Academic Support Centers Assessment Report
Fall 2018
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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 2018 which is to include the entire 2018-19 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 fall 2018, 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 2018-19 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 three of five student cohorts. Success rates for those receiving greater than two hours of consultation is 11% higher for those with a GPA < 2.0 (although sample size is limited at n=2), 2% higher for 2.0-2.4 GPA, 23% higher for 2.5-2.9 GPA, 11% higher for 3.0-3.4 GPA, and 5% 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)	89% (n=28)
GPA 2.0 – 2.4	100% (n=6)	61% (n=428)
GPA 2.5 – 2.9	85% (n=33)	69% (n=1050)
GPA 3.0 – 3.4	89% (n=46)	83% (n=1093)
GPA ≥ 3.5	96% (n=23)	92% (n=422)

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.
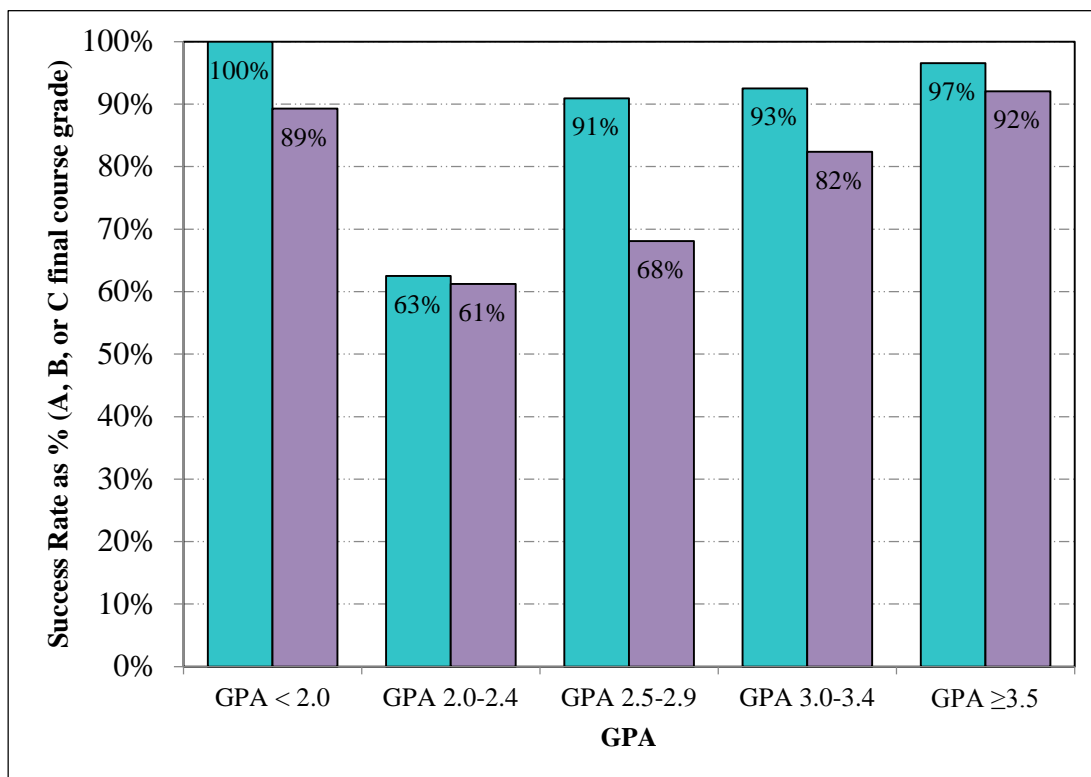

Figure 1. Success rates in ENC 1101 or ENC 1102 for those receiving greater than two hours consultation in the Writing Center (aqua) and those receiving less than two hours consultation (purple) based on GPA upon entering college.

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}=14.635, 1 d.f., P=0.00013). 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 2018 students increases by 9% over those that did not spend time in the Writing Center (down from 13% in spring 2018, 10% in fall 2017 and the same as spring 2017). These results are either on par with or exceed that of comparative research (Cooper, 2010; Hendriksen et al., 2005).
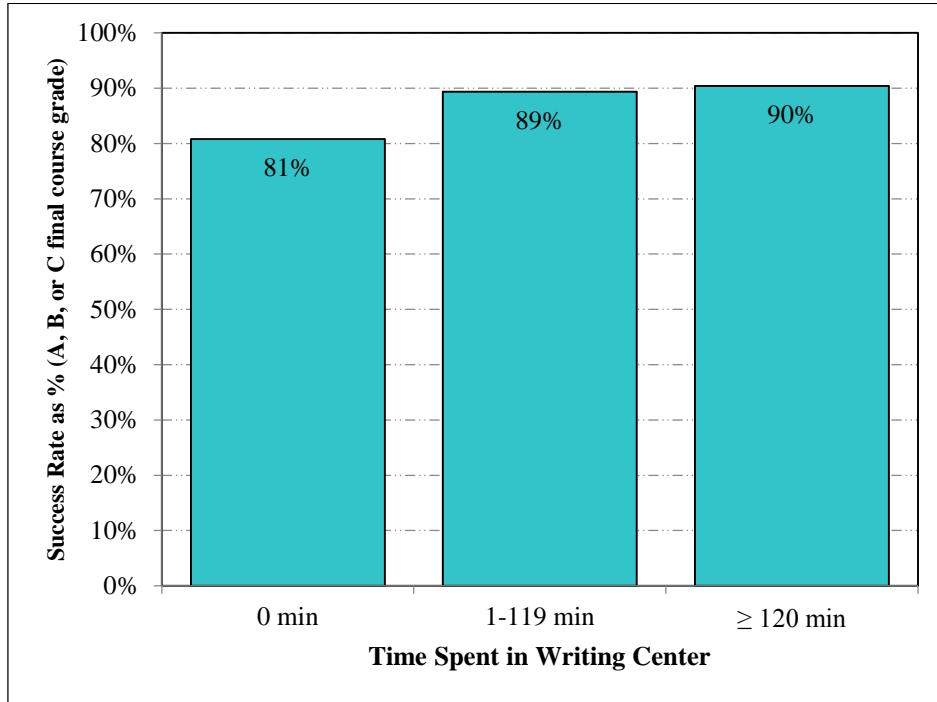

Figure 2. Success rates in ENC 1101 or ENC 1102 based on time spent in the Writing Center.

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 fall 2018. 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, in which success rate appears to plateau. In nine terms, those spending ≥ 120 minutes in the Writing Center exhibit the highest success rates in 7 of 9; the remaining 2/9 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.
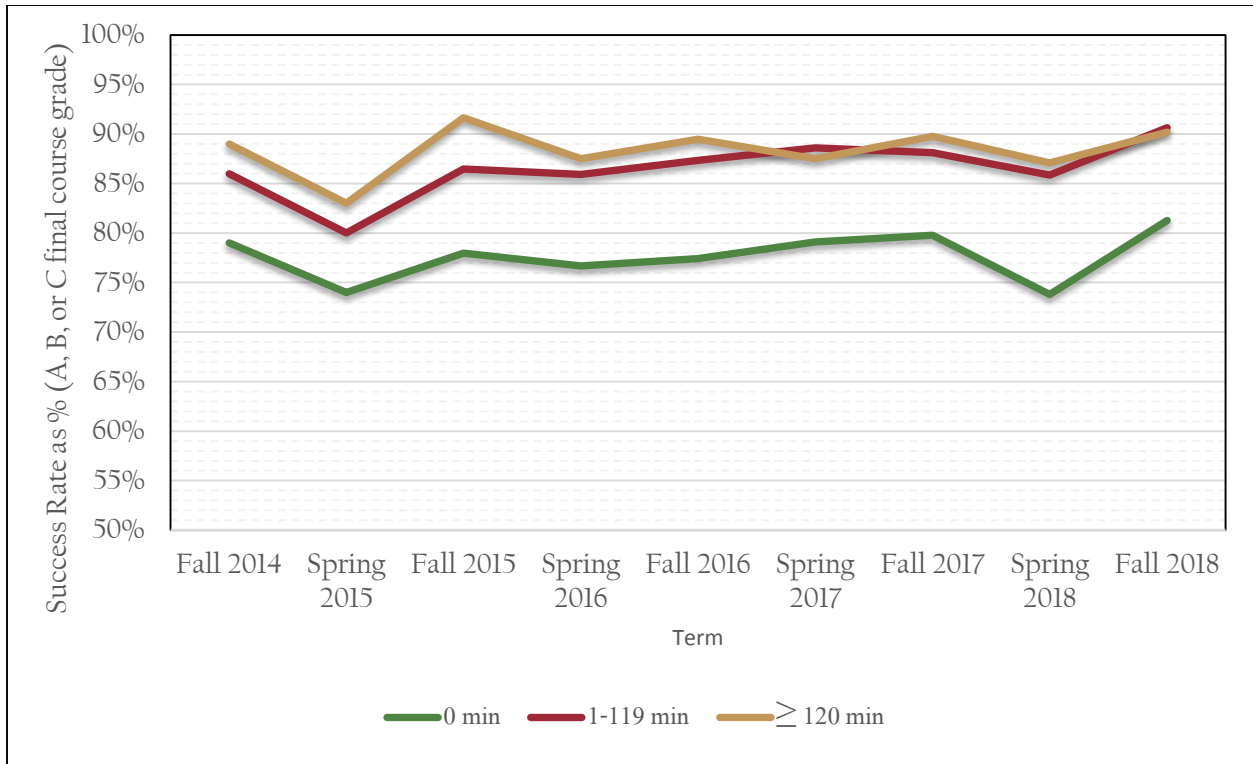
Figure 3. Success rates in ENC 1101 or ENC 1102 based on time spent in the Writing Center for fall 2014 through fall 2018. Purple denotes 0 minutes spent in the center, beige denotes 1-119 minutes spent, and green denotes 120 or more minutes spent.

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 (81% up to 91%). With the exception of the 9-10 hour bin, success rates remain in the mid-to-upper 80% range or higher.
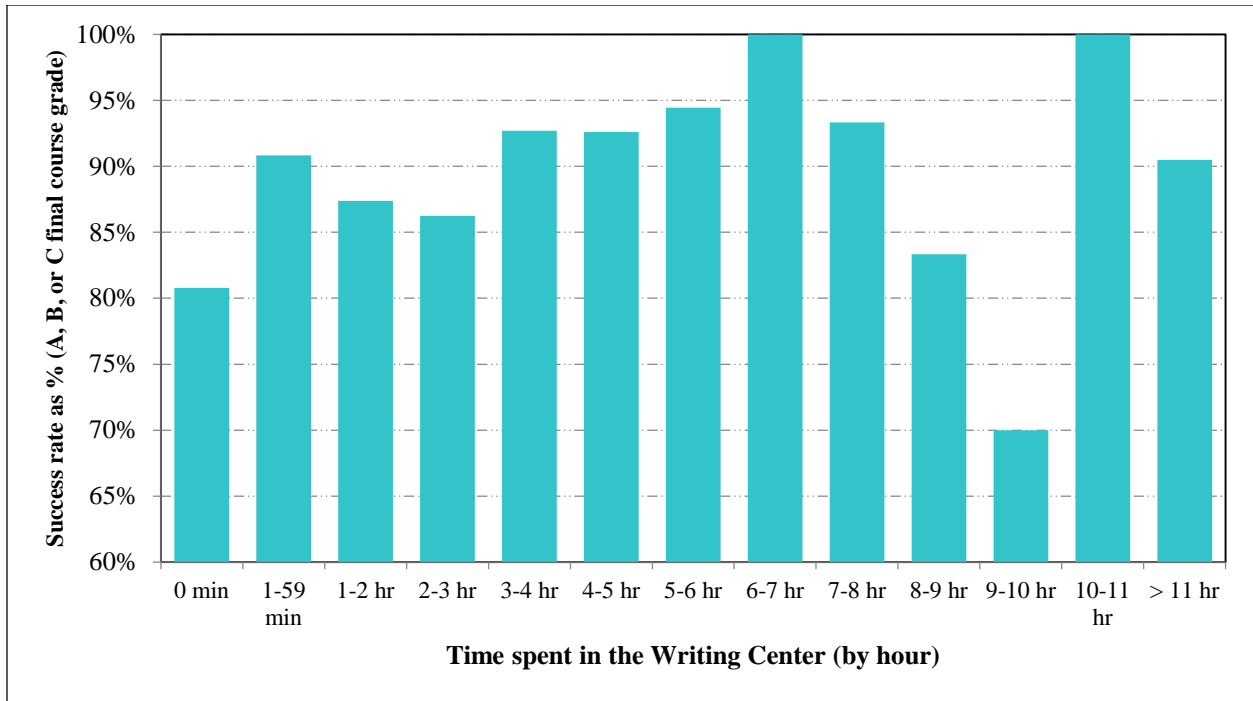
Figure 4. ENC 1101/1102 success rate based on time spent in the Writing Center per hour (up to 11+).

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 94%). The dual enrollment cohort exhibits improvement of 6% for time spent in the Writing Center. The traditional cohort exhibits improvement of 16% for time spent in the Writing Center.
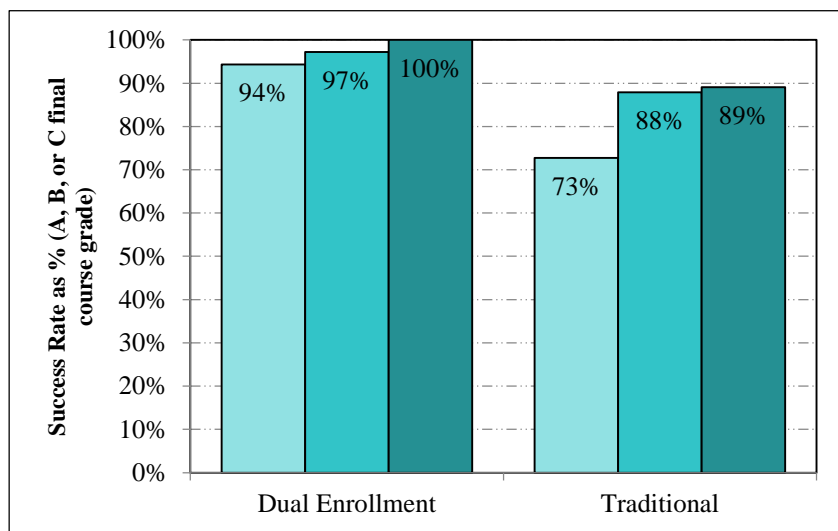

Figure 5. Comparison of ENC 1101/1102 success rates by time spent in the Writing Center disaggregated by student type. Light aqua denotes 0 min. spent in the center, aqua denotes 1-119 min. spent, and dark aqua denotes 120 or more min. spent.

3   MATH CENTER

In fall 2018, 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 three of five cases. Success rates for those receiving greater than two hours of consultation is 10% higher for those with a GPA < 2.0, 8% higher for 2.0-2.4 GPA, 12% higher for 2.5-2.9 GPA, 6% higher for 3.0-3.4 GPA, and 13% 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 ≥ 2hr	n < 2hr
Success Rate 10% higher for n ≥ 2hr		
GPA < 2.0	50% (n=2)	40% (n=15)
GPA 2.0 – 2.4	46% (n=41)	38% (n=304)
GPA 2.5 – 2.9	55% (n=86)	43% (n=774)
GPA 3.0 – 3.4	72% (n=86)	66% (n=861)
GPA ≥ 3.5	95% (n=38)	82% (n=294)

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}=8.847, 1 d.f., P=0.003). 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.
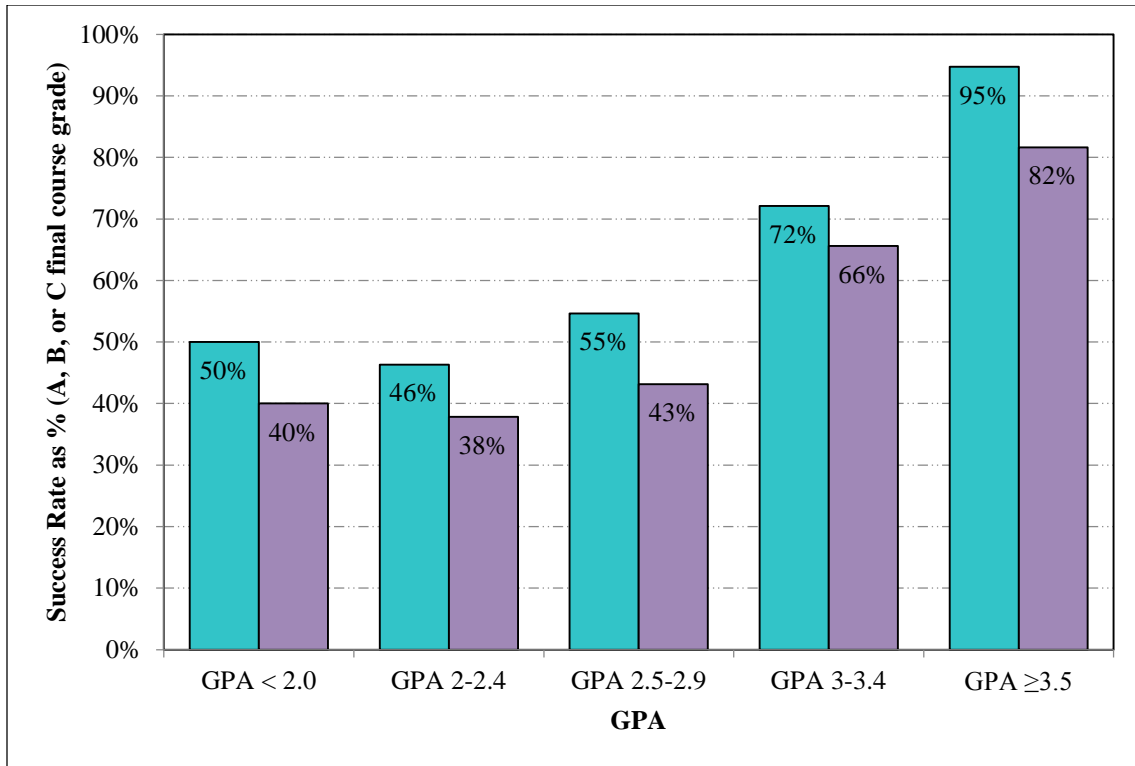
Figure 6. Success rates in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 for those receiving greater than two hours consultation in the Math Center (aqua) and those receiving less than two hours consultation (purple) based on GPA upon entering college.

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 6% higher in MAT 0057, MAT 1033, MAT 1100, or MAC 1105, down from 8% in spring 2018, 12% in fall 2017, and 16% in spring 2017.
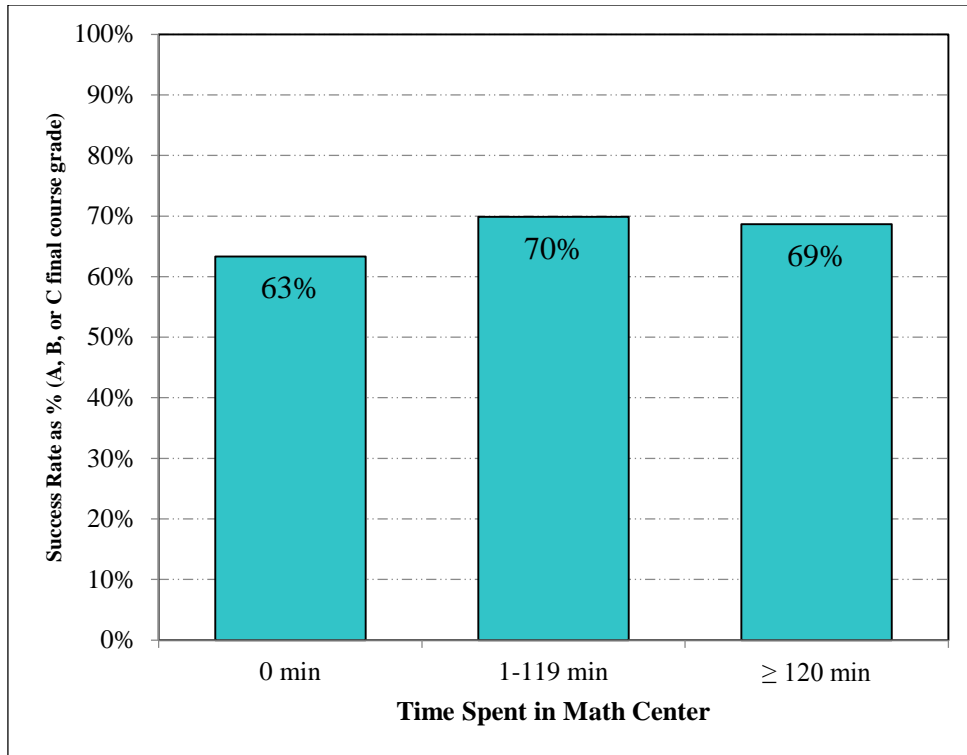
Figure 7. Success rates in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 based on time spent in the Math Center.

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 2018. 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 six of nine 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.
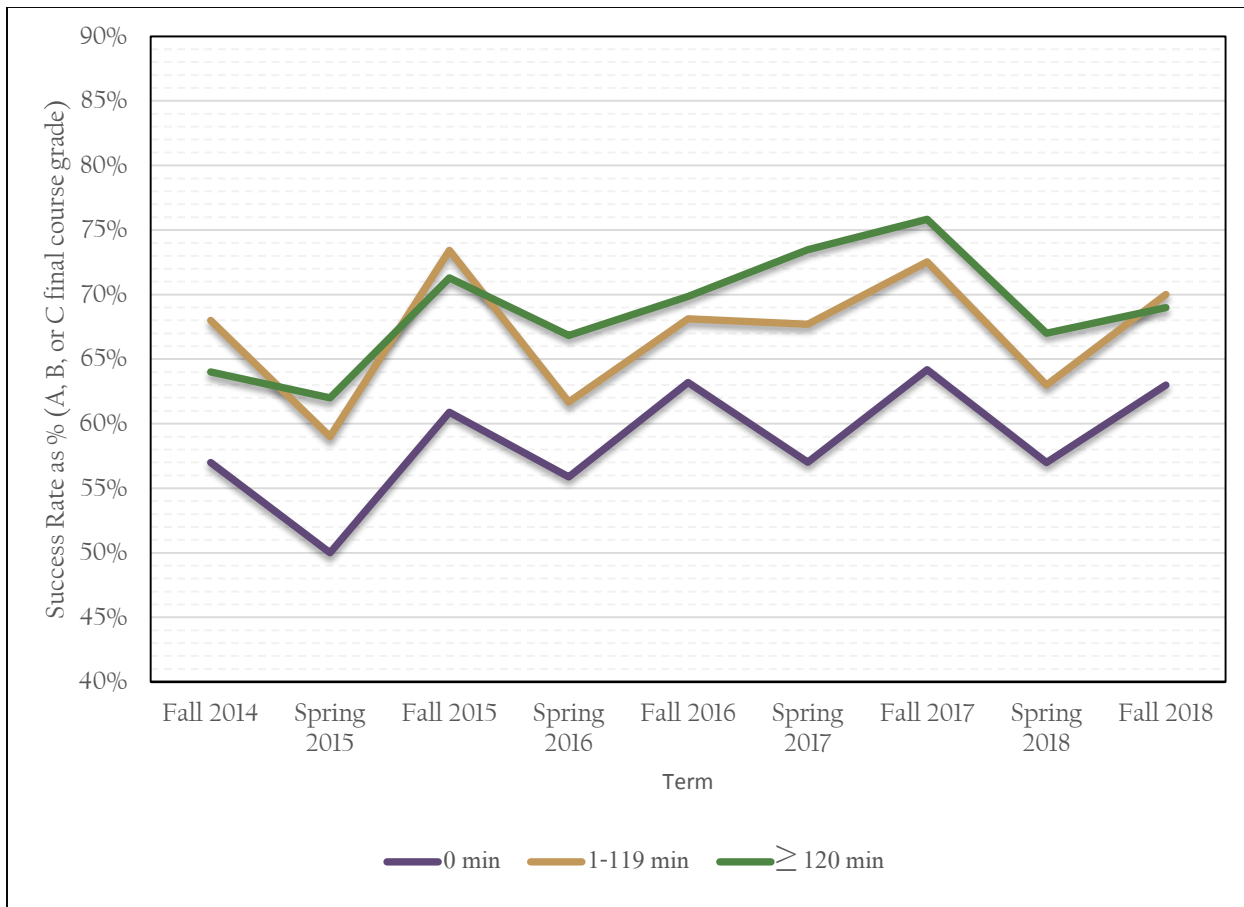
Figure 8. Success rates in MAT 0057, MAT 1033, MAT 1100, or MAC 1105 based on time spent in the Math Center for fall 2014 through fall 2018. Purple denotes 0 minutes spent in the center, beige denotes 1-119 minutes spent, and green denotes 120 or more minutes spent.

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 63%. Success rates are consistently above 63% for all but three cases (2-3 hr, 8-9 hr, and 10-11 hr).
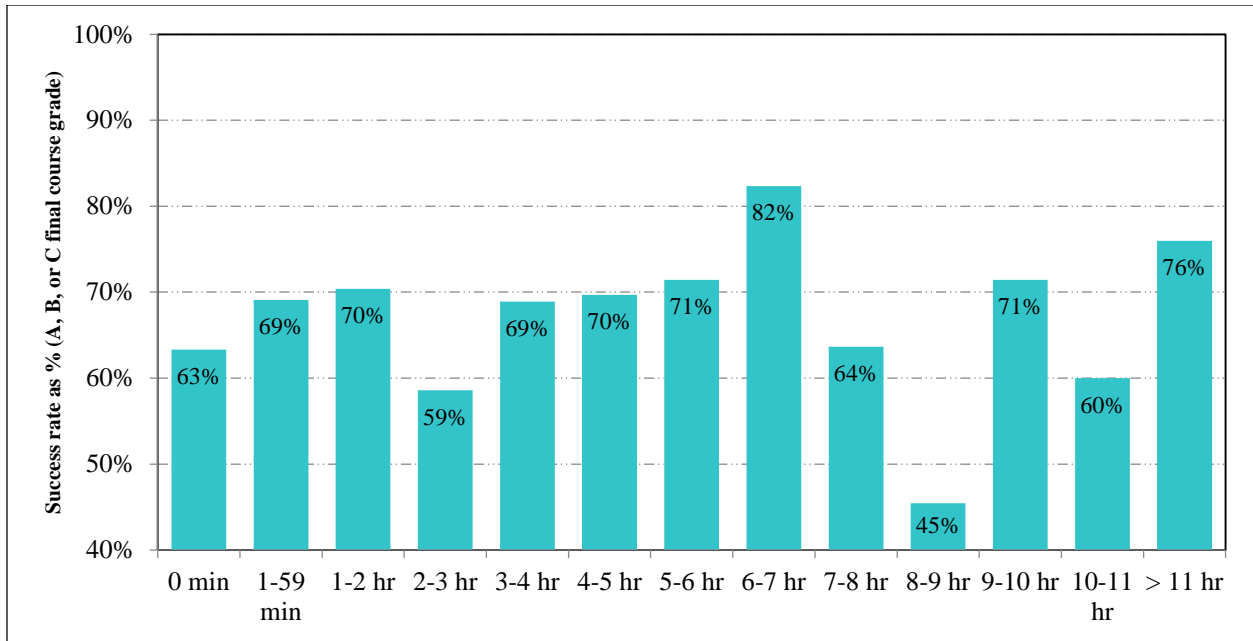
Figure 9. MAT 0057 / 1033 / 1100 / MAC 1105 success rate based on time spent in the Math Center per hour (up to 11+).

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 (55% at 0 minutes, 65% at 1-119 minutes, and 68% at ≥ 120 minutes).
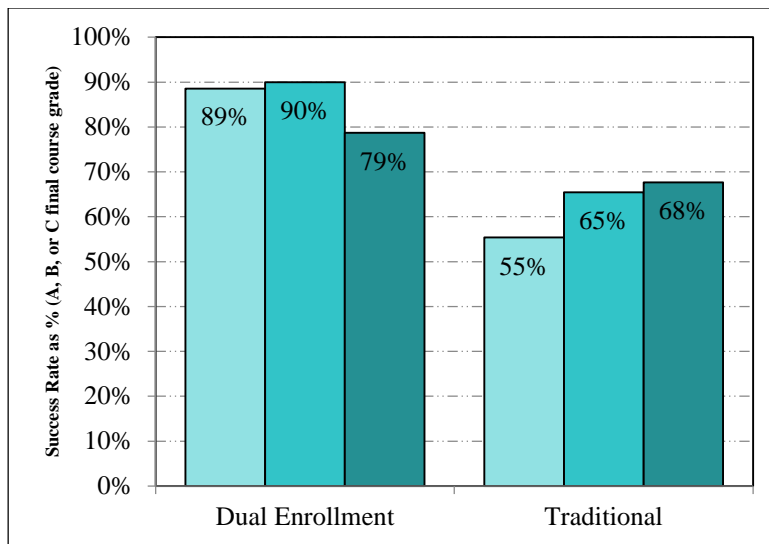

Figure 10. Comparison of MAT 0057, MAT 1033, MAT 1100, and MAC 1105 success rates by time spent in the Math Center disaggregated by student type. Light aqua denotes 0 minutes spent in the center, dark aqua denotes 1-119 minutes spent, and the darkest aqua denotes 120 or more minutes spent.

4 ORAL COMMUNICATIONS CENTER

In fall 2018, 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 is limited in interpretation due to small sample size (n=49 over the five GPA bins for those spending two or more hours at the center so no analysis was completed). Figure 11 displays the results of this analysis, although no statistical tests are completed due to limited sample size.
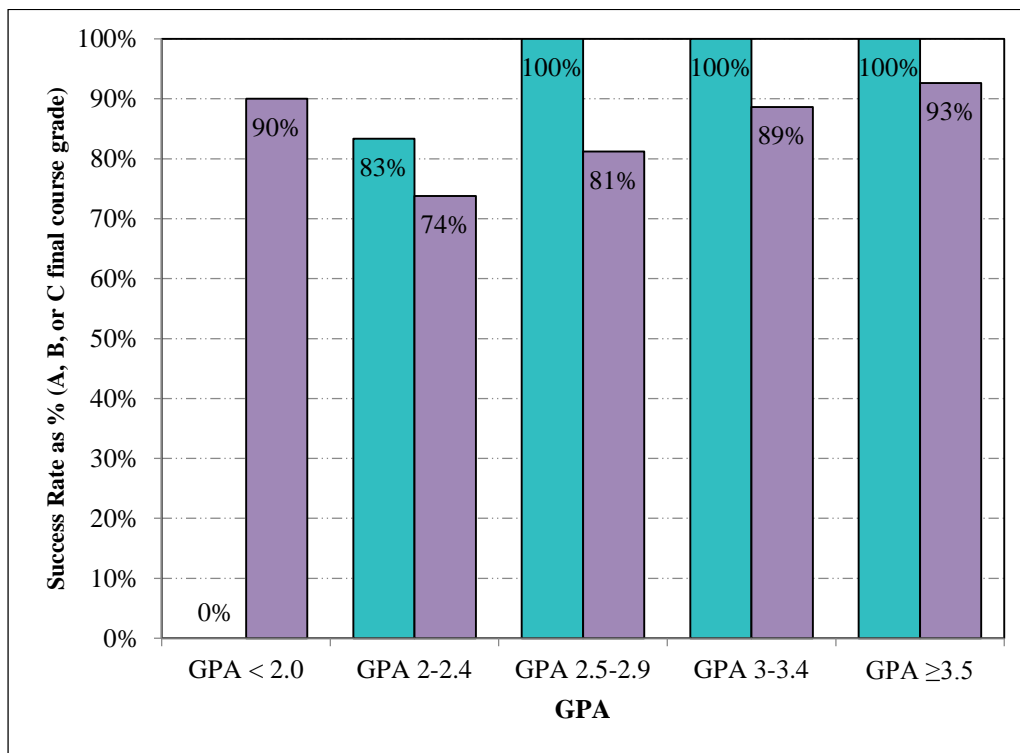

*Figure 11. Success rates in SPC 1017 and SPC 2608 for those receiving greater than two hours of consultation in the Oral Communications Center (aqua) and those receiving less than two hours consultation (purple) based on GPA upon entering college. *Sample size for the five scoring bins, GPA < 2.0 through GPA ≥ 3.5, is n=0, n=6, n=16, n=14, and n=13, respectively.*

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 12. For students spending two or more hours in the Oral Communications Center (n=62), the time minimum used in the definition of Outcome #1 & #2 above, success rate is 13% higher in SPC 1017 and SPC 2608 than those spending no time at the center.
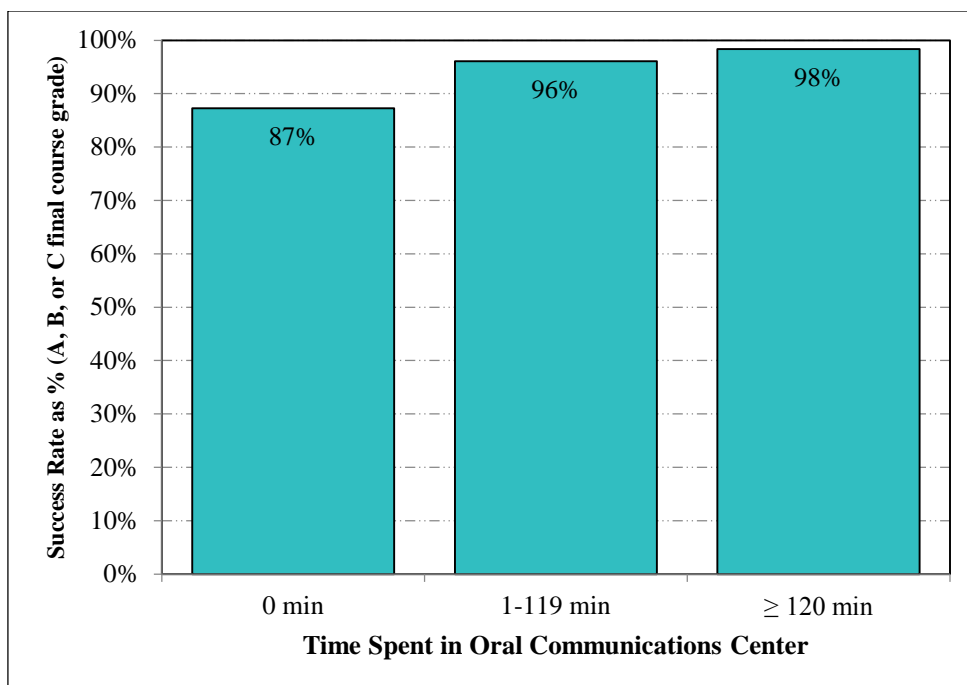
Figure 12. Success rates in SPC 1017 and SPC 2608 based on time spent in the Oral Communications Center. 0 min: n=1272, 1-119 min: n=77, ≥ 120 min: n=62.

5   PEER TUTORING CENTER

In fall 2018, 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 2018-19 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 not able to be measured due to low sample size. 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. It may be more fruitful to define the analysis based on two or even one peer tutoring appointment to improve sample size. Success rates comparisons interpretation is limited. However, results are shown in Table 3 and Figure 13.

	n ≥ 3 appts	n < 3 appts
Success Rate 10% higher for n ≥ 3 appointments		
GPA < 2.0	No data	11% (n=9)
GPA 2.0 – 2.4	50% (n=4)	58% (n=139)
GPA 2.5 – 2.9	100% (n=6)	51% (n=453)
GPA 3.0 – 3.4	82% (n=11)	67% (n=637)
GPA ≥ 3.5	75% (n=4)	87% (n=319)

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.
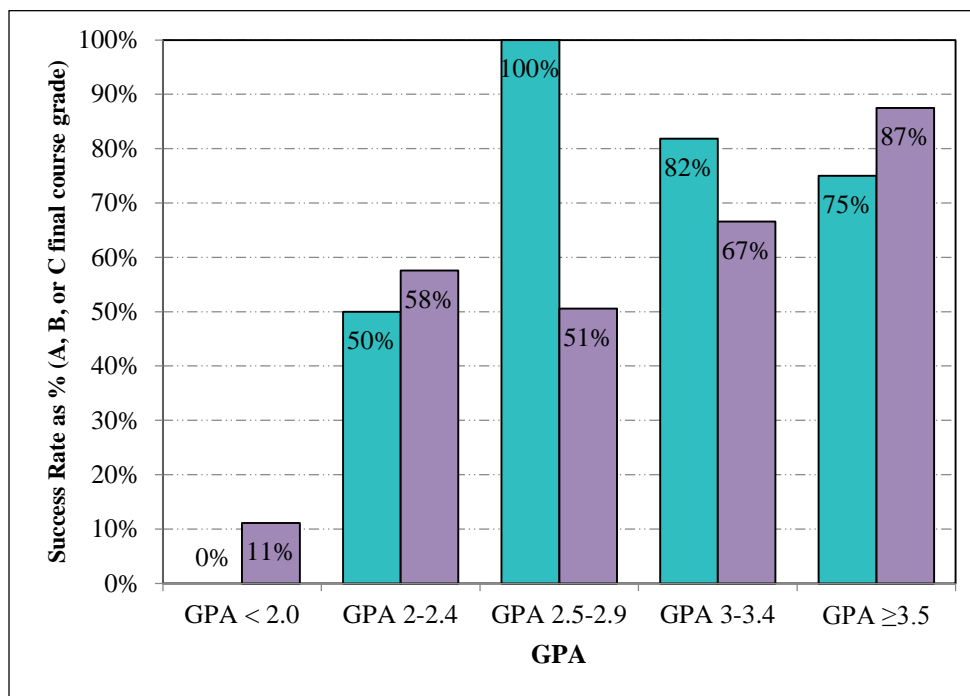

Figure 13. Success rates in MAT 1033, MAC 1105, BIO 1010 or CHEM 2025 for those scheduling 3 or more peer tutoring appointments (aqua) and those scheduling less than 3 (purple) based on GPA upon entering college.

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 14. For students with 3 or more scheduled appointments, the definition of Outcome #3, success rate is higher (83%) than those with no appointments (73%), and so the goal is met.
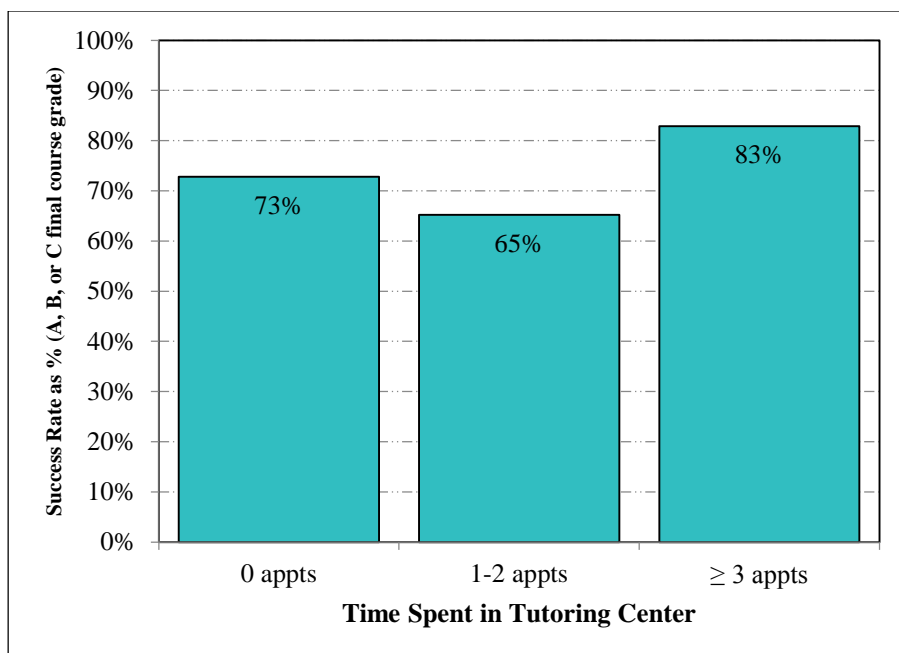
Figure 14. Success rates in MAT 1033, MAC 1105, BIO 1010 or CHEM 2025 based on number of scheduled peer tutoring appointments.

6 TUTOR.COM

As tutor.com becomes a more expansive tool at FSW, an added direction for assessment is to compile a set of baseline attributes for usage. In the graphs below are an initial suite of attributes for tutor.com usage based on varying cohorts at the College. In Figure 15, for example, approximately 9% of Fall 2018 enrollment is represented by those with a GPA of less than 2.0. By comparison, approximately 36% of tutor.com usage is represented by that same cohort. In short, it is clear from the bar graph component that those with a GPA less than 2.0 frequent tutor.com more often than any group. But the comparison with total enrollment also connotes that this is significant, since that is vastly different than the enrollment representation. By contrast, if those with GPA less than 2.0 was around 35%, a heavy usage of tutor.com by that group would not be of such impact.
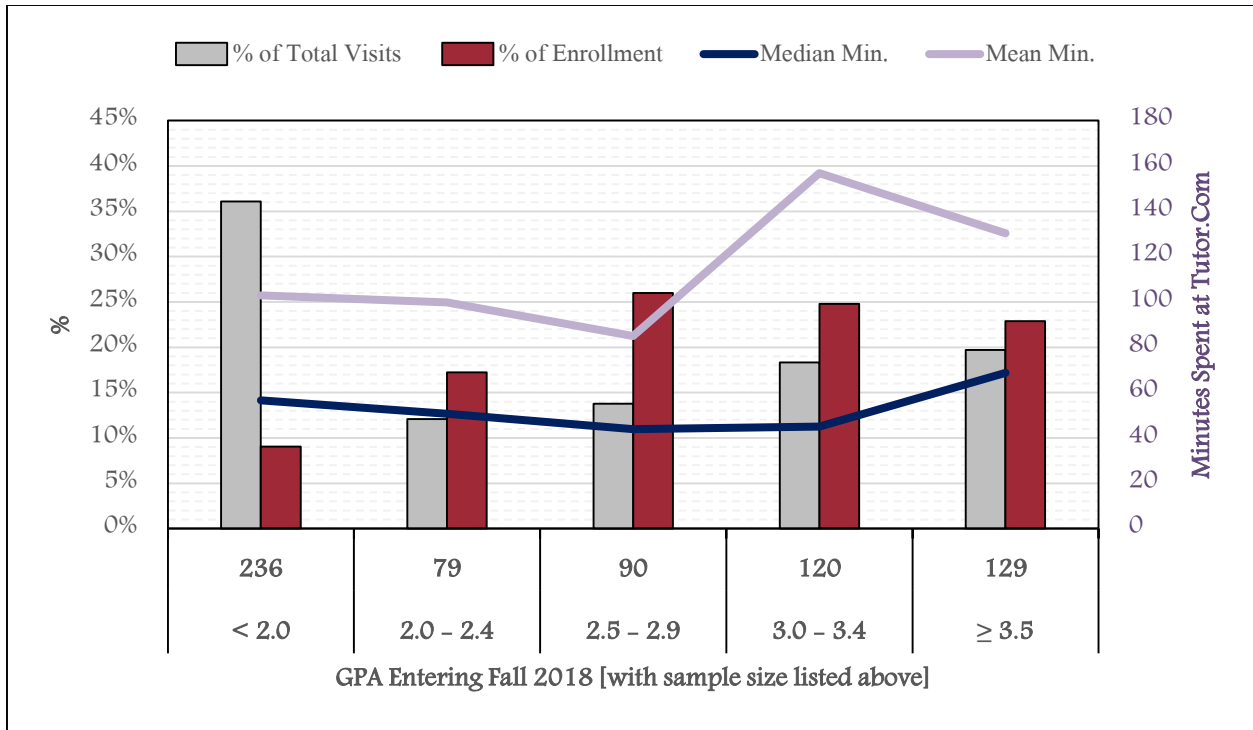
Figure 15. Comparison of the percentage of the total number of visits to tutor.com with the representation of that cohort at FSW along with median and mean number of minutes spent at tutor.com. Substantial difference in the representation of a cohort in the "% of Total Visits" compared with "% of Enrollment" can be viewed as an over/under usage of tutor.com by that cohort (e.g., 50% of enrollment are A, but only 10% of usage is represented by A, thus is preferentially under-used by A).
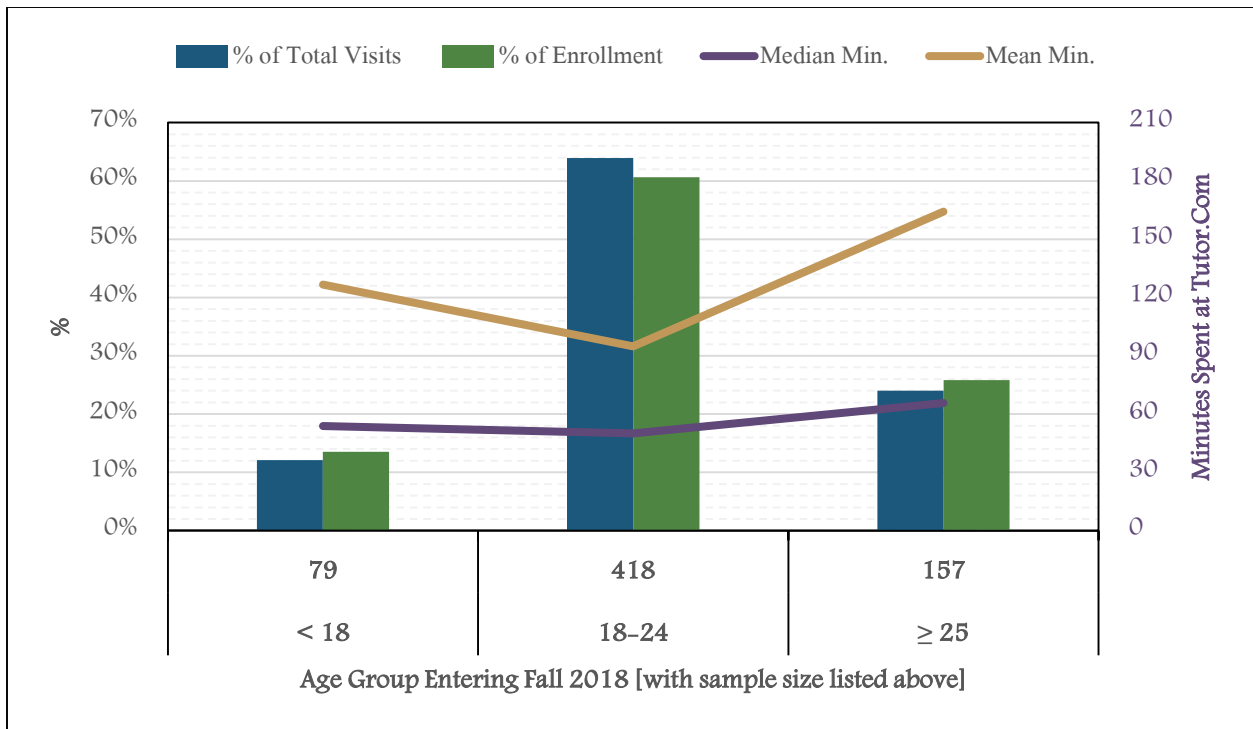

Figure 16. Comparison of the percentage of the total number of visits to tutor.com with the representation of that cohort at FSW along with median and mean number of minutes spent at tutor.com.
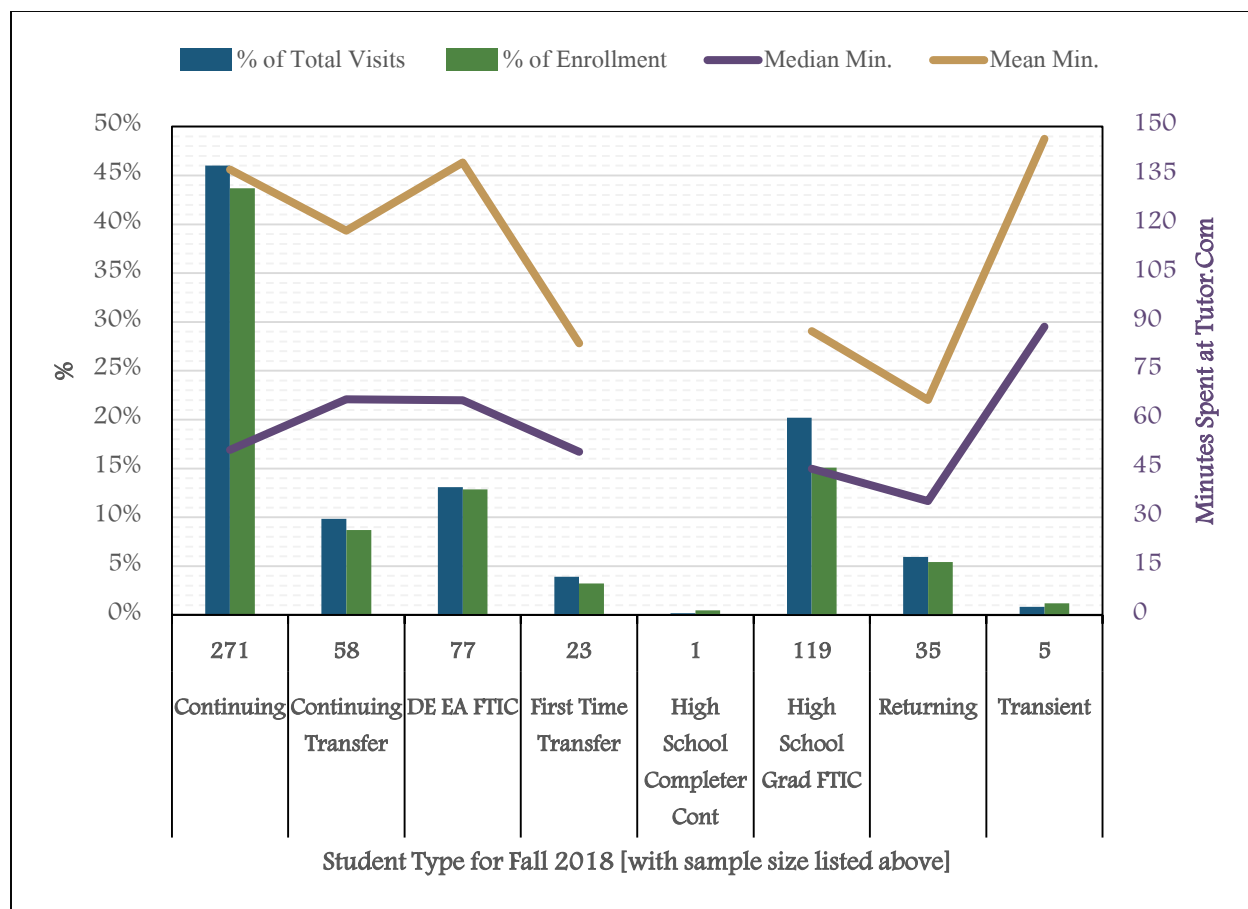
Figure 17. Comparison of the percentage of the total number of visits to tutor.com with the representation of that cohort at FSW along with median and mean number of minutes spent at tutor.com.

7 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 in three of five student cohorts. Success rates for those receiving greater than two hours of consultation is 11% higher for those with a GPA < 2.0 (although sample size is limited at n=2), 2% higher for 2.0-2.4 GPA, 23% higher for 2.5-2.9 GPA, 11% higher for 3.0-3.4 GPA, and 5% 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 2018 students increases by 9% over those that did not spend time in the Writing Center (down from 13% in spring 2018, 10% in fall 2017 and the same as 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, in which success rate appears to plateau. In nine terms, those spending ≥ 120 minutes in the Writing Center exhibit the highest success rates in 7 of 9; the remaining 2/9 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 (81% up to 91%). With the exception of the 9-10 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 dual enrollment cohort exhibits improvement of 6% for time spent in the Writing Center. The traditional cohort exhibits improvement of 16% 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 three of five cases. Success rates for those receiving greater than two hours of consultation is 10% higher for those with a GPA < 2.0, 8% higher for 2.0-2.4 GPA, 12% higher for 2.5-2.9 GPA, 6% higher for 3.0-3.4 GPA, and 13% 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 Math Center, success rate is approximately 6% higher in MAT 0057, MAT 1033, MAT 1100, or MAC 1105, down from 8% in spring 2018, 12% in fall 2017, and 16% in spring 2017.
4. In a longitudinal study comparing terms since fall 2014, in six of nine 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 63%. Success rates are consistently above 63% for all but three cases (2-3 hr, 8-9 hr, and 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 (55% at 0 minutes, 65% at 1-119 minutes, and 68% at ≥ 120 minutes).

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

1. Success rates comparisons based on GPA is limited in interpretation due to small sample size (n=49 over the five GPA bins for those spending two or more hours at the center 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 13% 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 not able to be measured due to low sample size. 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. It may be more fruitful to define the analysis based on two or even one peer tutoring appointment to improve sample size. Success rates comparisons interpretation is limited.
2. In a comparison of success rates by increased number of peer tutoring appointments, success rate is higher (83%) than those with no appointments (73%), and so the goal is met.

A drill-down of Tutor.com results are as follows:

1. As tutor.com becomes a more expansive tool at FSW, an added direction for assessment is to compile a set of baseline attributes for usage. Approximately 9% of Fall 2018 enrollment is represented by those with a GPA of less than 2.0. By comparison, approximately 36% of tutor.com usage is represented by that same cohort.
2. It is clear that those with a GPA less than 2.0 frequent tutor.com more often than any group. But the comparison with total enrollment also connotes that this is significant, since that is vastly different than the enrollment representation. By contrast, if those with GPA less than 2.0 was around 35%, a heavy usage of tutor.com by that group would not be of such impact.

8 REFERENCES

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