



## **Institutional Effectiveness, Research, & Planning Discipline Specific Tutoring Report, 2015-16**

March 7, 2017

This report examines the relationship between visiting discipline specific tutoring at the Student Success Center and academic outcomes for Fall 2015, Spring 2016, and Fall 2016. The report also compares academic outcomes between students who chose to visit the success center and those who did not visit.

### **EXECUTIVE SUMMARY**

- Students were most likely to come to the success center for help with Sign Language, Chemistry, and Physics.
- Students who visited the student success center had higher levels of success, retention, and persistence than students who did not visit the center.
- Female and male students who visited the success center had similar levels of success, retention, and persistence.
- There were differences in student success and persistence by student ethnicity; however, there were similar levels of retention across all student ethnicities.

### **Details of the Data**

A total of 1366 students visited the Student Success Center for discipline specific tutoring during Fall 2015, Spring 2016, and Fall 2016. The students visited the center approximately 6,000 times (Table 1). Students were most likely to visit the center seeking assistance with Sign Language, Chemistry, and Physics (Table 1). Tables 2 and 3 contain additional information about the average number of visits and the average amount of time spent in the center. The analysis focuses on the success, retention, and persistence outcomes of students who visited the Student Success Center during the relevant time period. We also compared outcomes for students who received tutoring, to those of students enrolled in the same course sections who did not visit the Student Success Center.

*Table 1. Number of Visits to the Student Success Center by Subject and Term.*

| Discipline           | Term      |             |           | Total |
|----------------------|-----------|-------------|-----------|-------|
|                      | Fall 2015 | Spring 2016 | Fall 2016 |       |
| Anatomy & Physiology | 176       | 147         | 132       | 455   |
| Anthropology         | 15        | 19          | —         | 34    |
| Biology              | 179       | 331         | —         | 510   |
| Chemistry            | 518       | 543         | 343       | 1404  |
| Chinese              | 12        | 4           | —         | 16    |
| CIS                  | 227       | 298         | 37        | 562   |
| Earth Science        | 53        | 5           | 166       | 224   |
| Economics            | 14        | —           | —         | 14    |
| German               | 10        | 4           | —         | 14    |
| Japanese             | 8         | —           | —         | 8     |
| Microbiology         | 3         | —           | —         | 3     |
| Music                | 74        | 11          | 7         | 92    |
| Physics              | 174       | 402         | 124       | 700   |
| Psychology           | 84        | 86          | 9         | 179   |
| Sign Language        | 1100      | 185         | 332       | 1617  |
| Spanish              | 73        | 67          | 0         | 140   |
| Total                | 2706      | 2116        | 1150      | 5972  |

*Table 2. Mean and Standard Deviation for Number of Visits to the Student Success Center by Subject and Term.*

| Discipline           | Term        |       |             |       |             |      |
|----------------------|-------------|-------|-------------|-------|-------------|------|
|                      | Fall 2015   |       | Spring 2016 |       | Fall 2016   |      |
|                      | Mean Visits | SD    | Mean Visits | SD    | Mean Visits | SD   |
| Anatomy & Physiology | 5.76        | 4.16  | 5.16        | 3.85  | 4.98        | 3.52 |
| Anthropology         | 4.60        | 2.41  | 2.37        | 1.77  | —           | —    |
| Biology              | 14.27       | 12.29 | 18.59       | 17.96 | —           | —    |
| Chemistry            | 11.32       | 9.58  | 12.28       | 8.93  | 8.80        | 6.21 |
| Chinese              | 1.67        | 0.49  | 2.00        | 0.00  | —           | —    |
| CIS                  | 5.65        | 3.78  | 6.89        | 4.86  | 3.38        | 2.64 |
| Earth Science        | 13.57       | 7.89  | 1.40        | 0.55  | 4.02        | 4.72 |
| Economics            | 2.86        | 1.41  | —           | —     | —           | —    |
| German               | 2.00        | 0.82  | 2.00        | 0.00  | —           | —    |
| Japanese             | 1.25        | 0.46  | —           | —     | —           | —    |
| Microbiology         | 1.00        | 0.00  | —           | —     | —           | —    |
| Music                | 6.14        | 3.43  | 2.27        | 1.42  | 2.14        | 0.90 |
| Physics              | 7.07        | 4.38  | 10.30       | 8.70  | 10.45       | 8.65 |
| Psychology           | 3.88        | 2.36  | 3.81        | 2.65  | 1.22        | 0.44 |
| Sign Language        | 9.90        | 9.00  | 5.29        | 3.76  | 6.64        | 5.47 |
| Spanish              | 1.60        | 0.91  | 14.91       | 13.76 | —           | —    |

*Table 3. Mean and Standard Deviation for Number of Minutes Spent in the Student Success Center by Subject and Term.*

| Discipline           | Term         |       |              |       |              |         |
|----------------------|--------------|-------|--------------|-------|--------------|---------|
|                      | Fall 2015    |       | Spring 2016  |       | Fall 2016    |         |
|                      | Mean Minutes | SD    | Mean Minutes | SD    | Mean Minutes | SD      |
| Anatomy & Physiology | 69.10        | 66.48 | 72.23        | 72.50 | 129.24       | 82.01   |
| Anthropology         | 38.22        | 47.97 | 62.84        | 46.50 | —            | —       |
| Biology              | 51.32        | 68.71 | 74.42        | 78.94 |              |         |
| Chemistry            | 56.17        | 47.15 | 58.38        | 65.94 | 87.33        | 60.79   |
| Chinese              | 79.08        | 61.79 | 49.45        | 30.75 | —            | —       |
| CIS                  | 61.78        | 48.26 | 89.79        | 74.90 | 40.74        | 42.13   |
| Earth Science        | 54.16        | 38.89 | 64.59        | 65.34 | 59.45        | 89.15   |
| Economics            | 33.53        | 40.47 | —            | —     | —            | —       |
| German               | 49.23        | 35.44 | 48.51        | 62.61 | —            | —       |
| Japanese             | 61.62        | 45.99 | —            |       |              |         |
| Microbiology         | 0.60         | 0.00  | —            | —     | —            | —       |
| Music                | 52.12        | 28.49 | 39.72        | 38.43 | 68.57        | 22.68   |
| Physics              | 65.72        | 63.44 | 74.44        | 64.69 | 617.73       | 4131.73 |
| Psychology           | 84.56        | 80.58 | 67.17        | 63.79 | 34.00        | 34.56   |
| Sign Language        | 84.00        | 50.81 | 78.72        | 58.12 | 66.76        | 48.38   |
| Spanish              | 84.48        | 90.85 | 75.58        | 69.05 | —            | —       |

### Comparing Outcomes between the Tutoring and No Tutoring Groups

Comparing success, retention, and persistence rates between students who visited the Student Success Center and students who did not visit the center.

#### Success Rates

Success rate was defined as the percentage of students earning a grade of A, B, C, or P (passing). Students earning a grade of W, D, F, FW, or NP were considered not passing. Table 4 shows the number of enrollments and the success rate in each discipline across the three terms. Students who visited the student success center had higher success rates in each discipline than their counterparts who did not visit. A chi-square test showed that the overall difference in success rates was statistically significant,  $\chi^2(1) = 143.88, p < .001$ .

Table 4. Success Rates for No Tutoring and Tutoring Groups.

| Discipline           | No Tutoring    |              | Tutoring       |              |
|----------------------|----------------|--------------|----------------|--------------|
|                      | Total Enrolled | Success Rate | Total Enrolled | Success Rate |
| Anatomy & Physiology | 1279           | 61%          | 128            | 74%          |
| Anthropology         | 781            | 62%          | 22             | 68%          |
| Biology              | 1214           | 67%          | 61             | 79%          |
| Chemistry            | 1636           | 63%          | 325            | 80%          |
| Chinese              | 115            | 72%          | 9              | 89%          |
| CIS                  | 1702           | 57%          | 192            | 83%          |
| Earth Science        | 139            | 87%          | 6              | 100%         |
| Economics            | 174            | 61%          | 7              | 71%          |
| German               | 63             | 67%          | 8              | 88%          |
| Japanese             | 88             | 66%          | 3              | 100%         |
| Microbiology         | 86             | 65%          | 3              | 100%         |
| Music                | 944            | 79%          | 77             | 91%          |
| Physics              | 765            | 64%          | 157            | 73%          |
| Psychology           | 2565           | 76%          | 117            | 91%          |
| Sign Language        | 811            | 65%          | 412            | 84%          |
| Spanish              | 1010           | 75%          | 72             | 83%          |

#### Retention Rates

Retention rate was defined as the percentage of students that earned a grade in the course (A, B, C, D, F, P, or NP) and did not withdraw. Table 5 shows the number of enrollments and the retention rate in each discipline across the three terms. Students who visited the student success center had higher retention rates in each discipline than their counterparts who did not visit. A chi-square test showed that the overall difference in retention rates was statistically significant,  $\chi^2(1) = 87.14, p < .001$ .

*Table 5. Retention Rates for No Tutoring and Tutoring Groups.*

| Discipline           | No Tutoring  |                | Tutoring     |                |
|----------------------|--------------|----------------|--------------|----------------|
|                      | Total Number | Retention Rate | Total Number | Retention Rate |
| Anatomy & Physiology | 1279         | 75%            | 128          | 86%            |
| Anthropology         | 781          | 85%            | 22           | 95%            |
| Biology              | 1214         | 83%            | 61           | 84%            |
| Chemistry            | 1636         | 76%            | 325          | 89%            |
| Chinese              | 115          | 81%            | 9            | 100%           |
| CIS                  | 1702         | 93%            | 192          | 93%            |
| Earth Science        | 139          | 89%            | 6            | 100%           |
| Economics            | 174          | 78%            | 7            | 86%            |
| German               | 63           | 71%            | 8            | 88%            |
| Japanese             | 88           | 77%            | 3            | 100%           |
| Microbiology         | 86           | 76%            | 3            | 100%           |
| Music                | 944          | 88%            | 77           | 95%            |
| Physics              | 765          | 77%            | 157          | 78%            |
| Psychology           | 2565         | 90%            | 117          | 90%            |
| Sign Language        | 811          | 79%            | 412          | 94%            |
| Spanish              | 1010         | 86%            | 72           | 90%            |

#### **Persistence Rates**

Persistence rate was defined as the percentage of students who both enrolled during Fall 2015, Spring 2016, or Fall 2016 and enrolled in at least one unit during the immediately subsequent term: Fall 2015 to Spring 2016; Spring 2016 to Fall 2016; or Fall 2016 to Spring 2017. Table 6 shows the number of enrollments and the persistence rate in each discipline across the three terms. Students who visited the student success center had higher persistence rates in most disciplines than their counterparts who did not use tutoring. A chi-square test showed that the overall difference in retention rates was statistically significant,  $\chi^2(1) = 76.77, p < .001$ .

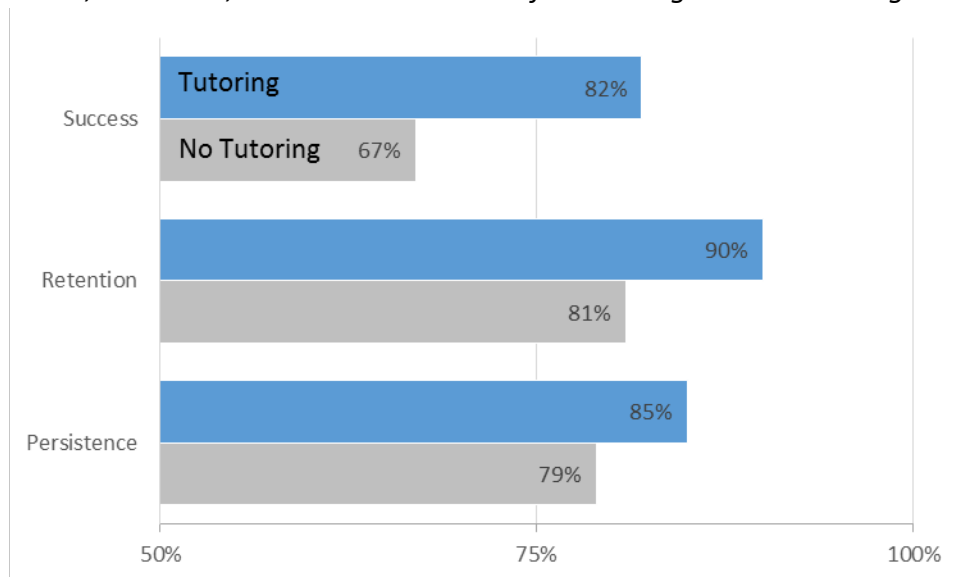
*Table 6. Persistence Rates for No Tutoring and Tutoring Groups.*

| Discipline           | No Tutoring    |                  | Tutoring       |                  |
|----------------------|----------------|------------------|----------------|------------------|
|                      | Total Enrolled | Persistence Rate | Total Enrolled | Persistence Rate |
| Anatomy & Physiology | 3675           | 81%              | 289            | 91%              |
| Anthropology         | 1134           | 72%              | 27             | 70%              |
| Biology              | 2957           | 80%              | 128            | 74%              |
| Chemistry            | 5237           | 83%              | 706            | 88%              |
| Chinese              | 373            | 75%              | 20             | 90%              |
| CIS                  | 5319           | 76%              | 419            | 85%              |
| Earth Science        | 227            | 90%              | 8              | 100%             |
| Economics            | 463            | 68%              | 15             | 53%              |
| German               | 168            | 73%              | 15             | 73%              |
| Japanese             | 248            | 87%              | 6              | 87%              |
| Microbiology         | 195            | 87%              | 6              | 100%             |
| Music                | 1958           | 84%              | 159            | 96%              |
| Physics              | 2216           | 80%              | 343            | 80%              |
| Psychology           | 4380           | 76%              | 208            | 63%              |
| Sign Language        | 2745           | 73%              | 847            | 88%              |
| Spanish              | 2905           | 79%              | 152            | 86%              |

### Conclusion

Overall, students who visited the student success center had higher levels of success, retention, and persistence than students who did not visit the center. Figure 1 shows the rates for both groups.

*Figure 1. Overall Success, Retention, and Persistence Rates for Tutoring and No Tutoring Groups.*



### Comparing Outcomes by Demographic Category

The next set of analyses considered differences in outcomes among the group of students who chose to visit the Student Success Center for discipline specific tutoring. More specifically, this section examines gender and ethnic differences in success, retention, and persistence.

#### Outcomes by Gender

*Success.* Table 7 shows student success by gender. Female and male students had similar levels of success. A chi-square test confirmed no statistically significant difference between the groups,  $\chi^2(2) = 1.16$ ,  $p = n.s.$

*Table 7. Success Rate for Students who visited the Student Success Center by Gender.*

| Gender  | Number Enrolled | Success Rate |
|---------|-----------------|--------------|
| Female  | 893             | 82%          |
| Male    | 664             | 81%          |
| Unknown | 42              | 76%          |

*Retention.* Table 8 shows student retention by gender. Female and male students had identical levels of retention. There was no statistically significant difference between the groups,  $\chi^2(2) = 1.38$ ,  $p = n.s.$

*Table 8. Retention Rate for Students who visited the Student Success Center by Gender.*

| Gender  | Number Enrolled | Retention Rate |
|---------|-----------------|----------------|
| Female  | 893             | 91%            |
| Male    | 664             | 91%            |
| Unknown | 42              | 86%            |

*Persistence.* Table 9 shows persistence by gender. Female and male students had similar levels of persistence. There was no statistically significant difference between the groups,  $\chi^2(2) = 1.57$ ,  $p = n.s.$

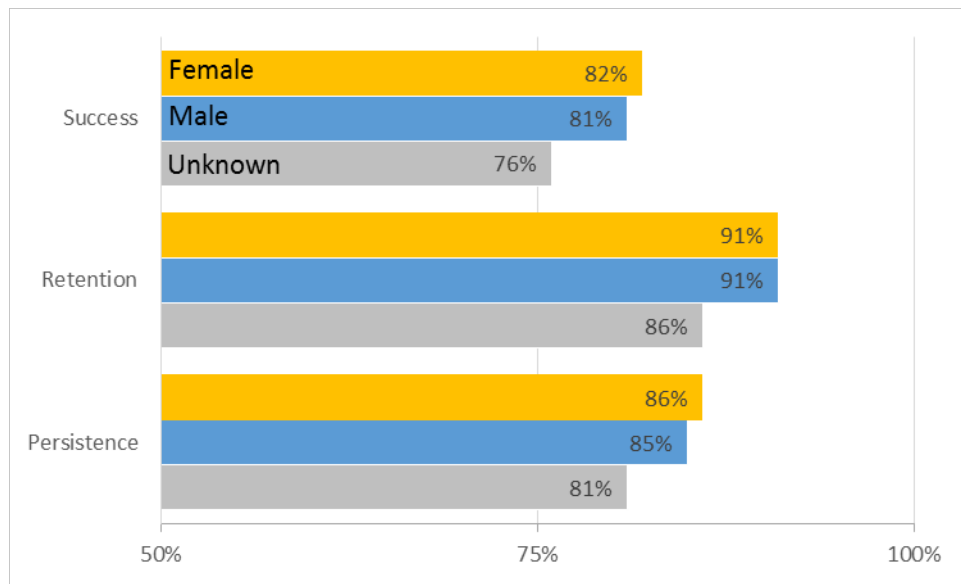
*Table 9. Persistence Rate for Students who visited the Student Success Center by Gender.*

| Gender  | Number Enrolled | Persistence Rate |
|---------|-----------------|------------------|
| Female  | 1877            | 86%              |
| Male    | 1386            | 85%              |
| Unknown | 85              | 81%              |

#### Conclusion

Female and male students had similar levels of success, retention, and persistence. Figure 2 shows the rates by gender.

Figure 2. Overall Success, Retention, and Persistence Rates by Gender.



### Outcomes by Ethnicity

*Success.* Table 10 shows student success by ethnicity. Asian, White, Hispanic, and other students had higher rates of success than American Indian and Black students. A chi-square test confirmed statistically significant variation between ethnic groups,  $\chi^2(5) = 20.45$ ,  $p = .001$ .

Table 10. Success Rate for Students who visited the Student Success Center by Ethnicity.

| Ethnicity       | Number Enrolled | Success Rate |
|-----------------|-----------------|--------------|
| American Indian | 64              | 66%          |
| Asian           | 259             | 83%          |
| Black           | 78              | 74%          |
| Hispanic        | 1046            | 82%          |
| White           | 54              | 85%          |
| Other           | 98              | 91%          |

*Retention.* Table 11 shows student retention by ethnicity. All groups had high levels of retention. There was no statistically significant difference between the groups,  $\chi^2(5) = 6.48$ ,  $p = n.s.$

Table 11. Retention Rate for Students who visited the Student Success Center by Ethnicity.

| Ethnicity       | Number Enrolled | Retention Rate |
|-----------------|-----------------|----------------|
| American Indian | 64              | 84%            |
| Asian           | 259             | 91%            |
| Black           | 78              | 87%            |
| Hispanic        | 1046            | 91%            |
| White           | 54              | 91%            |
| Other           | 98              | 95%            |



*Persistence.* Table 12 shows persistence by ethnicity. Asian, Black, and Hispanic students had higher rates of persistence than White and other students. A chi-square test indicated statistically significant variation between ethnic groups,  $\chi^2(5) = 41.65, p < .001$ .

Table 12. Persistence Rate for Students who visited the Student Success Center by Ethnicity.

| Ethnicity       | Number Enrolled | Persistence Rate |
|-----------------|-----------------|------------------|
| American Indian | 140             | 70%              |
| Asian           | 545             | 85%              |
| Black           | 170             | 91%              |
| Hispanic        | 2175            | 86%              |
| White           | 107             | 76%              |
| Other           | 211             | 81%              |

**Conclusion**

Analyses showed significant differences for student success and persistence by student ethnicity. Retention was similar amongst all student ethnicities. Figure 3 shows the rates by ethnicity.

Figure 3. Overall Success, Retention, and Persistence Rates by Ethnicity.

