

Academic Support Centers Achievement Assessment Report

Fall 2021

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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 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 2021 which is to include the entire 2021-22 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; x16965).

2 WRITING CENTER

In the Fall 2021 term, 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 2021-22 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, 1% higher for 2.0-2.4 GPA, 2% lower for 2.5-2.9 GPA, 4% higher for 3.0-3.4 GPA, and 1% lower for greater than or equal to 3.5 GPA (Table 1). A graphical representation of this data is shown in Figure 1.

	n ≥ 2hr	n < 2hr
Goal: Success Rate 10% higher for n ≥ 2hr		
GPA < 2.0	43% (n=21)	31% (n=636)
GPA 2.0 – 2.4	73% (n=15)	72% (n=343)
GPA 2.5 – 2.9	87% (n=15)	89% (n=480)
GPA 3.0 – 3.4	100% (n=26)	96% (n=626)
GPA ≥ 3.5	98% (n=43)	99% (n=935)

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.

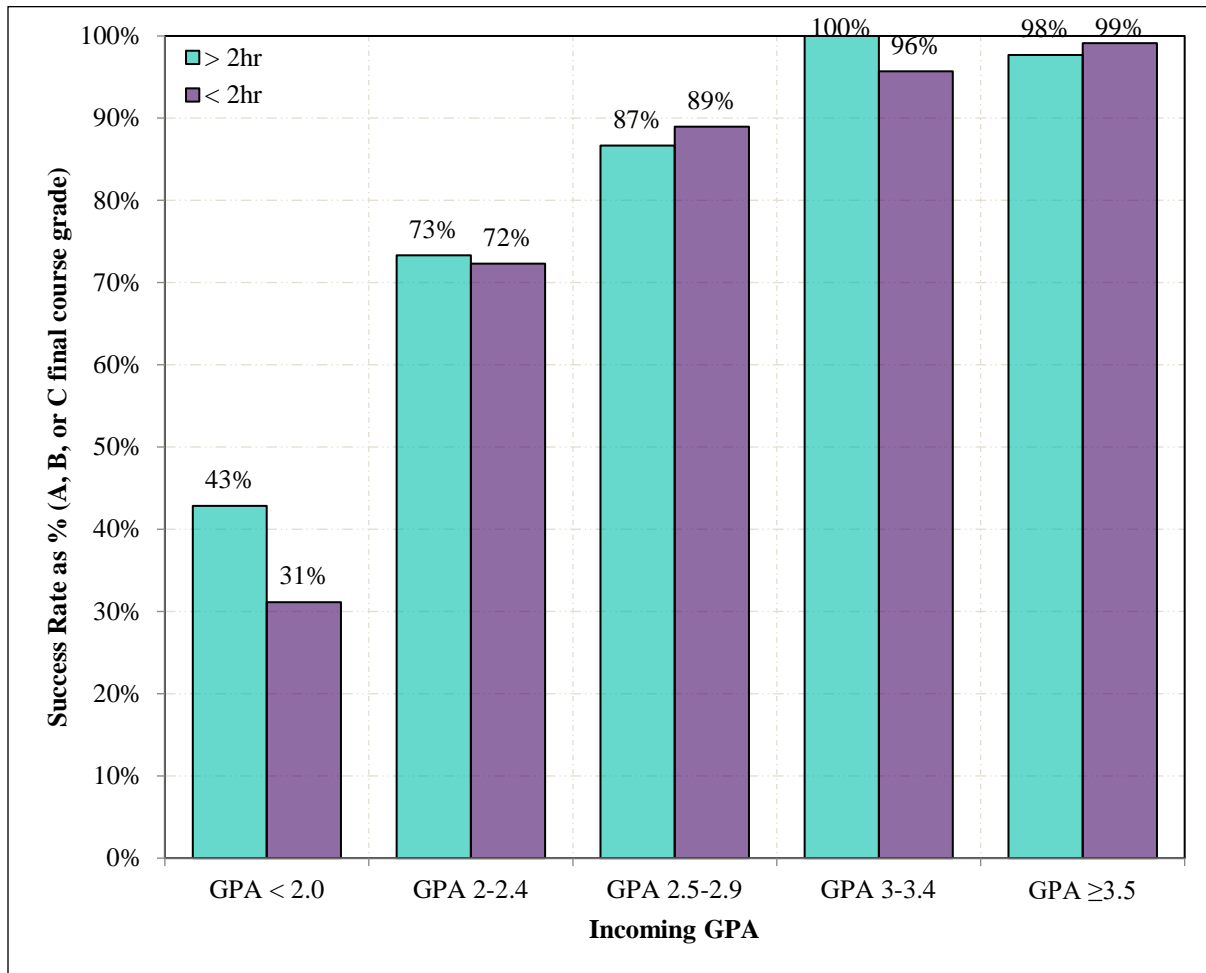


Figure 1. Success rates in ENC 1101 or ENC 1102 for those receiving greater than two hours consultation in the Writing Center (aqua) and those receiving less than two hours consultation (purple) based on GPA upon entering college.

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 not exhibit a statistically significantly higher success rate than those who accrued fewer than two hours of consultation time ($\chi^2_{MH}=0.467$, 1 d.f.,

P=0.494). 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 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 increases by 11% over those that did not spend time in the Writing Center, compared with 16% in spring 2021, 23% in fall 2020, 7% in spring 2020, 14% in fall 2019, 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).

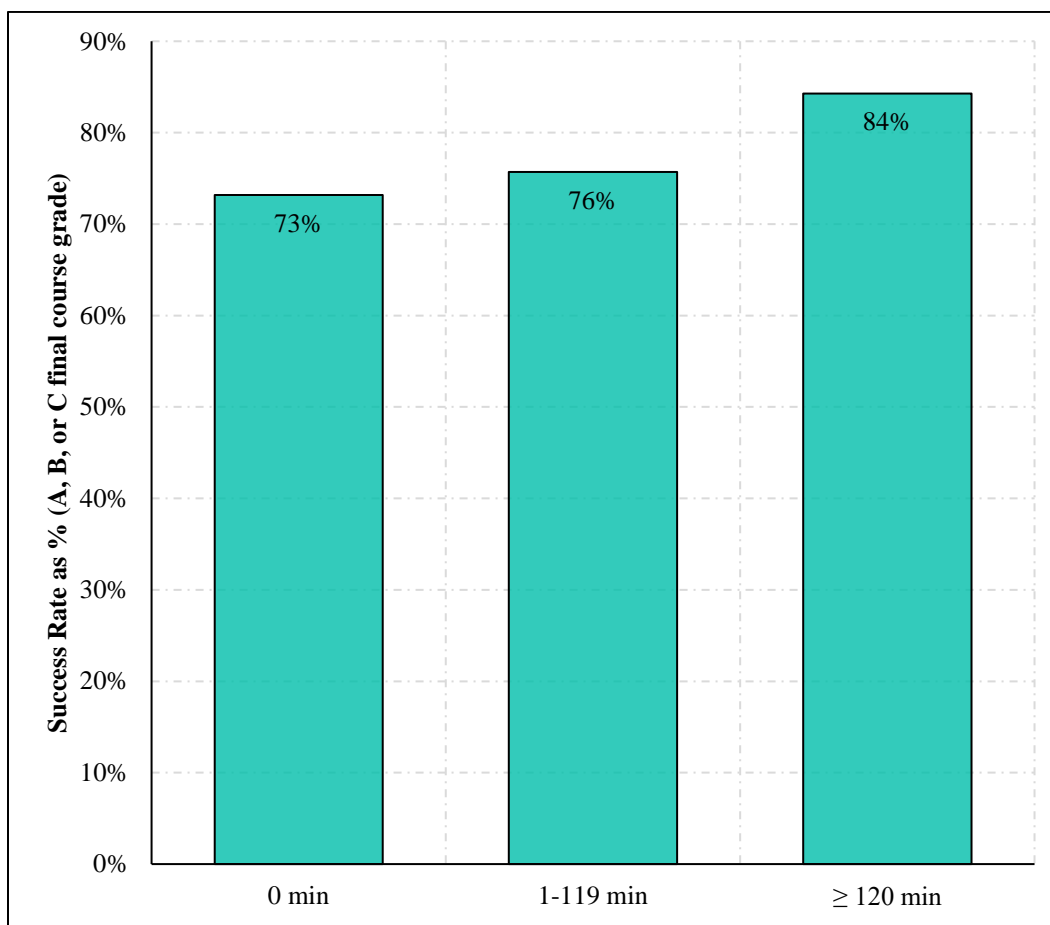


Figure 2. Success rates in ENC 1101 or ENC 1102 based on time spent in the Writing Center.

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 the present. 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 15 terms included in the study, those spending ≥ 120 minutes in the Writing Center exhibit the highest success rates in 13 of 15; the remaining 2/15 are those spending 1-119 minutes.

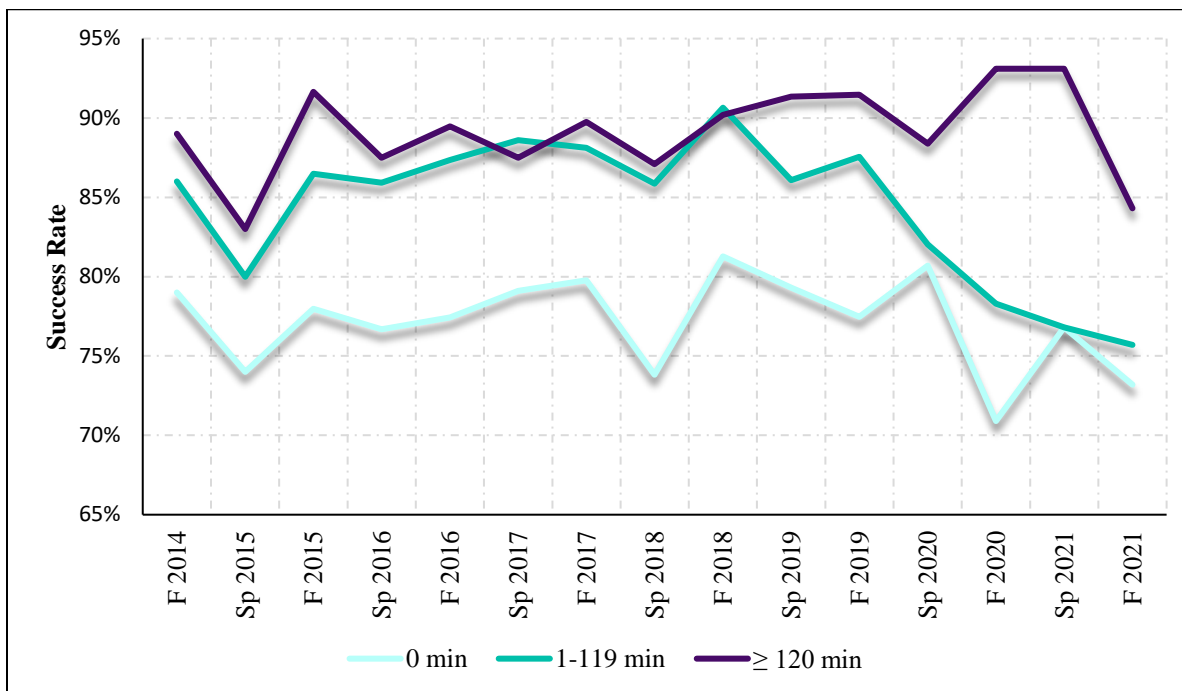


Figure 3. Success rates in ENC 1101 or ENC 1102 based on time spent in the Writing Center for fall 2014 through the present. Light aqua denotes 0 minutes spent in the center, dark aqua denotes 1-119 minutes spent, and purple denotes 120 or more minutes spent.

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 a steady increase in success rate with time spent with sharp drops as a result of limited sample size at higher time frames.

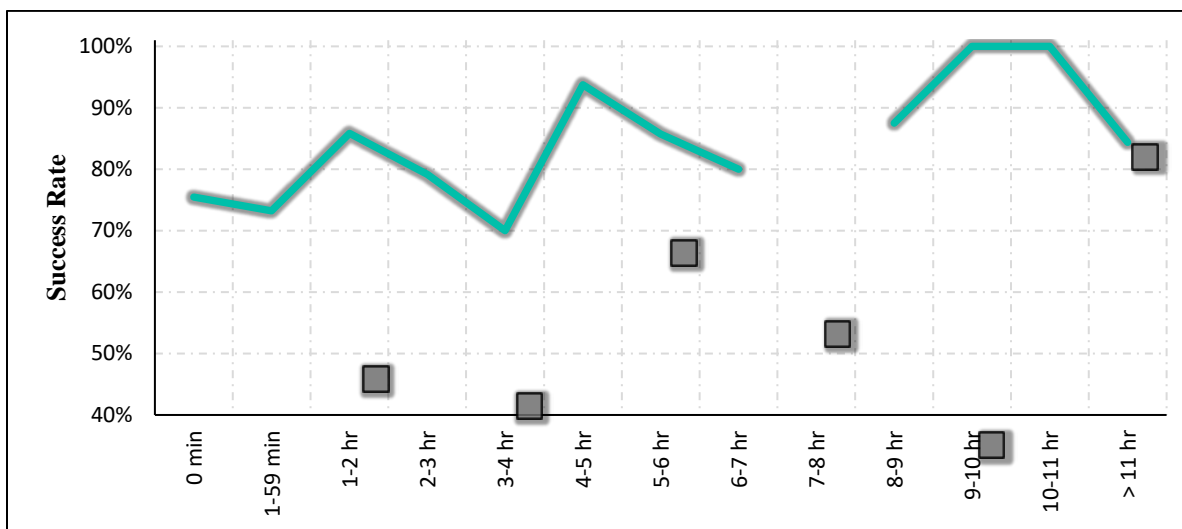


Figure 4. ENC 1101/1102 success rate based on time spent in the Writing Center per hour (up to 11+).

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.

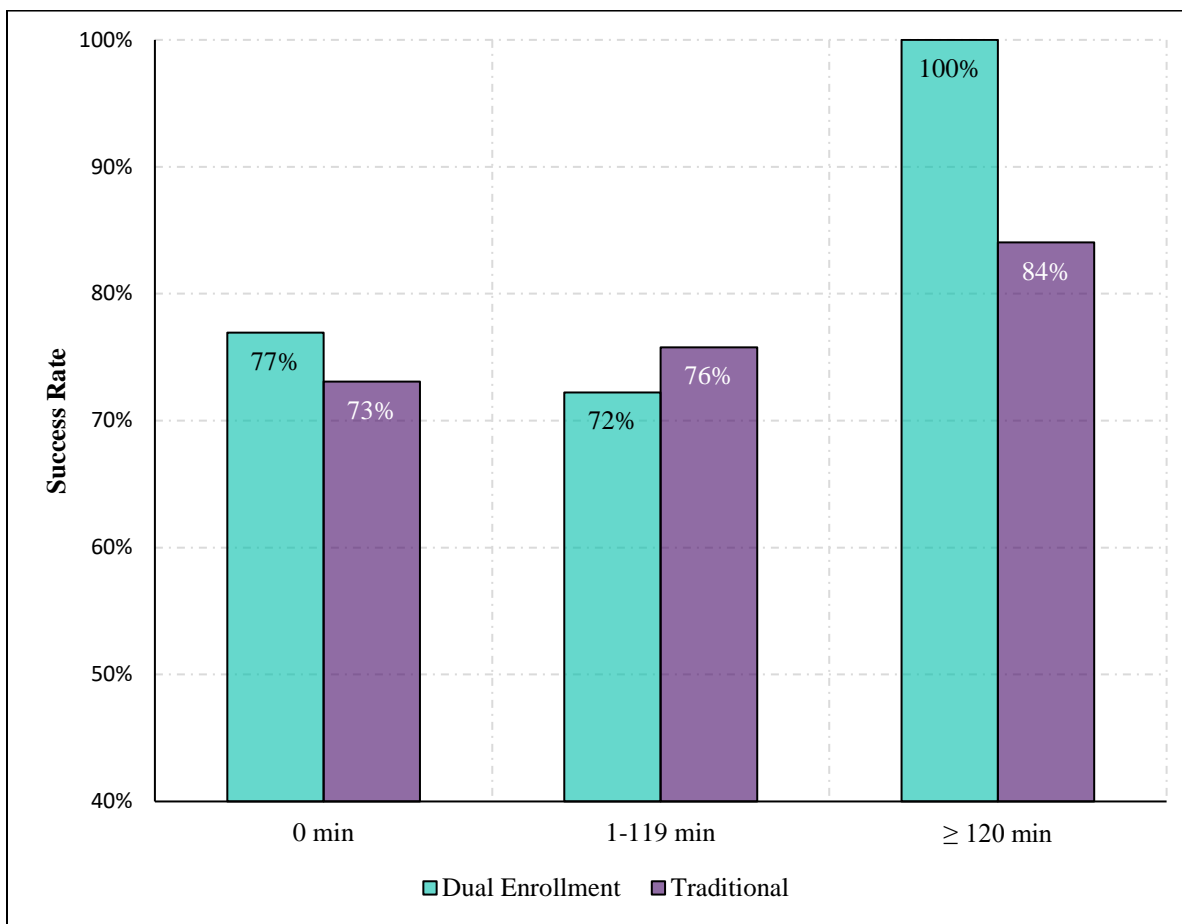


Figure 5. Comparison of ENC 1101/1102 success rates by time spent in the Writing Center disaggregated by student type.

3 MATH CENTER

In the Fall 2021 term, 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 2020-21 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 4% lower for those with a GPA < 2.0, 16% higher for 2.0-2.4 GPA, 5% higher for 2.5-2.9 GPA, 2% lower for 3.0-3.4 GPA, and 7% lower at greater than 3.5 GPA (Table 2). A graphical representation of this data is shown in Figure 6.

	n ≥ 2hr	n < 2hr
Success Rate 10% higher for n ≥ 2hr		
GPA < 2.0	3015(n=20)	19% (n=764)
GPA 2.0 – 2.4	59% (n=17)	43% (n=547)
GPA 2.5 – 2.9	71% (n=24)	66% (n=693)
GPA 3.0 – 3.4	83% (n=46)	85% (n=804)
GPA ≥ 3.5	89% (n=66)	96% (n=830)

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.

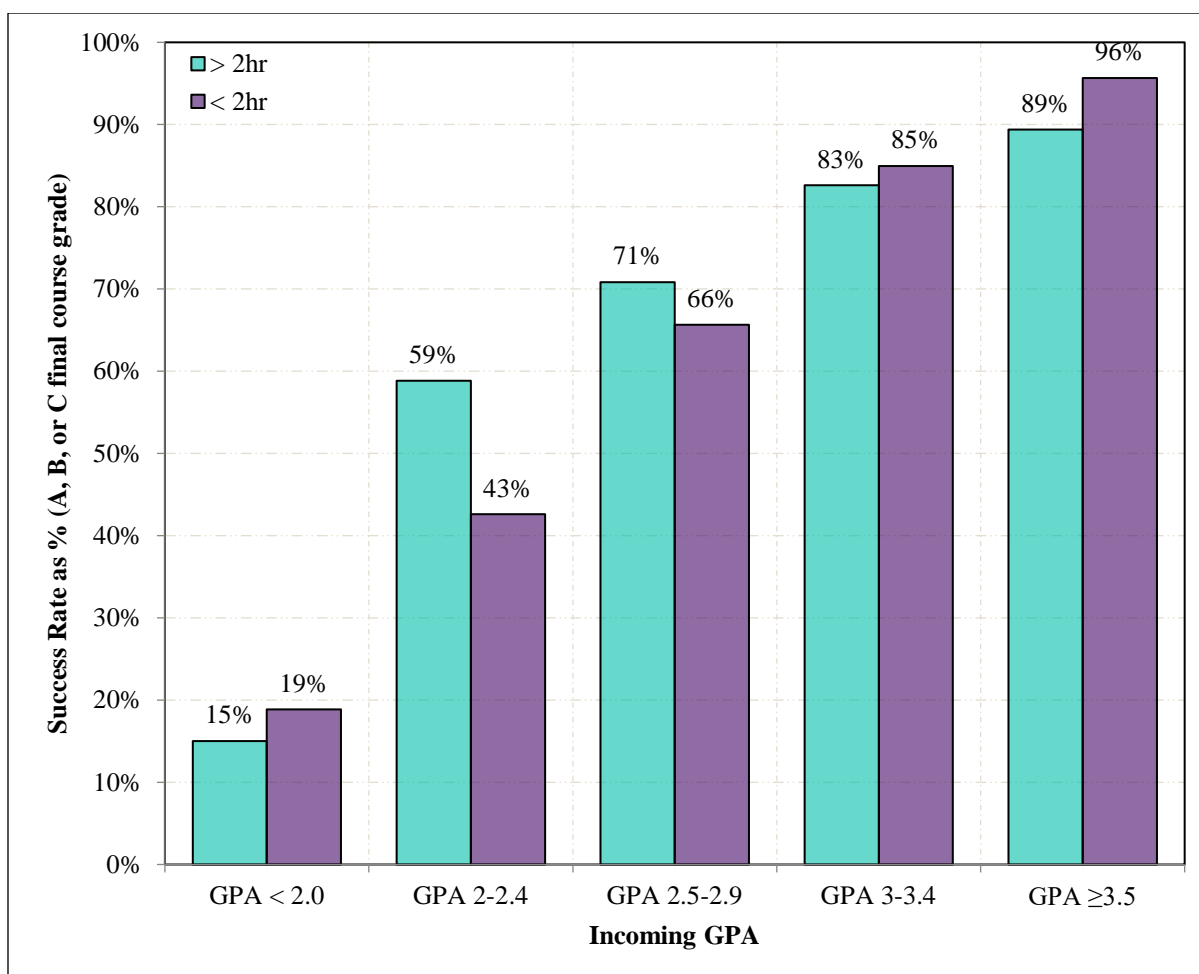


Figure 6. Success rates in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 for those receiving greater than two hours consultation in the Math Center (aqua) and those receiving less than two hours consultation (purple) based on GPA upon entering college.

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 (≥ 2 hr consultation or ≤ 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 do not have a statistically significantly higher success rate than those who accrued fewer than two hours of consultation time ($\chi^2_{MH}=0.073$, 1 d.f., $P=0.787$). 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 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 18% higher in MAT 0057, MAT 1033, MAT 1100, MAC 1105, or STA 2023 compared with 17% in spring 2021, 22% in fall 2020, 13% in spring 2020, 11% in fall 2019, 10% in spring 2019, 6% in fall 2018, 8% in spring 2018, 12% in fall 2017, and 16% in spring 2017.

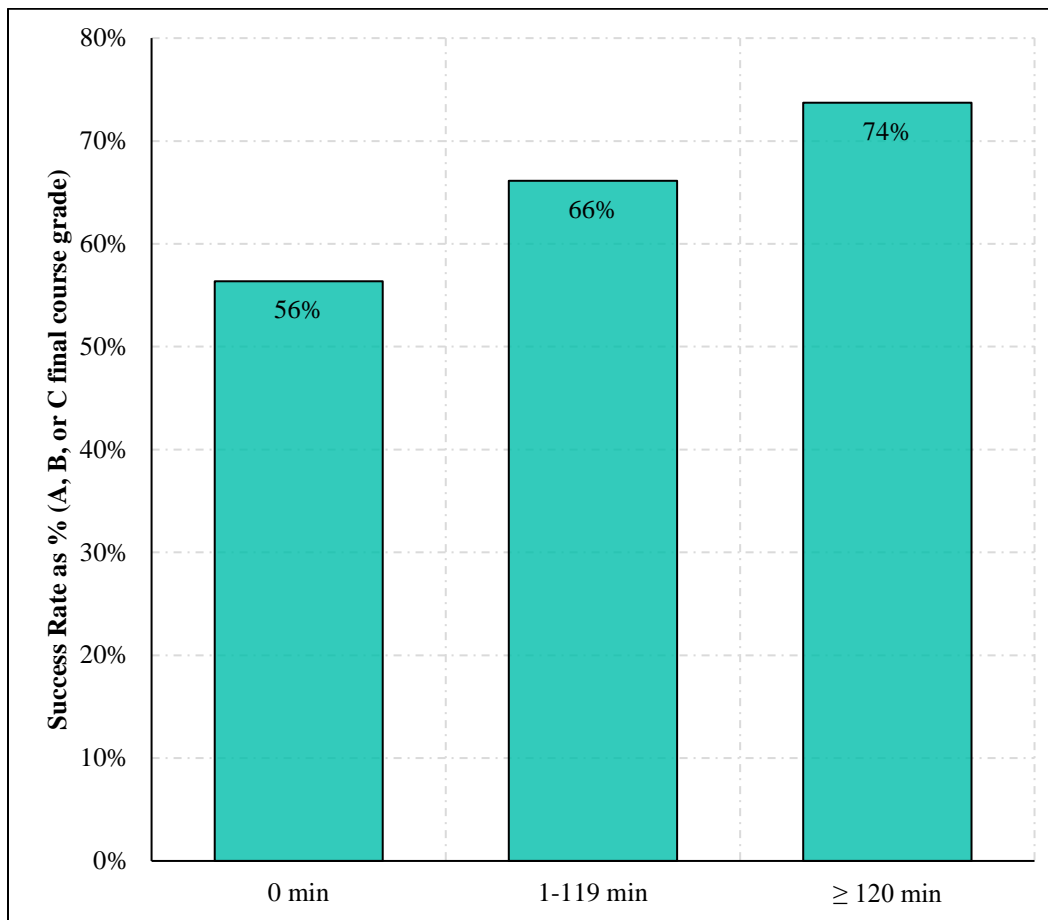


Figure 7. Success rates in MAT 0057, MAT 1033, MAT 1100, MAC 1105, or STA 2023 based on time spent in the Math Center.

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 the present. 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 11 of 15 terms since fall 2014, success rate consistently increases with increased time spent in the Math Center. In the remaining terms (fall 2014, fall 2015, fall 2018, and fall 2021), success rate peaks for those spending 1-119 minutes at the center.

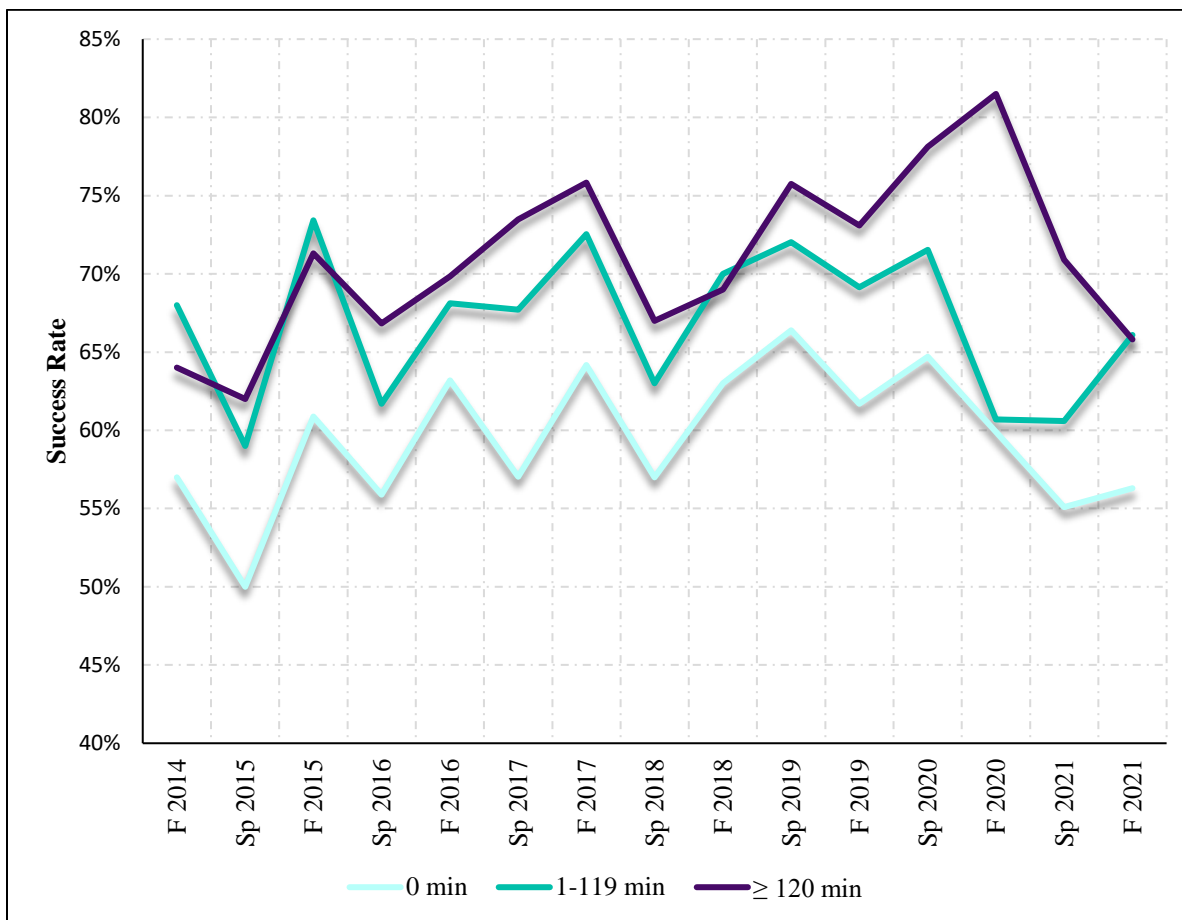


Figure 8. Success rates in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 based on time spent in the Math Center for fall 2014 through the present. Light aqua denotes 0 minutes spent in the center, dark aqua denotes 1-119 minutes spent, and purple denotes 120 or more minutes spent.

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 increase over time with some declines, typically associated with minimal sample sizes.

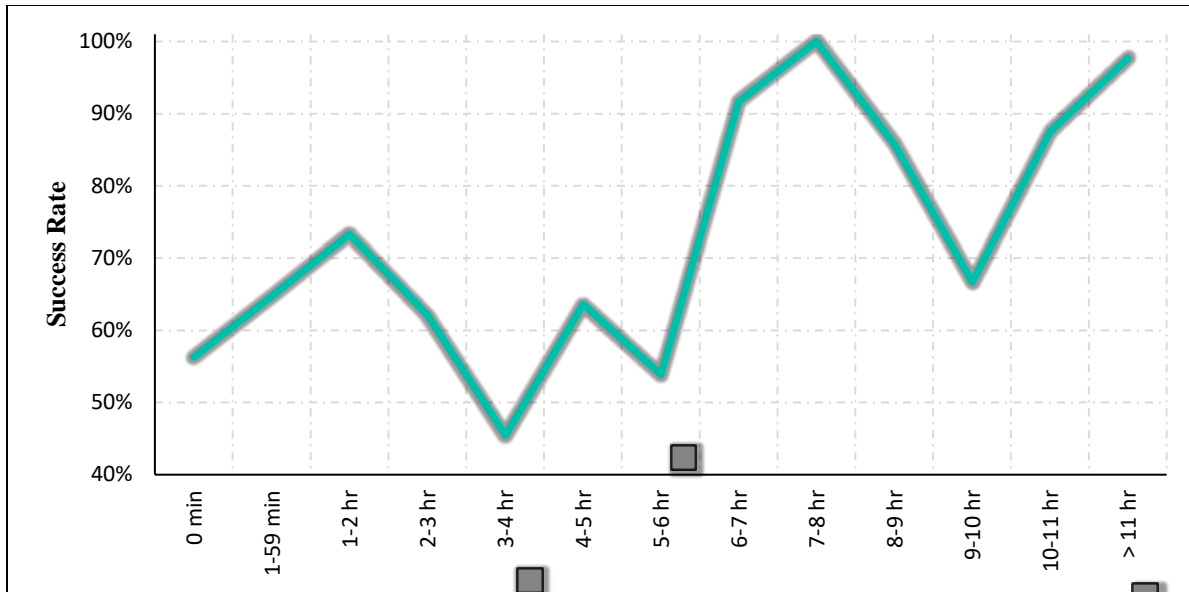


Figure 9. MAT 0057 / 1033 / 1100 / MAC 1105 success rate based on time spent in the Math Center per hour (up to 11+).

One area often looked at in course-level assessment is that of achievement or success rate based on enrollment type. This is done 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 with the smallest sample being those spending ≥ 120 minutes. Dual enrollment also exhibits an increase.

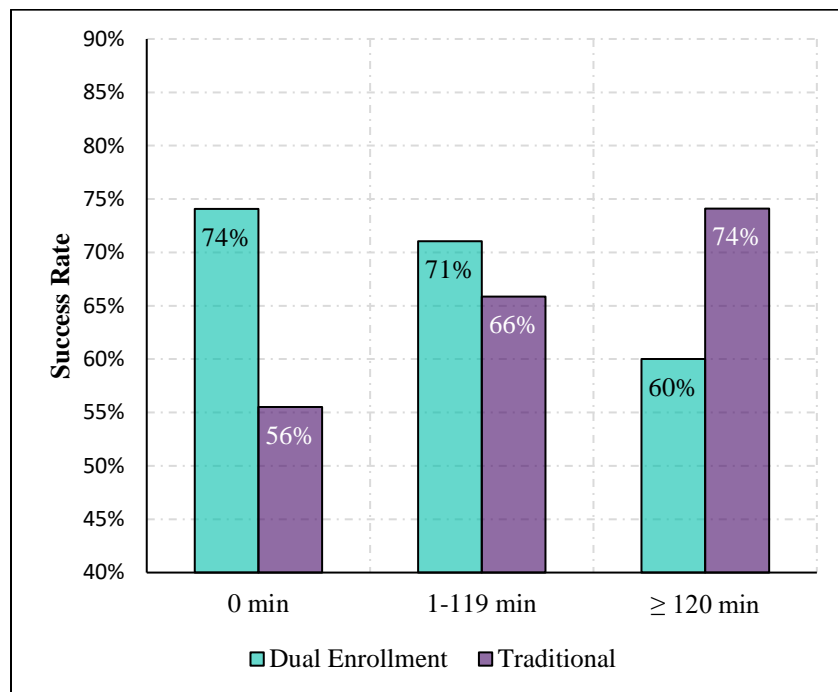


Figure 10. Comparison of MAT 0057, MAT 1033, MAT 1100, MAC 1105 and STA 2023 success rates by time spent in the Math Center disaggregated by student type.

4 CONCLUSIONS

FSW's Academic Support Center employed a series of assessments in order to support and strengthen the capabilities of each center. Leadership goals included gauging achievement in composition 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, 1% higher for 2.0-2.4 GPA, 2% lower for 2.5-2.9 GPA, 4% higher for 3.0-3.4 GPA, and 1% lower for greater than or equal to 3.5 GPA.
2. A Cochran-Mantel-Haenszel (CMH) found the results in #1 above does not exhibit a statistically significantly higher success rate than those who accrued fewer than two hours of consultation time.
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 2021 students increases by 11% over those that did not spend time in the Writing Center, compared with 16% in spring 2021, 23% in fall 2020, 7% in spring 2020, 14% in fall 2019, 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 15 terms included in the study, those spending ≥ 120 minutes in the Writing Center exhibit the highest success rates in 13 of 15; the remaining 2/15 are those spending 1-119 minutes.
5. In a study comparing success rates by time spent at the Writing Center using 1-hour increments, the data exhibits a steady increase in success rate with time spent with sharp drops as a result of limited sample size at higher time frames.
6. In a study comparing success rates based on time spent on at the Writing Center based on student type, both dual enrollment students and traditional students exhibit increases in success rates with increased time spent in the Writing.

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 4% lower for those with a GPA < 2.0, 16% higher for 2.0-2.4 GPA, 5% higher for 2.5-2.9 GPA, 2% lower for 3.0-3.4 GPA, and 7% lower at greater than 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 18% higher in MAT 0057, MAT 1033, MAT 1100, MAC 1105, or STA 2023

compared with 17% in spring 2021, 22% in fall 2020, 13% in spring 2020, 11% in fall 2019, 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 11 of 15 terms since fall 2014, success rate consistently increases with increased time spent in the Math Center. In the remaining terms (fall 2014, fall 2015, fall 2018, and fall 2021), success rate peaks for those spending 1-119 minutes at the center.
5. In a study comparing success rates by time spent at the Math Center using 1-hour increments, results exhibit a steady increase over time with some declines, typically associated with minimal sample sizes.
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. Dual enrollment also exhibits an increase.

5 REFERENCES

- Cooper, E. 2010. Tutoring center effectiveness: The effect of drop-in tutoring. *Journal of College Reading and Learning*, 40(2), 21-34.
- Hendriksen, S.I., Yang, L., Love, B., and Hall, M.C. 2005. Assessing academic support: the effects of tutoring on student learning outcomes. *Journal of College Reading and Learning*, 35(2), 56-65.
- McDonald, J.H. 2009. *Handbook of Biological Statistics* (2nd ed.). Sparky House Publishing, Baltimore, Maryland.
- Perin, D. 2004. Remediation beyond developmental education: The use of learning assistance centers to increase academic preparedness in community colleges. *Community College Journal of Research and Practice*, 28, 559-582.