

# Academic Support Centers Assessment Report

## Fall 2019

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## 1 INTRODUCTION

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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 2019 which is to include the entire 2019-20 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, Asst. VP, IR, Assessment & Effectiveness ([jfvangaalen@fsw.edu](mailto:jfvangaalen@fsw.edu); x16965).

## 2 WRITING CENTER

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In fall 2019, 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 2019-20 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 in one of five student cohorts. Success rates for those receiving greater than two hours of consultation is 12% higher for < 2.0 GPA, 8% higher for 2.0-2.4 GPA, 1% higher for 2.5-2.9 GPA, 2% higher for 3.0-3.4 GPA, and 1% 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
<b>Goal: Success Rate 10% higher for n ≥ 2hr</b>		
GPA < 2.0	42% (n=24)	30% (n=1003)
GPA 2.0 – 2.4	80% (n=25)	72% (n=474)
GPA 2.5 – 2.9	90% (n=41)	89% (n=719)
GPA 3.0 – 3.4	99% (n=76)	97% (n=996)
GPA ≥ 3.5	100% (n=124)	99% (n=1337)

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.

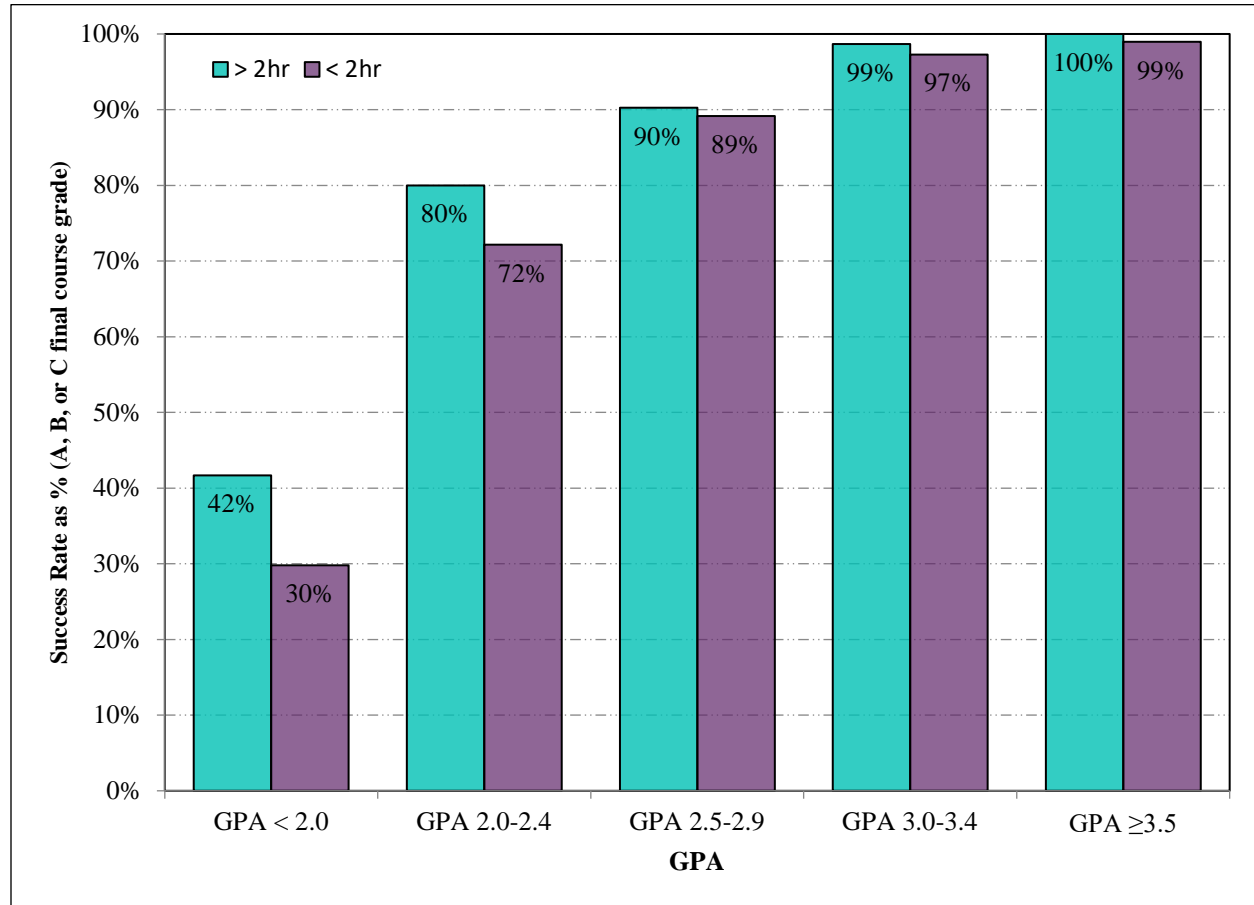


Figure 1. Success rates in ENC 1101 or ENC 1102 for those receiving greater than two hours consultation in the Writing Center (aqua) and those receiving less than two hours consultation (purple) based on GPA upon entering college.

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 ( $\chi^2_{MH}=2.789$ , 1 d.f.,  $P=0.095$ ). 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 not 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 2019 students increases by 14% over those that did not spend time in the Writing Center, compared with 12% in spring 2019, 9% in fall 2018, 13% in spring 2018, 10% in fall 2017 and the 9% in spring 2017. These results are either on par with or exceed that of comparative research (Cooper, 2010; Hendriksen et al., 2005).

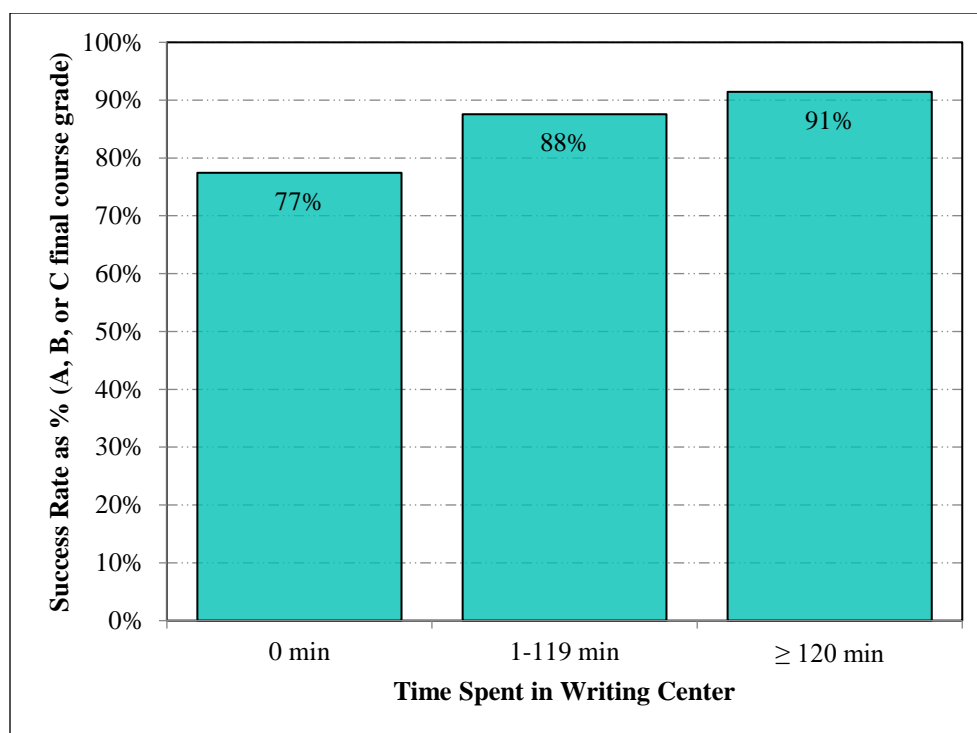


Figure 2. Success rates in ENC 1101 or ENC 1102 based on time spent in the Writing Center.

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 spring 2019. Demographics of students 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 and fall 2018, in which success rate appears to plateau. In 11 terms included in the study, those spending  $\geq 120$  minutes in the Writing Center exhibit the highest success rates in 9 of 11; the remaining 2/11 are those spending 1-119 minutes. In all cases, those not visiting the Writing Center exhibit the lowest achievement and are never closer than 6% points below those spending 0 min to 1-119 min.

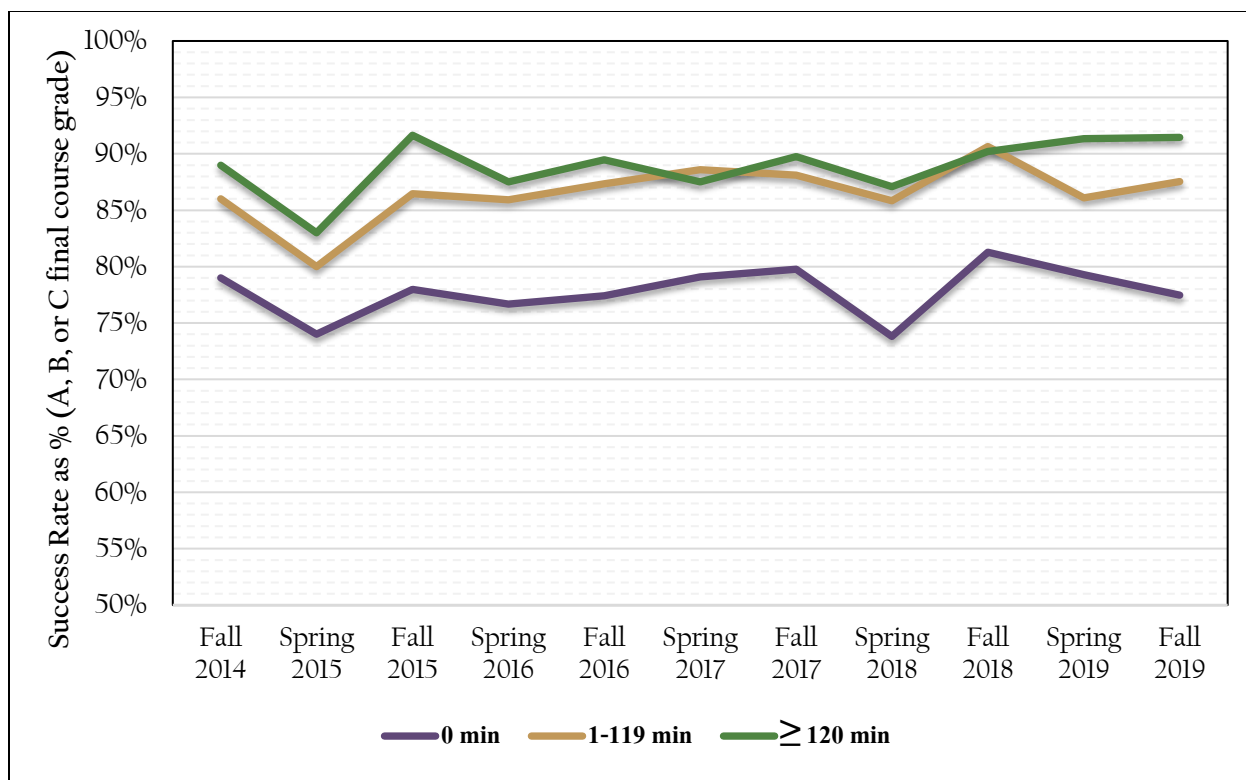


Figure 3. Success rates in ENC 1101 or ENC 1102 based on time spent in the Writing Center for fall 2014 through fall 2019. Purple denotes 0 minutes spent in the center, beige denotes 1-119 minutes spent, and green denotes 120 or more minutes spent.

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 (77% up to 89%). Success rates remain in the mid-to-upper 80% range or higher.

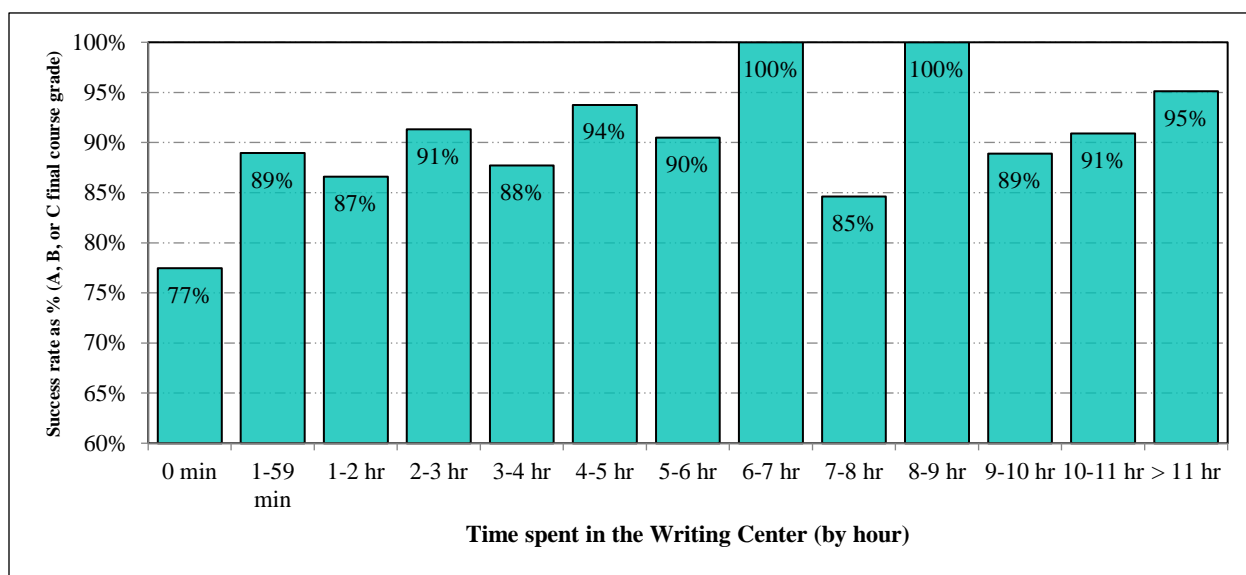


Figure 4. ENC 1101/1102 success rate based on time spent in the Writing Center per hour (up to 11+).

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 93%). The dual enrollment cohort exhibits improvement of 4% for time spent in the Writing Center. The traditional cohort exhibits improvement of 22% for time spent in the Writing Center.

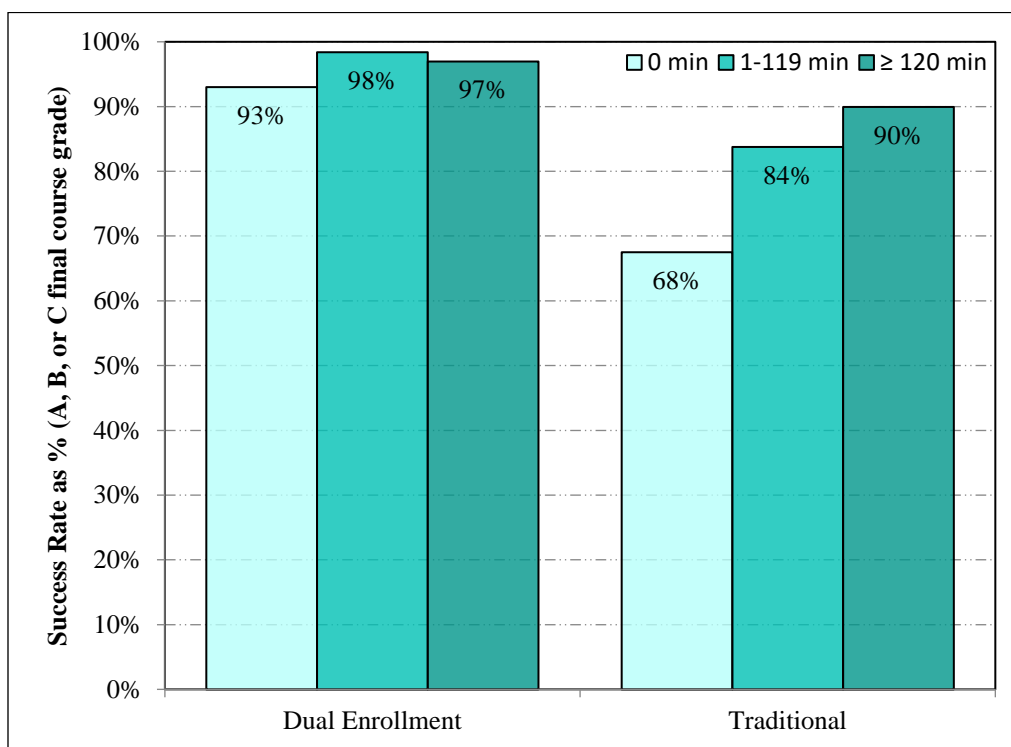


Figure 5. Comparison of ENC 1101/1102 success rates by time spent in the Writing Center disaggregated by student type. Light aqua denotes 0 min. spent in the center, aqua denotes 1-119 min. spent, and dark aqua denotes 120 or more min. spent.

### 3 MATH CENTER

In fall 2019, 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 2018-19 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 one of five cases. Success rates for those receiving greater than two hours of consultation is 17% higher for those with a GPA < 2.0, 6% higher for 2.0-2.4 GPA, 8% lower for 2.5-2.9 GPA, 3% higher for 3.0-3.4 GPA, and 3% lower 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 ≥ 2hr	n < 2hr
<i>Success Rate 10% higher for n ≥ 2hr</i>		
GPA < 2.0	29% (n=51)	12% (n=1125)
GPA 2.0 – 2.4	54% (n=52)	48% (n=588)
GPA 2.5 – 2.9	64% (n=94)	72% (n=833)
GPA 3.0 – 3.4	90% (n=109)	87% (n=944)
GPA ≥ 3.5	93% (n=119)	96% (n=1018)

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.

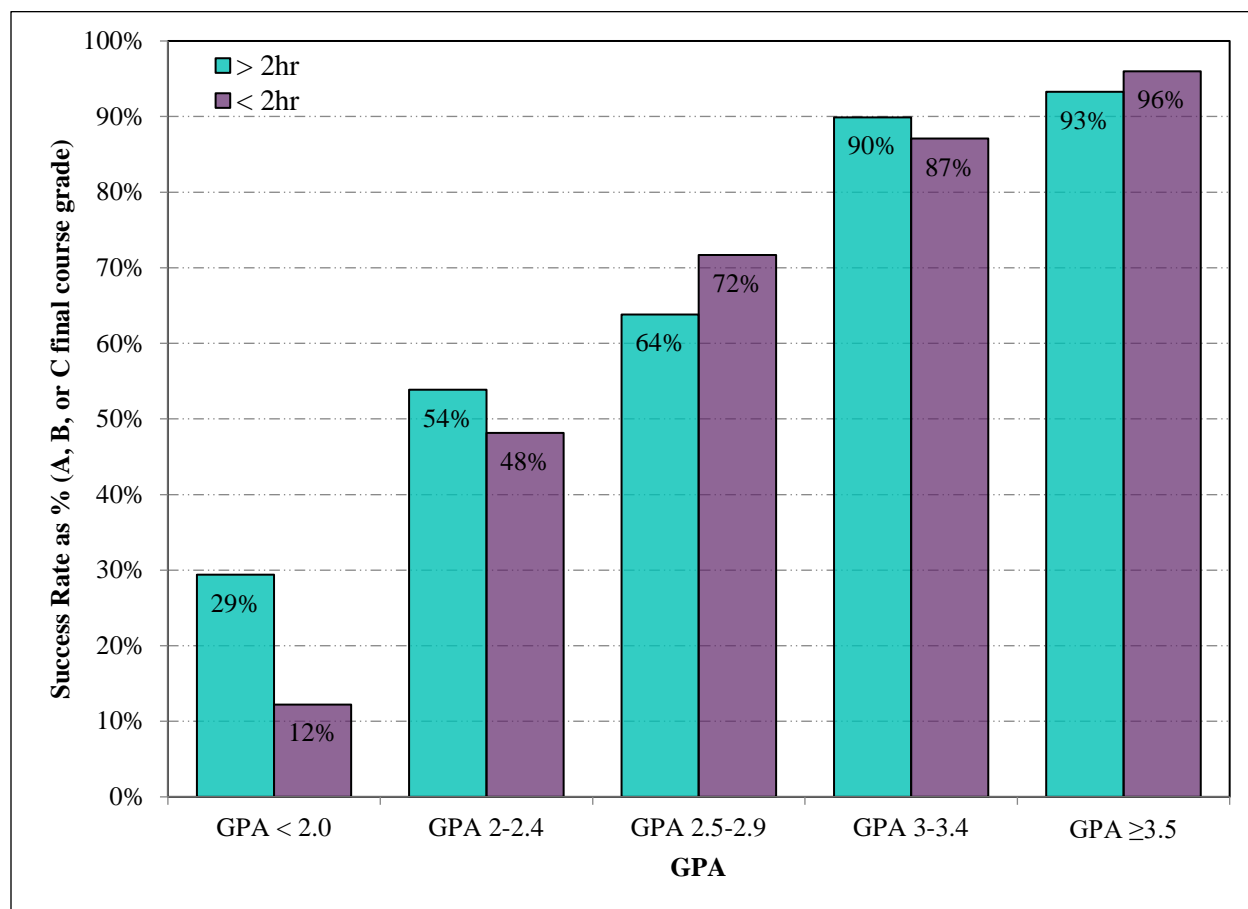


Figure 6. Success rates in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 for those receiving greater than two hours consultation in the Math Center (aqua) and those receiving less than two hours consultation (purple) based on GPA upon entering college.

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 ( $\geq 2$  hr consultation or  $\leq 2$  hr 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 ( $\chi^2_{MH}=0.302$ , 1 d.f.,  $P=0.582$ ). 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 not rejected.

### 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 11% higher in MAT 0057, MAT 1033, MAT 1100, or MAC 1105, compared with 10% in spring 2019, 6% in fall 2018, 8% in spring 2018, 12% in fall 2017, and 16% in spring 2017.

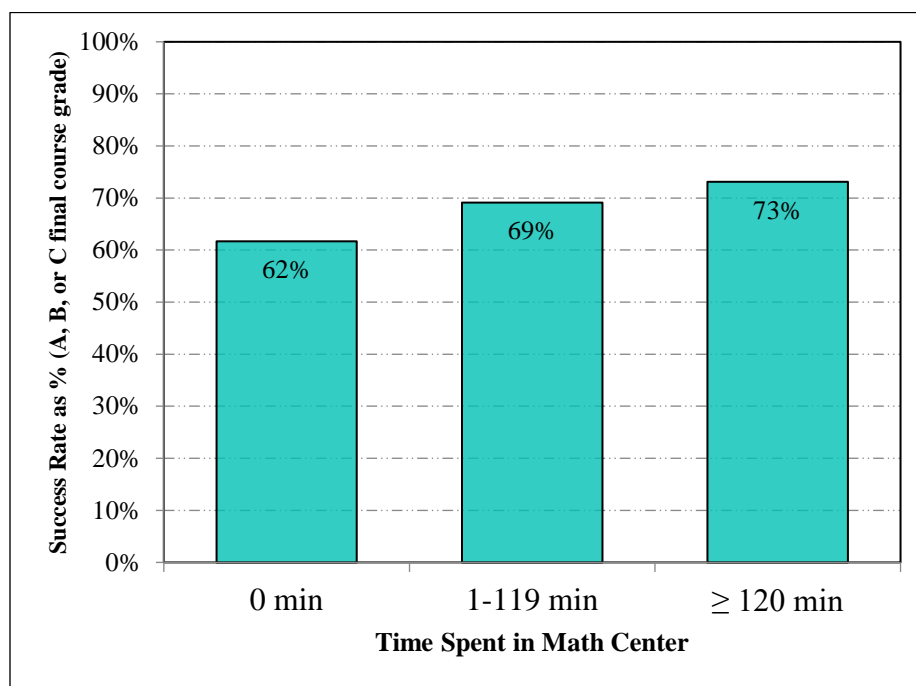


Figure 7. Success rates in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 based on time spent in the Math Center.

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 2019. 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 8 of 11 terms since fall 2014, success rate consistently increases with increased time spent in the Math Center. In the remaining terms (fall 2014, fall 2015, and fall 2018), success rate peaks for those spending 1-119 min. at the center.

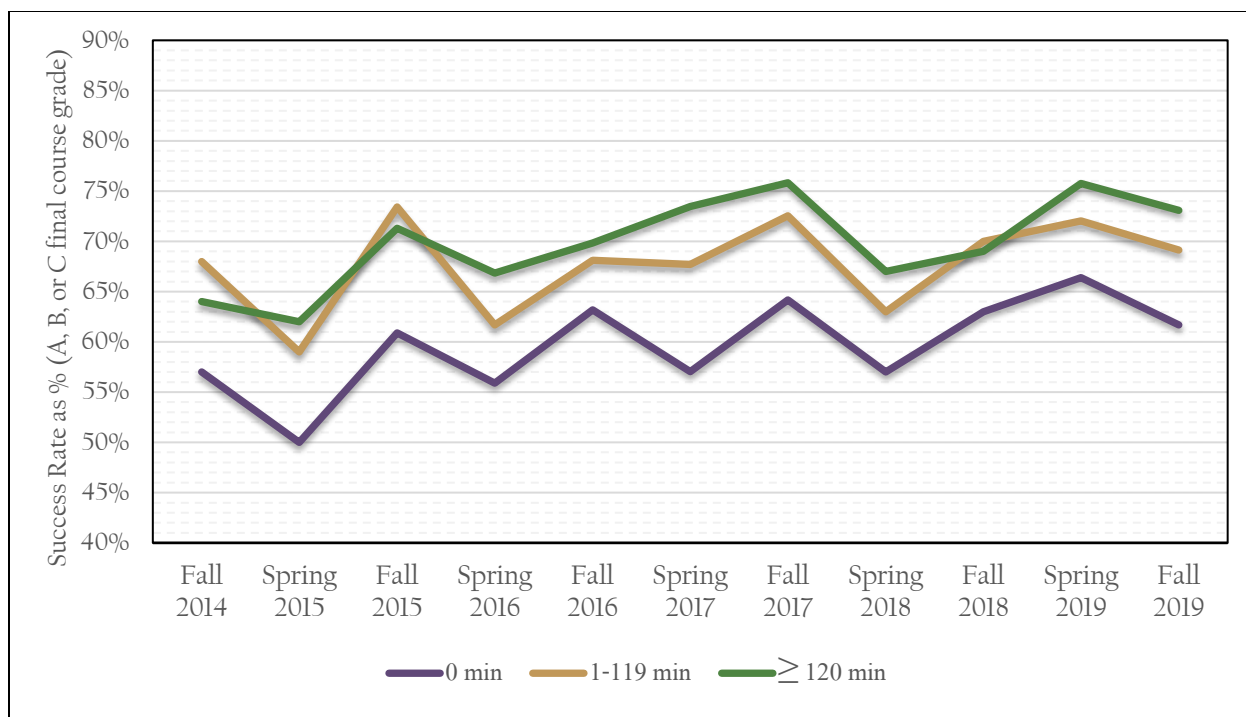


Figure 8. Success rates in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 based on time spent in the Math Center for fall 2014 through fall 2019. Purple denotes 0 minutes spent in the center, beige denotes 1-119 minutes spent, and green denotes 120 or more minutes spent.

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 62%. Success rates are consistently above 62% for all but one case (10-11 hr).

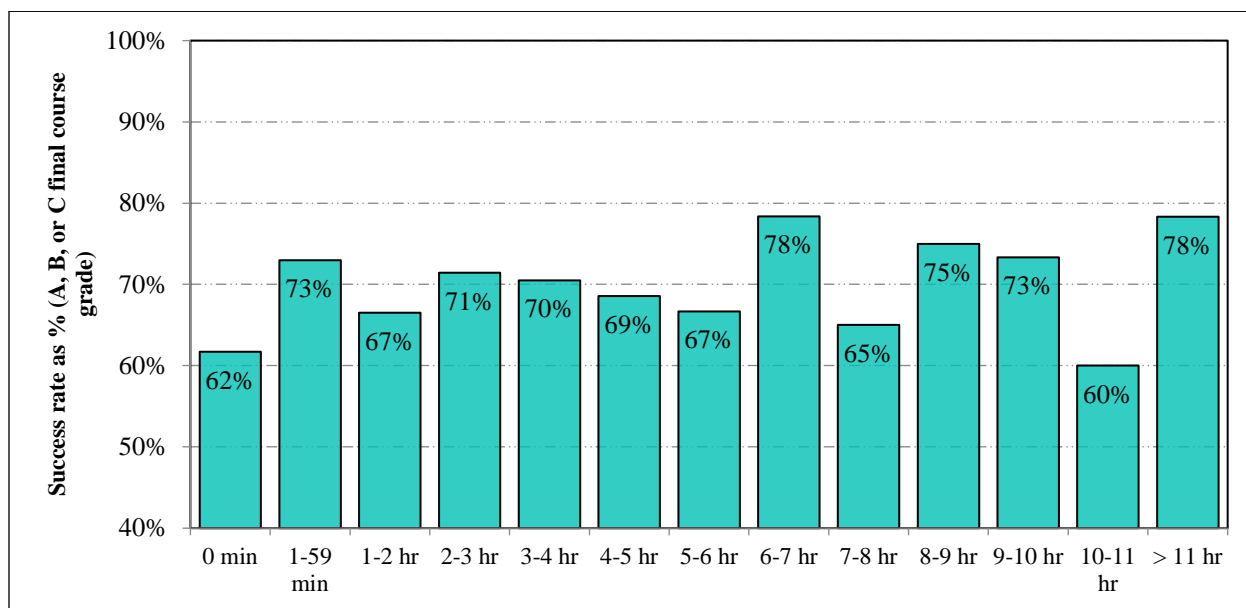


Figure 9. MAT 0057 / 1033 / 1100 / MAC 1105 success rate based on time spent in the Math Center per hour (up to 11+).



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.

Traditional students exhibit increases in success rates with increased time spent in the Math Center, however, dual enrollment students exhibit little difference. Traditional students exhibit a consistently increasing success rate with time spent in the Math Center (54% at 0 minutes, 64% at 1-119 minutes, and 71% at  $\geq 120$  minutes).

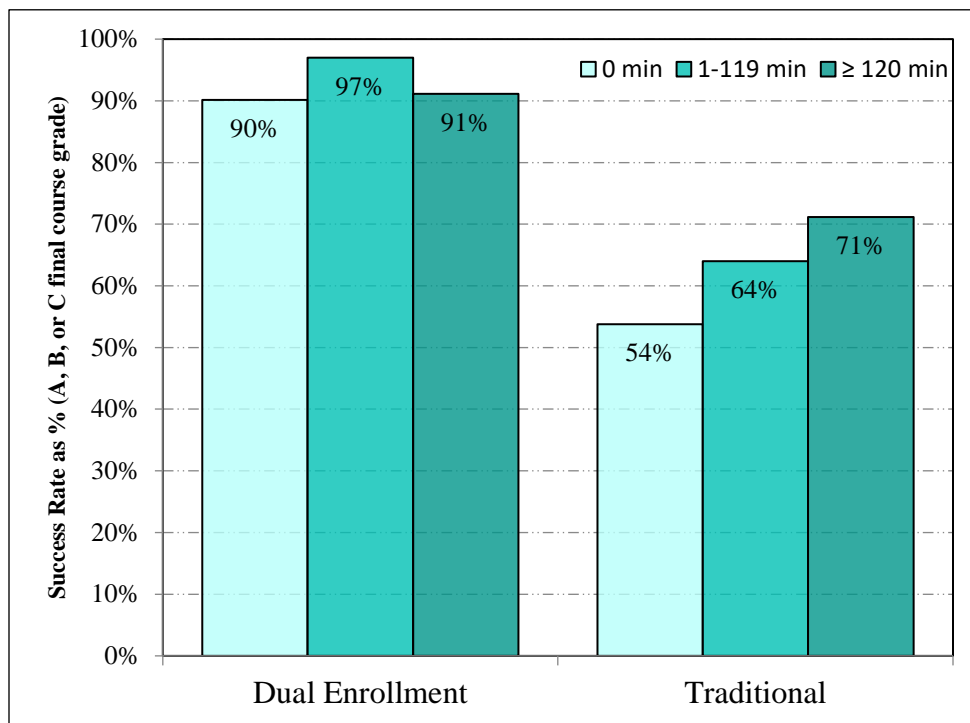


Figure 10. Comparison of MAT 0057, MAT 1033, MAT 1100, and MAC 1105 success rates by time spent in the Math Center disaggregated by student type. Light aqua denotes 0 minutes spent in the center, dark aqua denotes 1-119 minutes spent, and the darkest aqua denotes 120 or more minutes spent.

## 4 ORAL COMMUNICATIONS CENTER

Not enough data regarding GPA and matching Oral Communication Center visits was available. As a result, no study was completed.

## 5 TUTOR.COM

A comparison of success rate based on time spent on Tutor.com for writing support 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 11. For students spending two or more hours utilizing Tutor.com, the time minimum used in the definition of Outcome #1, success rate is approximately 19% higher in ENC 1101

and ENC 1102. This is compared with an 14% jump for students utilizing the Writing Center (77% up to 91%).

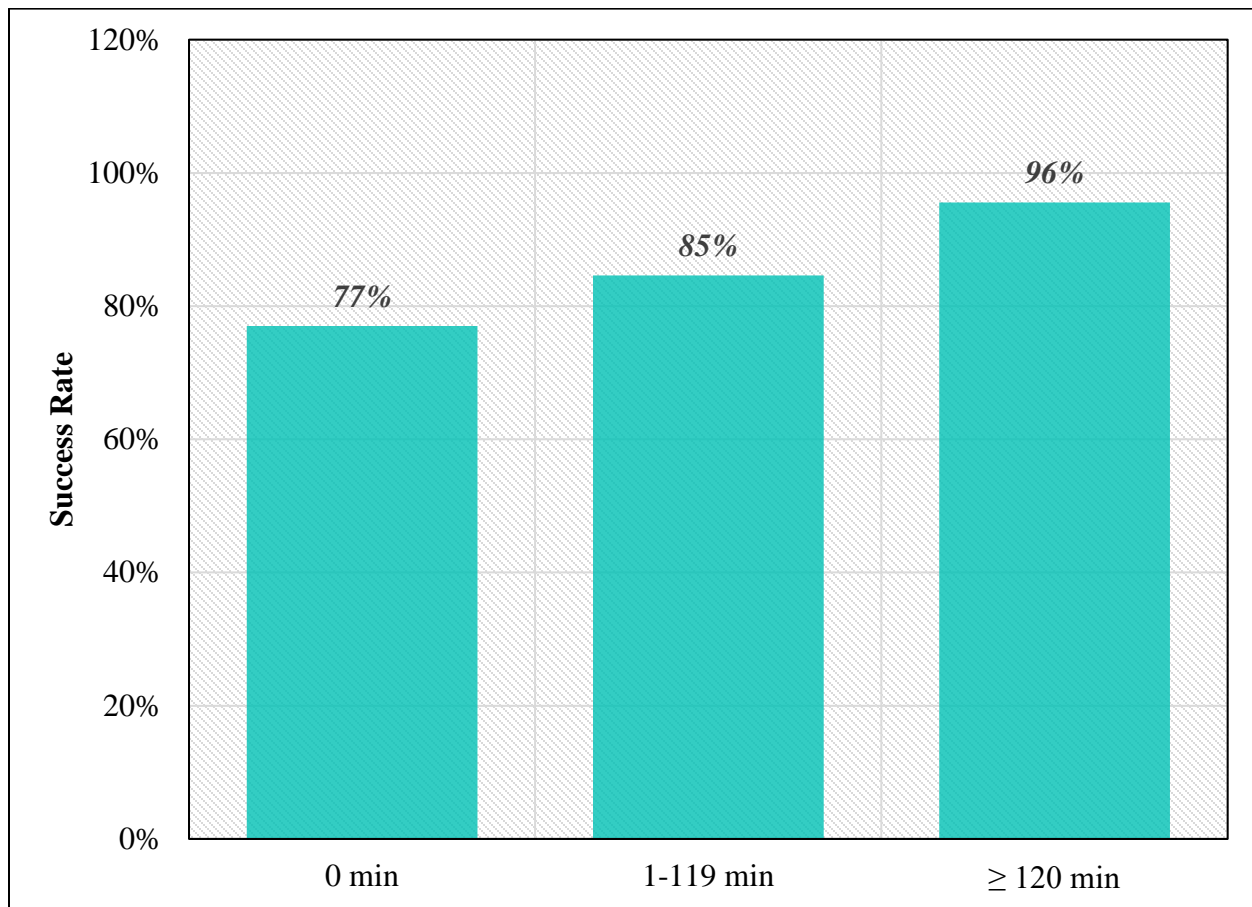


Figure 11. Success rates in ENC 1101 or ENC 1102 based on time spent utilizing Tutor.com for writing support. Tutor.com users for writing support and in one of these classes is 381.

A comparison of success rate based on time spent on Tutor.com for math support 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 12. For students spending two or more hours utilizing Tutor.com, the time minimum used in the definition of Outcome #2, success rate is approximately 17% higher in MAT 0057, MAT 1033, MAT 1100, or MAC 1105. This is compared with an 11% jump for students utilizing the Math Center (62% up to 73%).

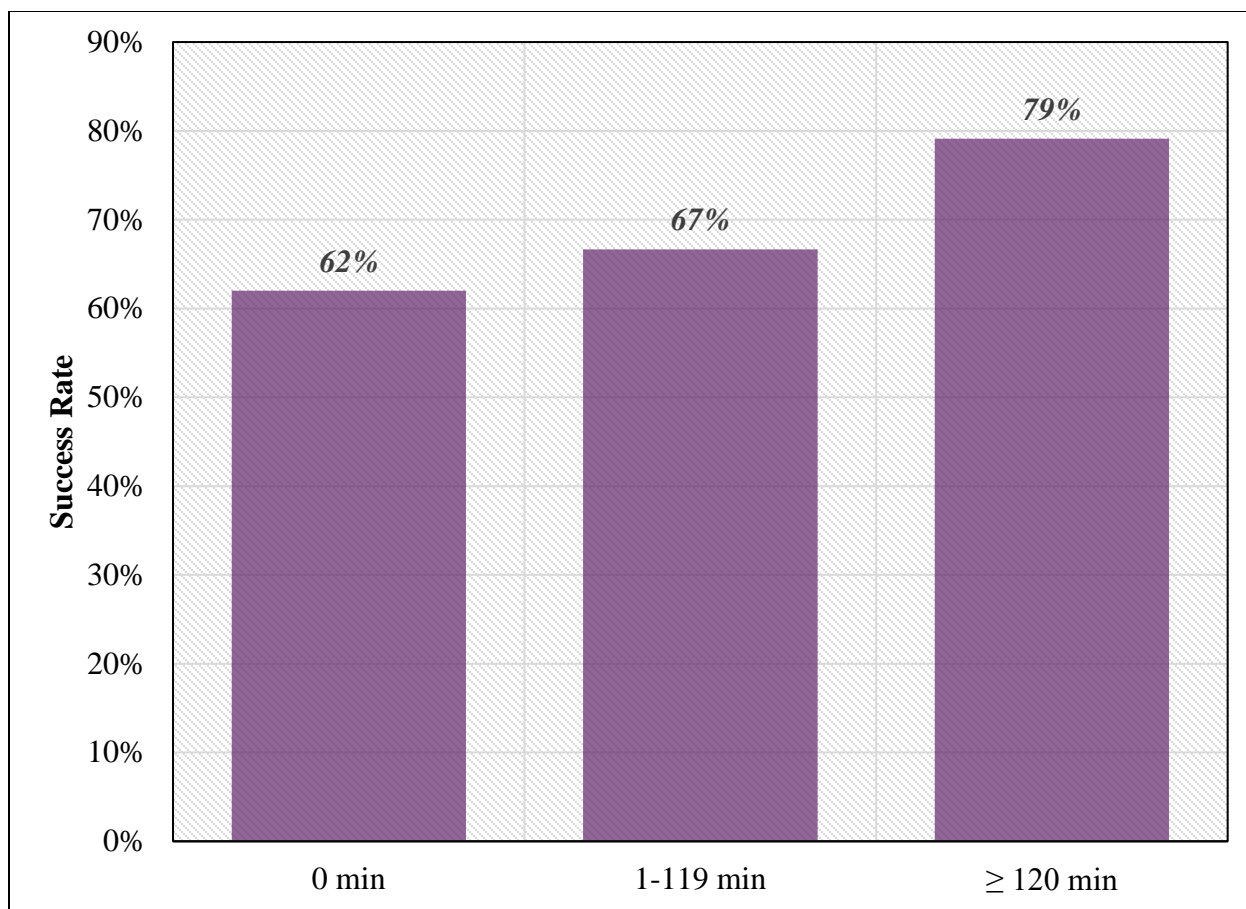


Figure 12. Success rates in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 based on time spent utilizing Tutor.com for math support. Tutor.com users for math support and in one of these classes is 200.

## 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.

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 in one of five student cohorts. Success rates for those receiving greater than two hours of consultation is 12% higher for < 2.0 GPA, 8% higher for 2.0-2.4 GPA, 1% higher for 2.5-2.9 GPA, 2% higher for 3.0-3.4 GPA, and 1% higher for greater than or equal to 3.5 GPA
2. A Cochran-Mantel-Haenszel (CMH) found the results in #1 above to be slightly too small a difference 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 2019 students increases by 14% over those that did not spend

time in the Writing Center, compared with 12% in spring 2019, 9% in fall 2018, 13% in spring 2018, 10% in fall 2017 and the 9% in spring 2017.

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 and fall 2018, in which success rate appears to plateau. In 11 terms included in the study, those spending  $\geq 120$  minutes in the Writing Center exhibit the highest success rates in 9 of 11; the remaining 2/11 are those spending 1-119 minutes. In all cases, those not visiting the Writing Center exhibit the lowest achievement and are never closer than 6% points below those spending 0 min to 1-119 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 (77% up to 89%). 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 dual enrollment cohort exhibits improvement of 4% for time spent in the Writing Center. The traditional cohort exhibits improvement of 22% 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 one of five cases. Success rates for those receiving greater than two hours of consultation is 17% higher for those with a GPA  $< 2.0$ , 6% higher for 2.0-2.4 GPA, 8% lower for 2.5-2.9 GPA, 3% higher for 3.0-3.4 GPA, and 3% lower for greater than or equal to 3.5 GPA.
2. A Cochran-Mantel-Haenszel (CMH) found the results in #1 above to be slightly too small a difference to be statistically significantly different.
3. In a comparison of success rates by increased time spent at the Math Center, success rate is approximately 11% higher in MAT 0057, MAT 1033, MAT 1100, or MAC 1105, compared with 10% in spring 2019, 6% in fall 2018, 8% in spring 2018, 12% in fall 2017, and 16% in spring 2017.
4. In a longitudinal study comparing terms since fall 2014, in 8 of 11 terms since fall 2014, success rate consistently increases with increased time spent in the Math Center. In the remaining terms (fall 2014, fall 2015, and fall 2018), 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 62%. Success rates are consistently above 62% for all but one case (10-11 hr).
6. In a study comparing success rates based on time spent on at the Math Center based on student type, traditional students exhibit increases in success rates with increased time spent in the Math Center, however, dual enrollment students exhibit little difference. Traditional students exhibit a consistently increasing success rate with time spent in the Math Center (54% at 0 minutes, 64% at 1-119 minutes, and 71% at  $\geq 120$  minutes).

## 7 REFERENCES

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