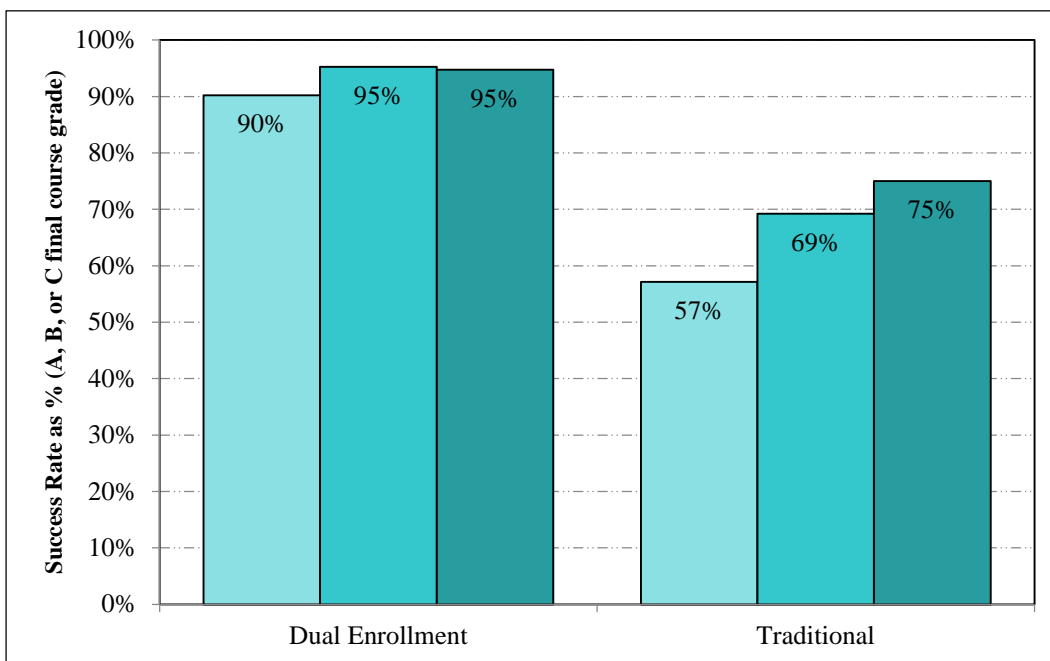

Figure 10. Comparison of MAT 0057, MAT 1033, MAT 1100, and MAC 1105 success rates by time spent in the Math Center disaggregated by student type. Light teal denotes 0 minutes spent in the center, dark teal denotes 1-119 minutes spent, and the darkest teal denotes 120 or more minutes spent.

4   ORAL COMMUNICATIONS CENTER

In fall 2017, in order to support student achievement of the General Education competencies, the department included in the study a review of similar correlated elements for the Oral Communications Center as that focused on in the Writing and Math Centers.

4.1   DESCRIPTIVE STATISTICS & LEARNING OBJECTIVES

Success rates comparisons based on GPA yield little for interpretation due to small sample size (n=12 for those spending two or more hours at the center split across five cohorts based on GPA) and so no analysis was completed.

4.2 EXPLORATORY ANALYSIS & LONGITUDINAL STUDIES

A comparison of success rate based on time spent in the Oral Communications Center was conducted in order to explore and quantify the value of time spent in oral communication consultation. The results of the analysis are shown in Figure 11. For students spending two or more hours in the Oral Communications Center (n=12), the time minimum used in the definition of Outcome #1 & #2 above, success rate is approximately 14% higher in SPC 1017 and SPC 2608 than those spending no time at the center.
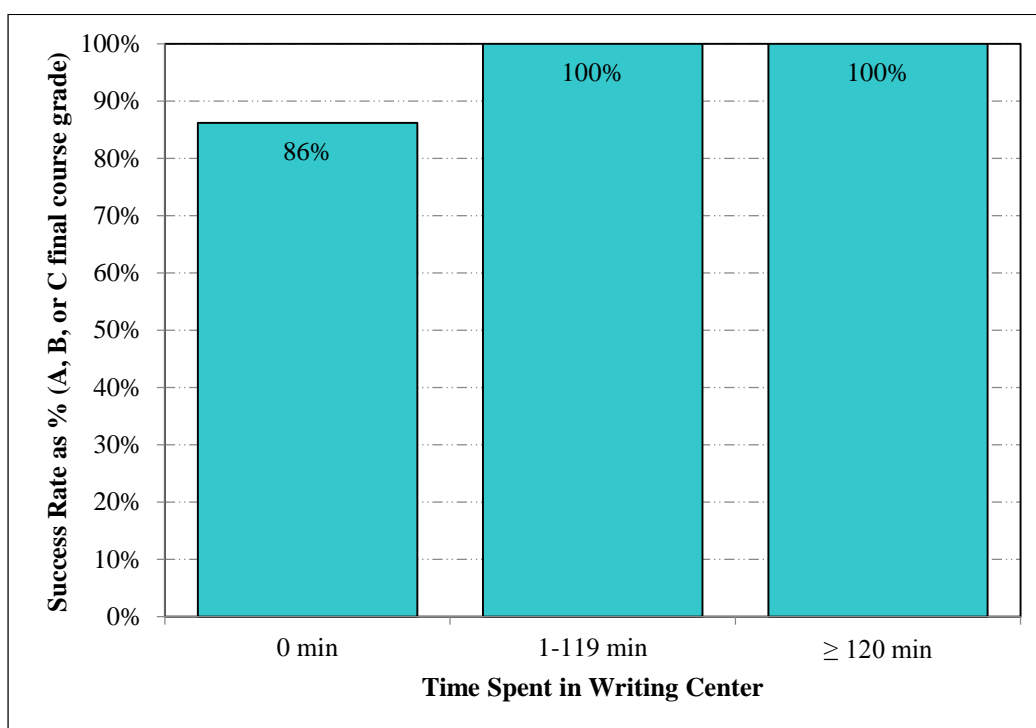

Figure 11. Success rates in SPC 1017 and SPC 2608 based on time spent in the Oral Communications Center. 0 min: n=1344, 1-119 min: n=36, ≥ 120 min: n=12.

5 PEER TUTORING CENTER

In fall 2017, in order to support student achievement of the General Education competencies, the department continued a goal of ensuring that participation in the Academic Support Centers is correlated with student success and retention. During the 2017-18 academic year, students with similar entering grade point averages (G.P.A.) who receive peer tutoring support in the ASCs for three or more scheduled appointments in MAT 1033, MAC 1105, BIO 1010, and CHEM 2025 will obtain satisfactory grades (A, B, or C) at a rate of 10% higher than semester students who do not receive support. This objective is herein referred to as Outcome #3.

5.1 DESCRIPTIVE STATISTICS & LEARNING OBJECTIVES

The ASC leadership established measure of success for Outcome #3, student success rate in MAT 1033, MAC 1105, BIO 1010, and CHEM 2025 will increases by 10% given three or more scheduled appointments, was met in two of four cases (the remaining one didn't have samples). Also, sample data

for the available areas was minimal as files with GPA limits sample size. There were no students with a recorded incoming GPA below 2.0 that had scheduled three or more peer tutoring appointments with which to compare. Success rates comparisons interpretation is limited. However, results are shown in Table 3 and Figure 12.

	n ≥ 3 appts	n < 3 appts
Success Rate 10% higher for n ≥ 3 appointments		
GPA < 2.0	No data	25% (n=12)
GPA 2.0 – 2.4	0% (n=1)	41% (n=157)
GPA 2.5 – 2.9	50% (n=4)	54% (n=431)
GPA 3.0 – 3.4	71% (n=7)	68% (n=596)
GPA ≥ 3.5	100% (n=6)	85% (n=281)

Table 3. Success rates in MAT 1033, MAC 1105, BIO 1010 or CHEM 2025 for those scheduling 3 or more peer tutoring appointments and those scheduling less than 3 based on GPA upon entering college.
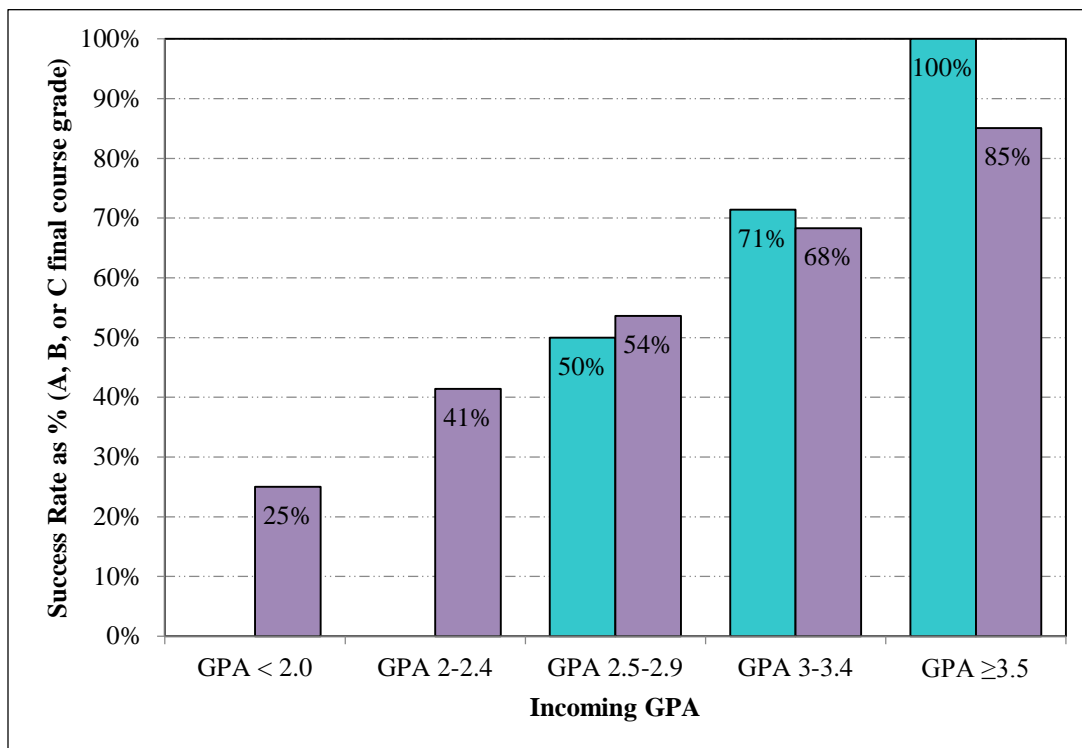

Figure 12. Success rates in MAT 1033, MAC 1105, BIO 1010 or CHEM 2025 for those scheduling 3 or more peer tutoring appointments (aqua) and those scheduling less than 3 (purple) based on GPA upon entering college.

A Cochran-Mantel-Haenszel (CMH) test is normally conducted on the success rate data of those who accrued three or more visits to the Tutoring Center and those that did not to determine statistical significance of the results according to standard methods (McDonald, 2009). However, sample size is limited and so no study was completed.

5.2   EXPLORATORY ANALYSIS & LONGITUDINAL STUDIES

A comparison of success rate based on number of scheduled appointments for peer tutoring conducted in order to explore and quantify the value of peer tutoring. The results of the analysis are shown in Figure 13. For students with 3 or more scheduled appointments, the definition of Outcome #3, success rate is slightly lower (73%) than those with no appointments (74%), and so the goal is not met.
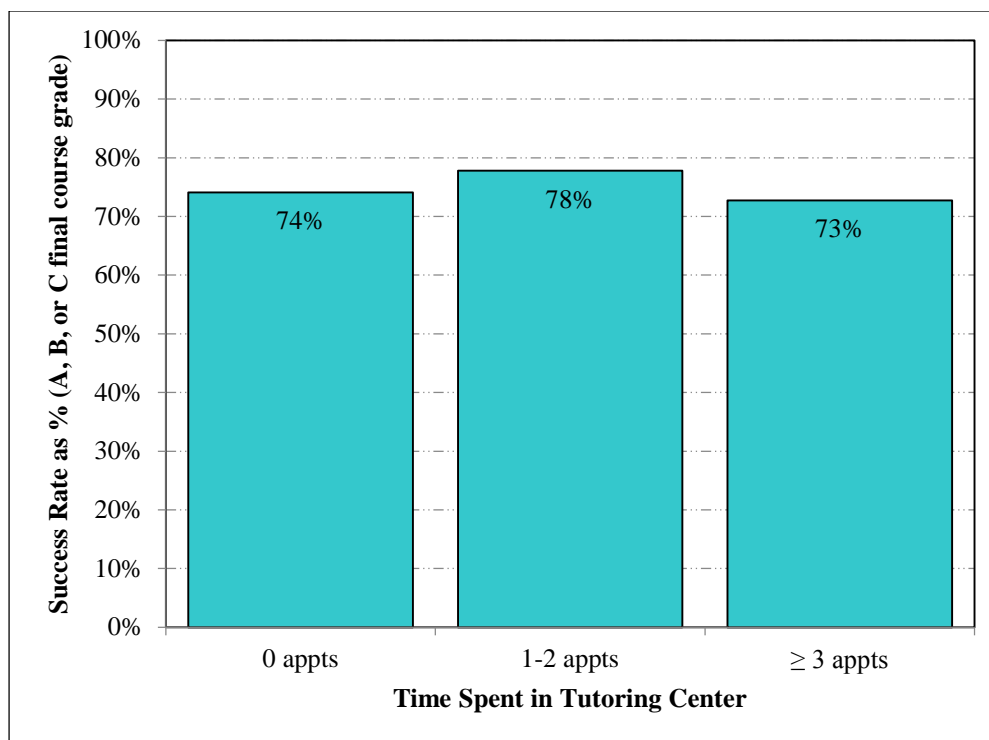
Figure 13. Success rates in MAT 1033, MAC 1105, BIO 1010 or CHEM 2025 based on number of scheduled peer tutoring appointments.

6 CONCLUSIONS

FSW's Academic Support Center employed a series of assessments in order to support and strengthen the capabilities of each center (writing, math, oral communications, and peer tutoring). Leadership goals included gauging achievement in composition courses, math courses, biology courses, and chemistry courses as they relate to time spent receiving support from the associated learning center or scheduled number of peer tutoring appointments.

A drill-down of Writing Center results are as follows:

1. Achievement of a 10% increase in success rates in ENC 1101 or ENC 1102 for those receiving greater than two hours of consultation compared with those receiving less than two hours based on incoming GPA (Outcome #1) was met for all five student cohorts (up from spring 2017 and the highest in the history of the study dating back to fall 2015). Success rates for those receiving greater than two hours of consultation is 32% higher for those with a GPA < 2.0, 25% higher for 2.0-2.4 GPA, 11% higher for 2.5-2.9 GPA, 10% higher for 3.0-3.4 GPA, and 11% higher for greater than or equal to 3.5 GPA.

2. A Cochran-Mantel-Haenszel (CMH) found the results in #1 above to be statistically significantly different.

3. In a comparison of success rates by increased time spent at the Writing Center, success rate for ENC 1101 or 1102 courses in fall 2017 students increases by 10% over those that did not spend time in the Writing Center.

4. In a longitudinal study comparing terms since fall 2014, in all cases success rate increases with increased time spent in the Writing Center with the exception of spring 2017, in which success rate appears to plateau. When comparing like terms, fall 2014, 2015, 2016, and 2017, increases are exhibited in all ranges (from 0 min to 1-119 min, and 1-119 min to ≥ 120 min) with the largest occurring in fall 2016, at 12% from 0 min to ≥ 120 min.
5. In a study comparing success rates by time spent at the Writing Center using 1 hour increments, results exhibit an immediate jump in success rate from 0 minutes spent at the center to under one hour spent (80% to 90%). With the exception of the 8-9 hour bin, success rates remain in the mid-to-upper 80% range or higher.
6. In a study comparing success rates based on time spent on at the Writing Center based on student type, the cohort exhibits improvement from 4-5% for time spent in the Writing Center. The traditional cohort exhibits improvement of 18% for time spent in the Writing Center.

A drilldown drill-down of Math Center results are as follows:
1. Achievement of a 10% increase in success rates in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 for those receiving greater than two hours of consultation compared with those receiving less than two hours based on incoming GPA (Outcome #2) was met in four of five cases (the same as spring 2017). Success rates for those receiving greater than two hours of consultation is 71% high for those with a GPA < 2.0, 28% higher for 2.0-2.4 GPA, 26% higher for 2.5-2.9 GPA, 10% higher for 3.0-3.4 GPA, and 2% higher for greater than or equal to 3.5 GPA (Table 2). A graphical representation of this data is shown in Figure 6. Note that not all records include a GPA in which to include in analysis.
2. A Cochran-Mantel-Haenszel (CMH) found the results in #1 above to be statistically significantly different.
3. In a comparison of success rates by increased time spent at the Math Center, success rate is approximately 12% higher in MAT 0057, MAT 1033, MAT 1100, or MAC 1105, down from 16% in spring 2017.
4. In a longitudinal study comparing terms since fall 2014, in five of seven terms since fall 2014, success rate consistently increases with increased time spent in the Math Center. In the remaining terms (fall 2014 and fall 2015), success rate peaks for those spending 1-119 min. at the center.
5. In a study comparing success rates by time spent at the Math Center using 1 hour increments, results exhibit an immediate increase. The student success rate without visiting the Math Center is 64%. Success rates are consistently above 65% for all but one case (5-6 hr).
6. In a study comparing success rates based on time spent on at the Math Center based on student type, both dual enrollment students and traditional students exhibit increases in success rates with increased time spent in the Math Center, however, dual enrollment students peak at 1-119 minutes (95%). Traditional students exhibit a consistently increasing success rate with time spent in the Math Center (57% at 0 minutes, 69% at 1-119 minutes, and 75% at ≥ 120 minutes). Like the dual enrollment cohort, the Math Center studies have historically shown drop-offs in overall success rates for those spending ≥ 120 minutes, occurring twice in the last seven semesters. This drop-off appears to be related in some way to student type.

A drilldown drill-down of Oral Communications Center results are as follows:

1. Success rates comparisons based on GPA yield little for interpretation due to small sample size (n=12 for those spending two or more hours at the center split across five cohorts based on GPA) and so no analysis was completed.
2. In a comparison of success rates by increased time spent at the Oral Communications Center, success rate is approximately 14% higher in SPC 1017 and SPC 2608 than those spending no time at the center.

A drill-down of Peer Tutoring Center results are as follows:

1. Achievement of a 10% increase in success rates in MAT 1033, MAC 1105, BIO 1010, or CHEM 2025 given three or more scheduled appointments, was met in two of four cases (the remaining one didn't have samples). Also, sample data for the available areas was minimal as files with GPA limits sample size. There were no students with a recorded incoming GPA below 2.0 that had scheduled three or more peer tutoring appointments with which to compare. Success rates comparisons interpretation is limited.
2. In a comparison of success rates by increased number of peer tutoring appointments, success rate is slightly lower (73%) than those with no appointments (74%), and so the goal is not met.

7 REFERENCES

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