RESEARCH FINDINGS

Efficacy Study - Final Report

Tutor.com
New York, New York

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Efficacy Study Final Report

Tutor.com • New York, New York

Introduction and Methodology

This report presents the final results of a study of the efficacy of tutoring services provided by Tutor.com to students enrolled at four community colleges. The study is designed to determine whether or not students using Tutor.com online tutoring sessions were more successful in selected courses than students at the same schools in the same courses that did not use Tutor.com tutoring sessions.

The study focuses on students in college algebra, introductory statistics and introductory English composition courses. A total of 1,631 students were included, half of whom used Tutor.com online tutoring and half of whom did not. The participating colleges provided information on all students in each of these courses in either the fall 2013 or the fall of 2014. The students in those courses who also signed up for and used Tutor.com online tutoring sessions were assigned to one group (the treatment group). Then a random sample of students in the courses who did not use Tutor.com tutoring sessions were assigned to a second group (the control group).

We compared the treatment group and the control group on several outcomes. The first is course success. This is defined in terms of the grade the students earned in the courses. Students who earned a grade of C or higher were considered to have succeeded in the course.[1] Students who earned a grade of D or lower (including Incompletes and Withdrawn students) were considered to have failed the course.

A second outcome is persistence to the subsequent term. Schools provided data on students enrolled in the fall term and the spring term. We identified the students who were enrolled in the fall term in these courses and then determined whether or not they had re-enrolled at the institution in the subsequent (spring) term.

A third outcome is persistence after one year. Schools also provided data on students who enrolled a year later or who had graduated. A final outcome was self-reported measures of engagement based on responses to a survey questionnaire.

The demographic and academic characteristics of the students in each group were compared to identify any significant differences. Where such differences did exist we controlled for these differences by measuring the outcomes (course success, subsequent term enrollment, persistence after one year and engagement) within demographic characteristics. For example, students in the treatment group (used Tutor.com sessions) were significantly more likely to be enrolled full-time at their institution. We selected all full-time students in the treatment and control groups and then tested for differences on the target outcomes (course success, term-to-term persistence, persistence after one year and engagement). Students enrolling part-time and using Tutor.com sessions were no more likely (nor no less likely) to experience course success than part-time

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[1] The letter grades awarded in these courses at the schools included in the study were: A, B+, B, C+, C, D, F, I and W.

students not using Tutor.com sessions. However, students enrolling part-time and using Tutor.com sessions were more likely than part-time students who did not use Tutor.com sessions to return in the subsequent term.

Key Findings

The results of this study show that the students at these four different community colleges who used Tutor.com sessions were significantly more likely to be successful in their courses than similar students at the colleges who did not use Tutor.com sessions.

In addition, students using Tutor.com sessions were more likely to persist at their institution to the subsequent term than those who did not use Tutor.com sessions. These gains continued to persistence in the following year, with more students who used Tutor.com sessions persisting one year later compared to students at these institutions who did not use Tutor.com sessions.

These course success gains were experienced by students in English composition courses. Students taking courses in college algebra or introductory statistics showed no difference in rates of course success due to use of Tutor.com sessions. However, while students in general who took college algebra or introductory statistics courses were less likely to _persist_ than students in English composition courses, if a student took a college algebra or introductory statistics course and used Tutor.com sessions then they were significantly more likely to persist.

The students who used Tutor.com sessions were more likely than those who did not to believe that they struggled with English and/or mathematics and more likely to express an interest in seeking tutoring help. While we know that these students acted on their felt need for academic support, it is also worth noting that significant portions of students who did not use Tutor.com sessions indicated a need for support. To the extent that they accessed other resources (either on their campus or individually) we do see that their outcomes were not as great as for those who used Tutor.com sessions.

While students using Tutor.com sessions were both more likely to be enrolled full-time and also more likely to be taking classes taught by full-time instructors rather than adjuncts, when controlling for these two characteristics the students using Tutor.com sessions were still significantly more likely to experience course success and to persist at their institution to the subsequent term.

There were also other demographic differences between the two groups with respect to gender, age, prior credits earned and prior GPA. But when controlling for these differences students still experienced statistically significant gains associated with online tutoring:

- Younger students experienced greater gains from Tutor.com sessions but older students who used Tutor.com sessions were more successful in their courses and more likely to persist than older students who did not use Tutor.com sessions.

- Both male and female students experience gains in course success and persistence from Tutor.com sessions.

- Students who started the term with fewer credits earned experienced greater gains from Tutor.com sessions than those with more credits at the start of the term. But even those with more credits to start the term still achieved statistically greater gains from Tutor.com sessions than those students who did not use Tutor.com sessions.

- Prior GPA is often a strong indicator of future course success and persistence. Students with lower GPA's going into the term experienced greater rates of success in their courses from Tutor.com sessions than students with similar GPA's who did not use Tutor.com sessions. In addition, those students with higher GPA's and who used Tutor.com sessions had
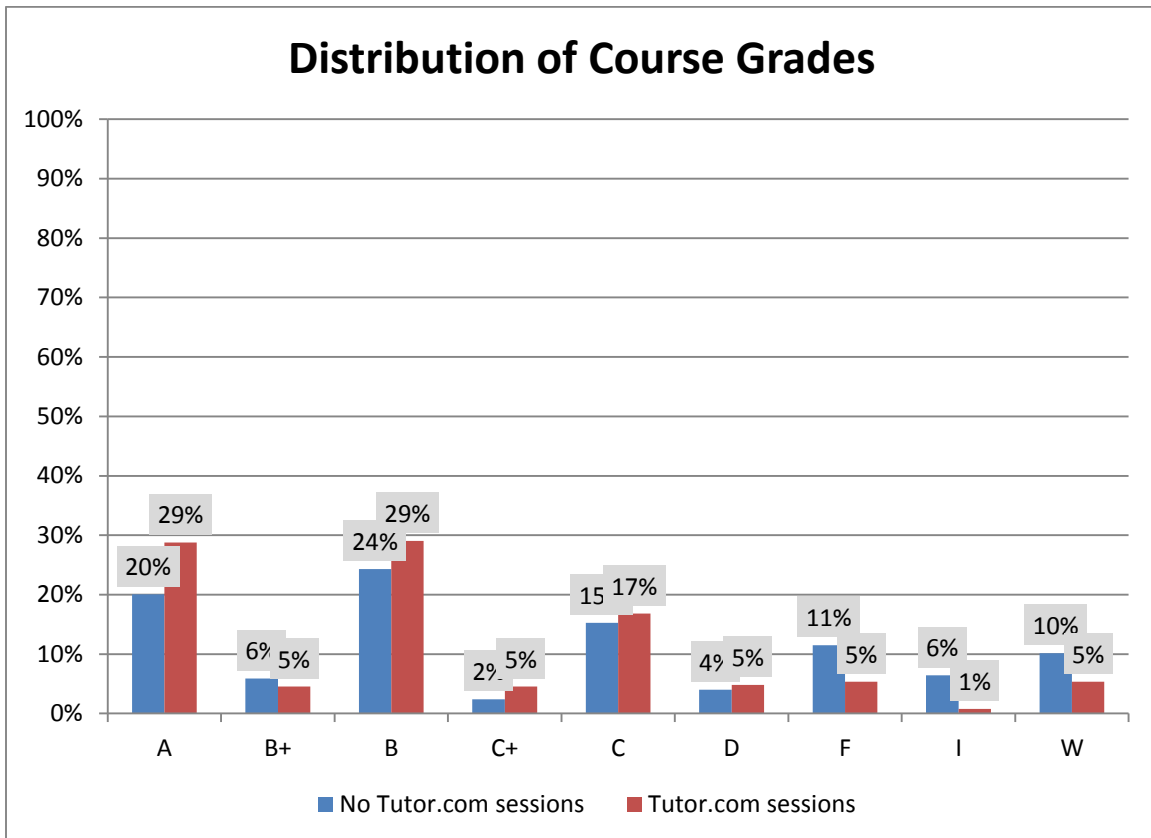
significantly higher persistence rates than did those students with higher GPA's who did not use Tutor.com sessions.

Results

Students who use Tutor.com services are more likely to be successful in their courses than comparable students who do not use Tutor.com. More than a quarter (27%) of students who did not use Tutor.com earned a D grade or lower, while only 16% of those students using Tutor.com failed to earn at least a C in their course.

Course success - all courses

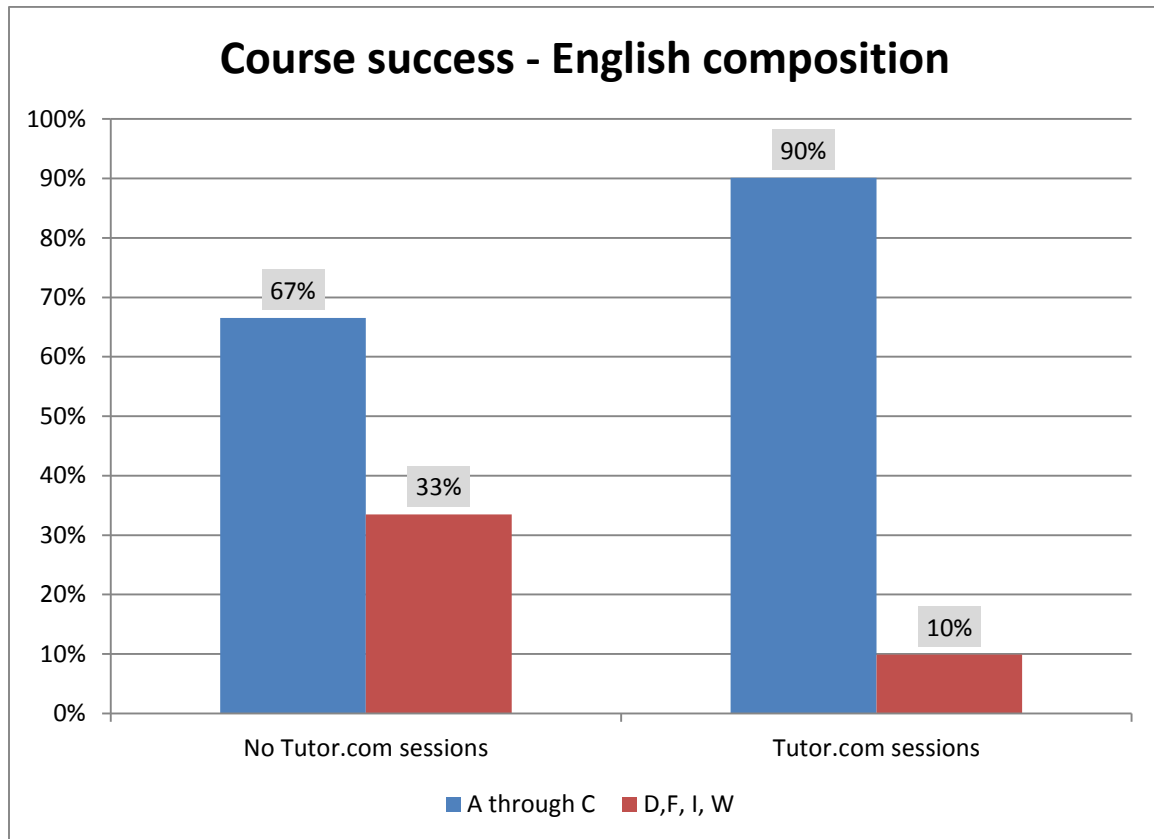|	No Tutor.com sessions	Tutor.com sessions
A through C	68%	84%
D,F, I, W	32%	16%
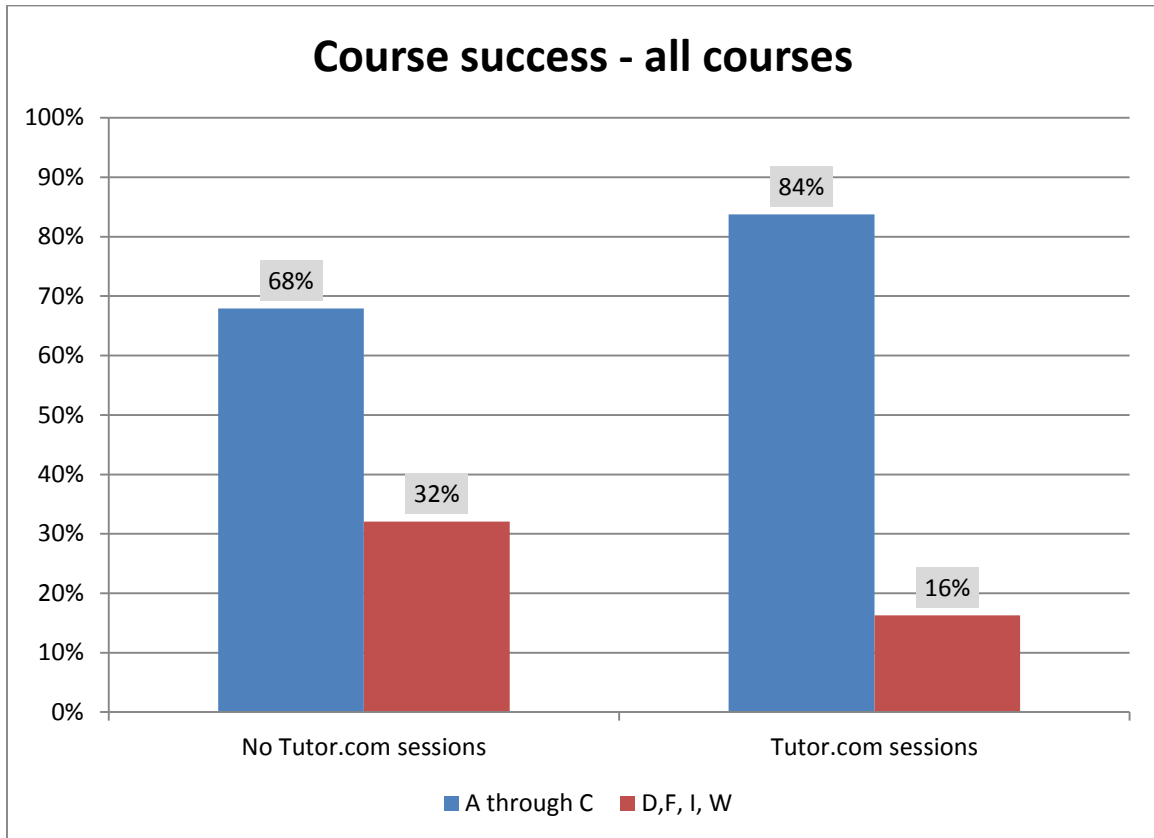
More specifically, students in Tutor.com sessions were significantly more likely to earn A's and B's than comparable students who did not use Tutor.com sessions, and they were significantly less likely to earn a grade of F than comparable students who did not use Tutor.com sessions.

Distribution of Course Grades

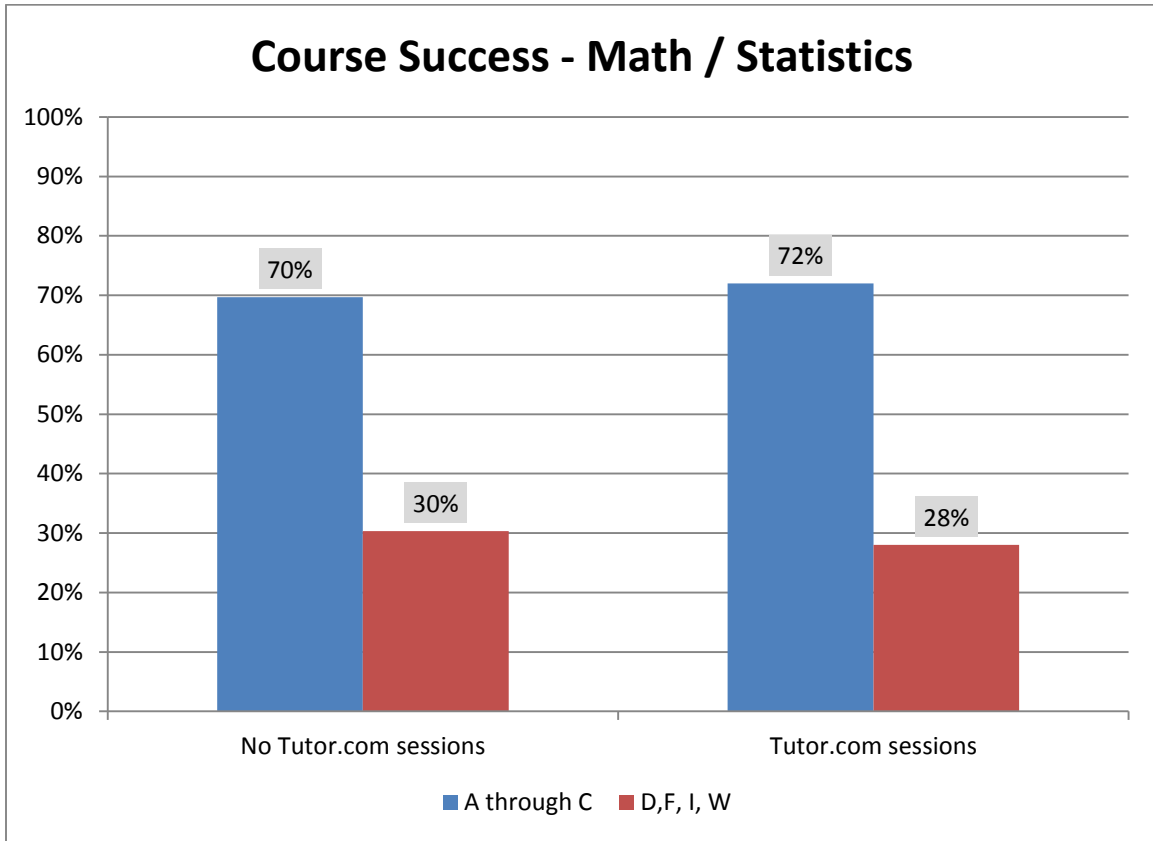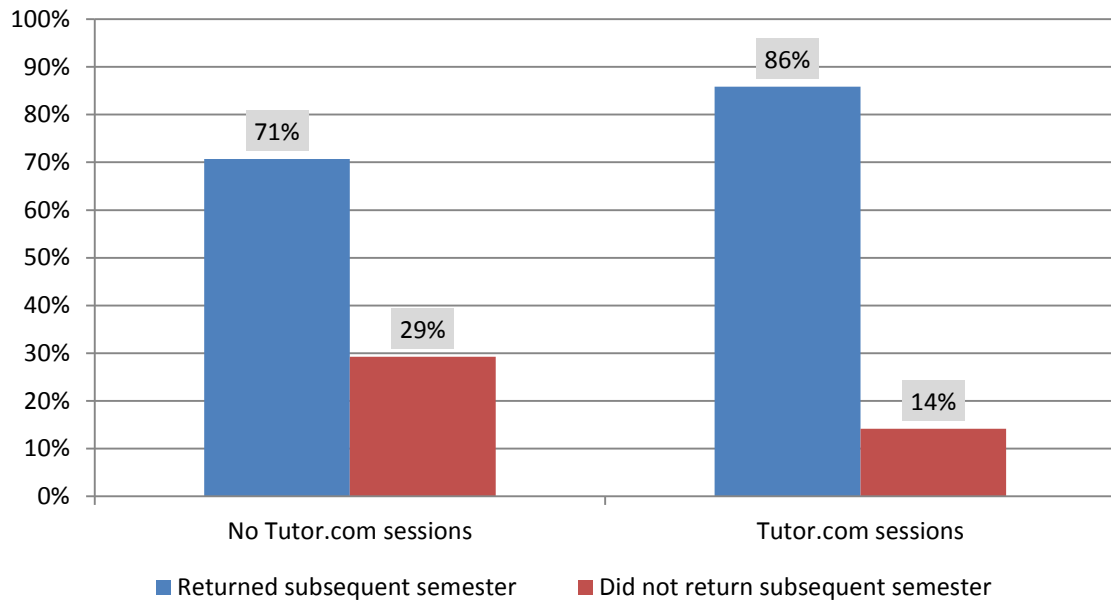| Grade	No Tutor.com sessions	Tutor.com sessions
A	20%	29%
B+	6%	5%
B	24%	29%
C+	2%	5%
C	15%	17%
D	4%	5%
F	11%	5%
I	6%	1%
W	10%	5%

The significant differences in course success (earning a grade of A through C) is associated with students taking introductory composition courses, where students who did not take online tutoring were more than twice as likely to earn a grade of D or lower. For students taking courses in either college algebra or introductory statistics there is a small difference but it is not statistically significant. However, for some campuses the success rates of students in college algebra or statistics courses and who used Tutor.com sessions is significantly higher than those who did not use Tutor.com sessions.

In addition, students taking college algebra or introductory statistics were less likely to return the subsequent semester than were those students taking introductory composition courses. But among those students taking college algebra or introductory statistics, those who used Tutor.com sessions were significantly more likely to return the subsequent semester.

Course success - English composition

	A through C	D,F, I, W
No Tutor.com sessions	67%	33%
Tutor.com sessions	90%	10%

**Course Success - Math / Statistics**

Subsequent Term Enrollment Status
(Those Taking Introductory Statistics or College Algebra)

Use of Tutor.com sessions is also significantly related to student persistence. 70% of students who didn't use Tutor.com sessions returned to their home institution the following semester, while 88% of those who used Tutor.com sessions returned. This represents a gain of 18% points.

Subsequent Term Enrollment Status

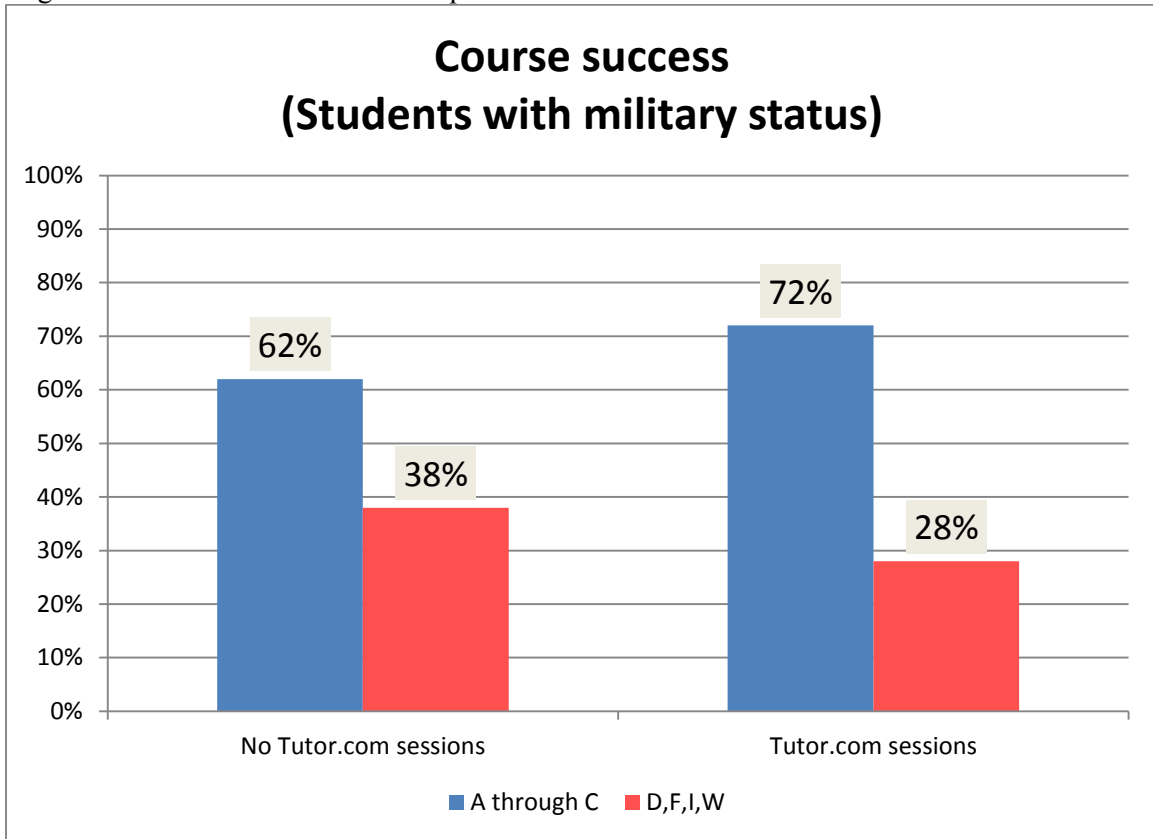| Category	Returned subsequent semester	Did not return subsequent semester
No Tutor.com sessions	70%	30%
Tutor.com sessions	88%	12%
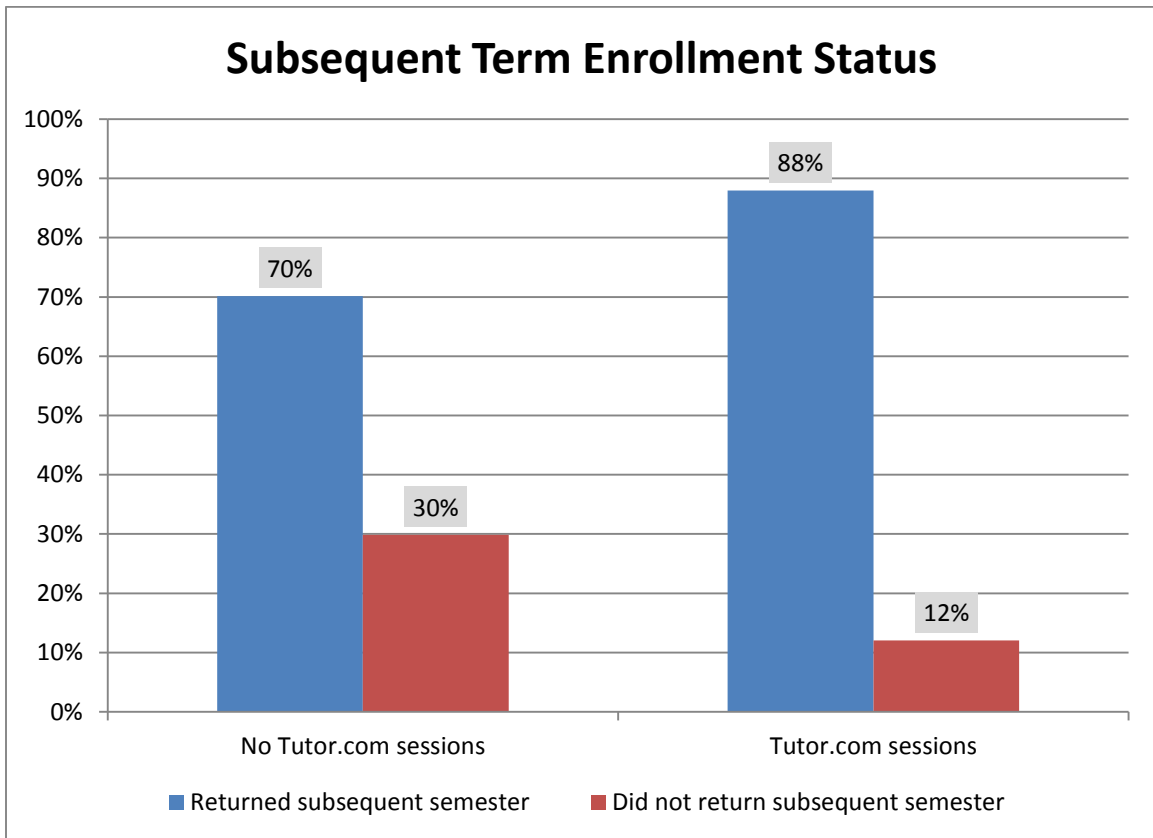
The effect on retention persists beyond just one semester. After one year 61% of students who used Tutor.com sessions returned a year later, while 51% of those students who did not use Tutor.com sessions returned, a 10 point differential.

Persistence after one year

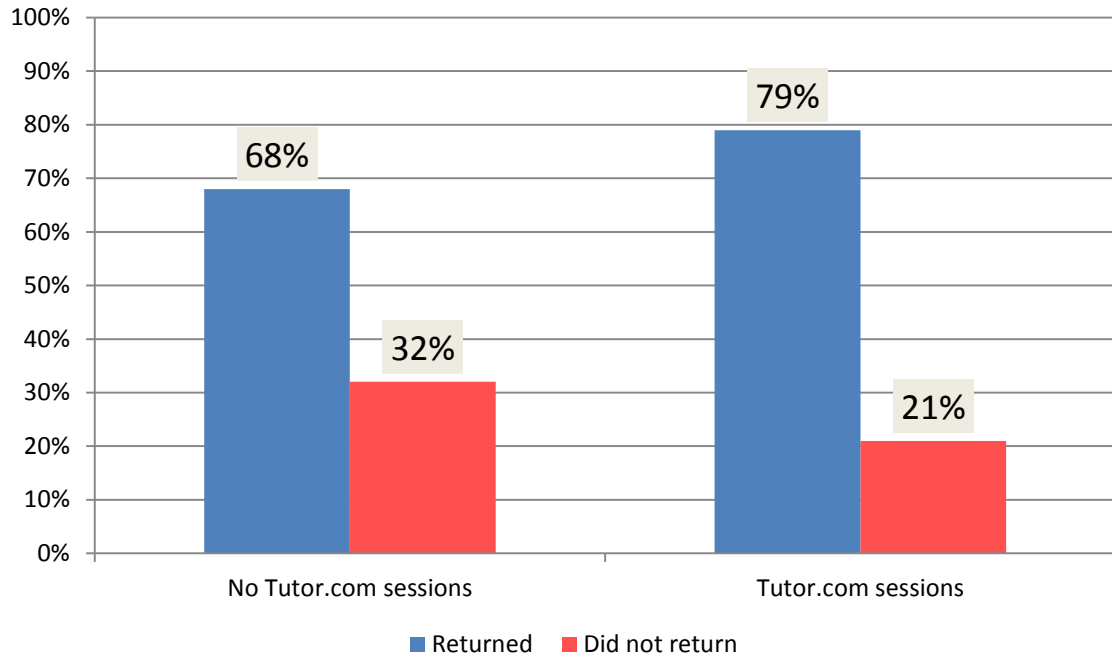|	No Tutor.com sessions	Tutor.com sessions
Returned one year later	51%	61%
Did not return	49%	39%
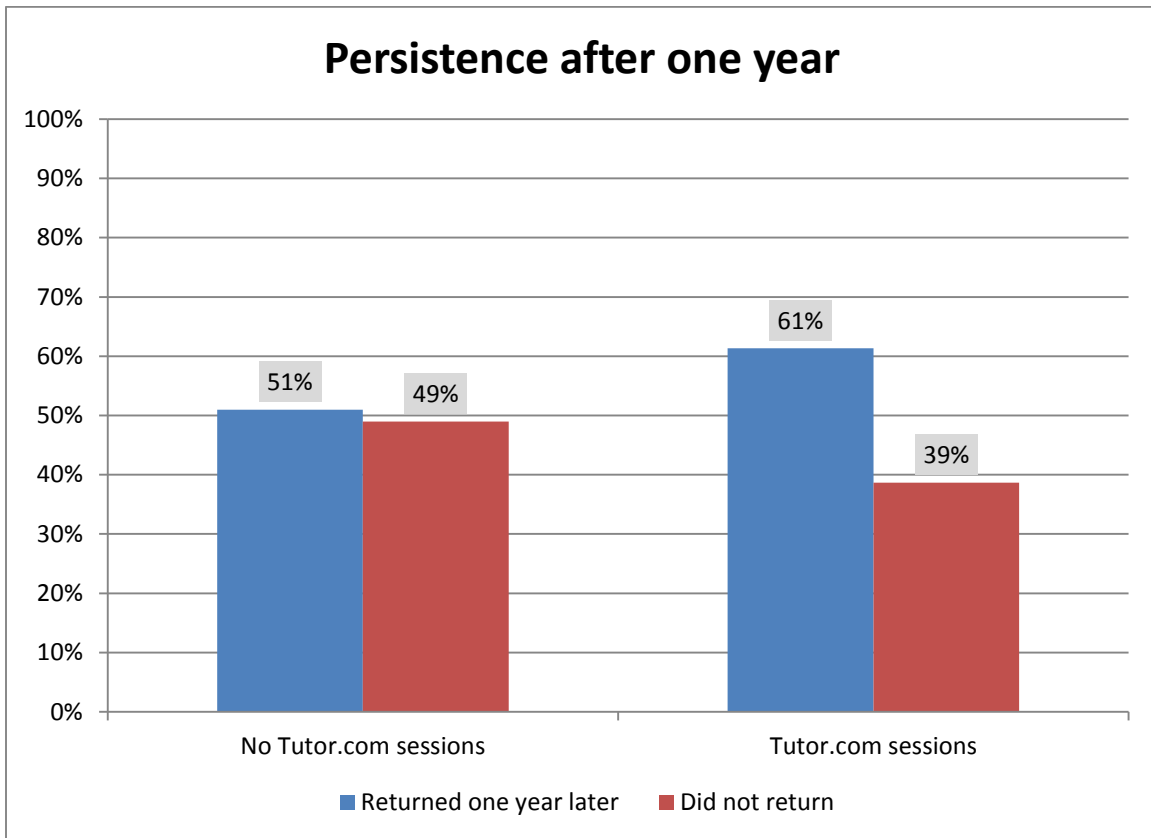
(NOTE: Students who were enrolled and did not re-enroll because they graduated were removed from the cohorts when calculating the persistence rate after one year. Less than 1 percent of students records included in the study graduated within the year.)

As a separate analysis we identified those students with military or veteran status (including military spouses) in order to assess whether this segment of the student population showed evidence of similar gains. Indeed, those students with some military status also showed evidence of greater rates of course success and persistence.

Course success
(Students with military status)

Legend: ■ A through C ■ D,F,I,W

Categories: No Tutor.com sessions — A through C: 62%, D,F,I,W: 38%; Tutor.com sessions — A through C: 72%, D,F,I,W: 28%

Subsequent Term Enrollment Status
(Students with Military Status)

During the term in which they were taking courses students were invited to complete an online inventory that included statements about their perceived abilities in these subjects and their perceived need for tutoring. (Most students received the survey before the midpoint of the term for which they were taking courses.) Students were presented with these statements and asked to rate their level of agreement.

Students who used online tutoring were more likely than those not using online tutoring to believe that they were less capable in the areas of English and mathematics, and were more likely to express a need for tutoring.

We know that those students who used Tutor.com sessions acted on their felt need for support and that when they engaged with tutoring they were more likely to succeed in courses and to persist. But substantial numbers of those students who were not using Tutor.com sessions also indicated some need for tutoring. They may have used other resources (either on their campus or individually) but the results seem to indicate that the tutoring received by students in Tutor.com sessions generally is more effective (based on course success rates and persistence rates) than other support students may receive.

The following table lists the relevant items and the percentage of students responding to the survey who indicated their agreement with the item. (We have also included the percentage agreement figures for a recent national sample of college students completing this same instrument.)

Student Engagement Items – Percent agreement

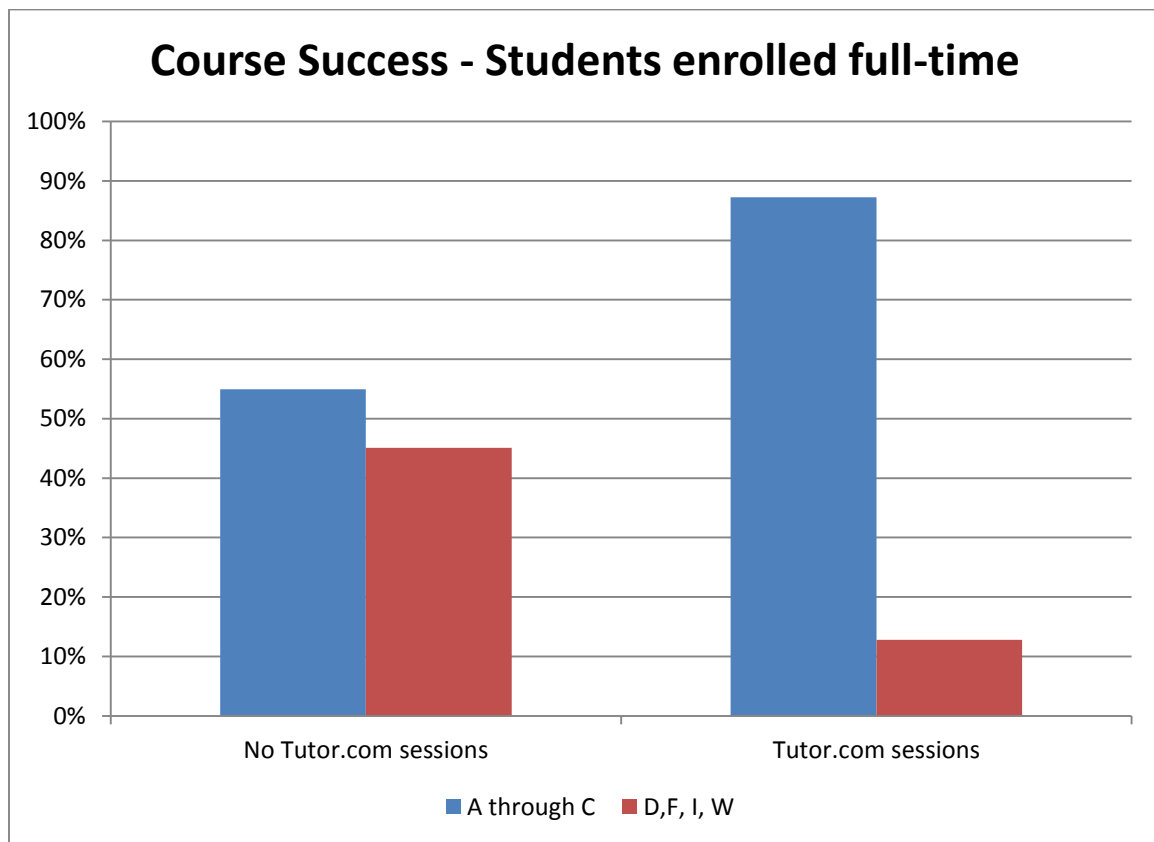| Item	No Tutor.com sessions	Tutor.com sessions	National results
I would like to receive tutoring in one or more of my courses	40%	49%	44%
I would like to receive some individual help in improving my writing skills	50%	56%	53%
I am very good at figuring out the deeper meaning of a short story or novel	57%	51%	54%
Learning new vocabulary words is a slow and difficult process for me	54%	57%	55%
I am capable of writing a very clear and well-organized paper	57%	52%	55%
I would like to receive some training in improving my reading skills	30%	38%	35%
I would like to receive some individual help in improving my math skills	58%	66%	62%

Controlling for Differences between Groups

Students using Tutor.com sessions were significantly more likely to be enrolled full-time (74% vs. 63%).

Demographic Characteristics: Attendance Status

Enrolled	No Tutor.com sessions	Tutor.com sessions
Full Time	63%	74%
Part Time	37%	26%

Reviewing the differences in course success for students by their enrollment status shows that the gains associated with use of Tutor.com sessions are associated with full-time students. Students enrolling part-time and using Tutor.com sessions were no more likely (nor no less likely) to experience course success than part-time students not using Tutor.com sessions.


Selecting only those students who were enrolled full-time in the fall semester (in both the treatment and control groups), we see that here as well those who used Tutor.com sessions were significantly more likely to return in the subsequent semester.

Subsequent Term Enrollment Status - Students Enrolled Full-time in Original Term
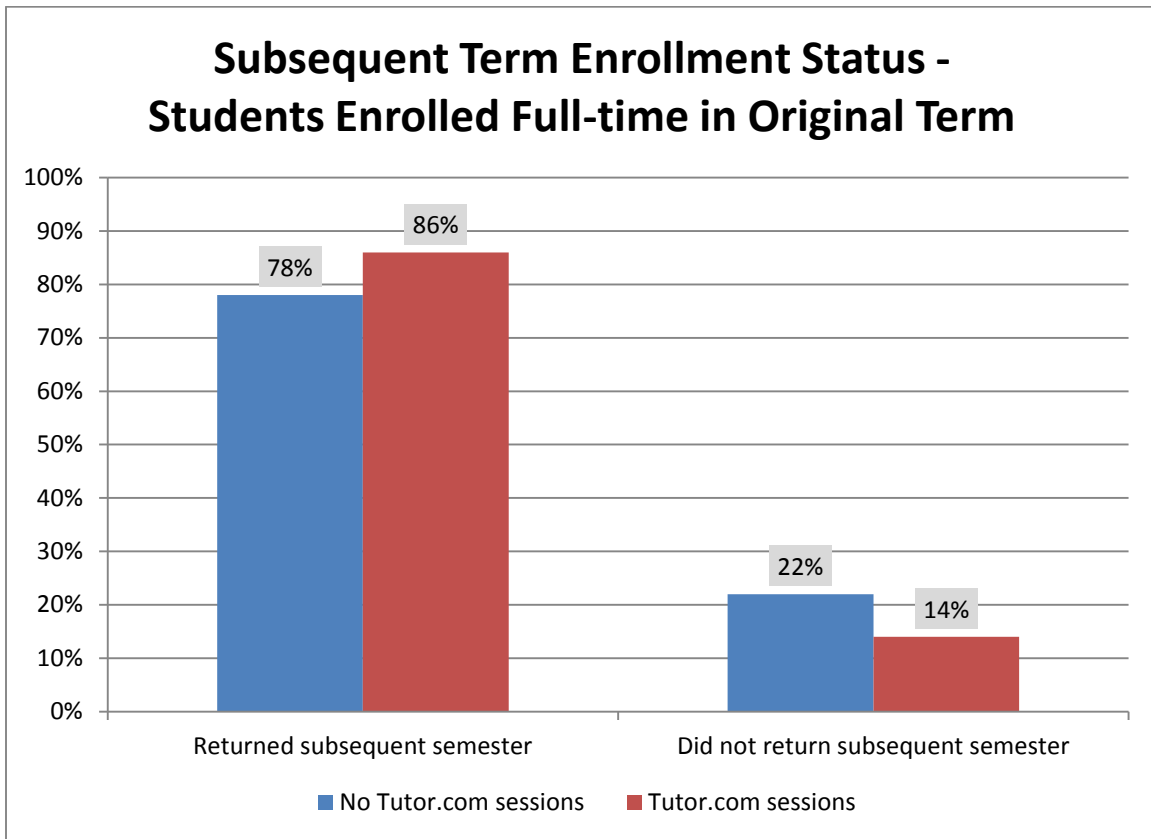
While students enrolled part-time and using Tutor.com sessions did not see significant course gains (compared with those part-time students who did not use Tutor.com sessions), part-time students who used Tutor.com sessions were more likely to return in the subsequent term (69% versus 60%) than those part-time students who did not use Tutor.com sessions.

Subsequent Term Enrollment Status - Students Enrolled Part-time in Original Term
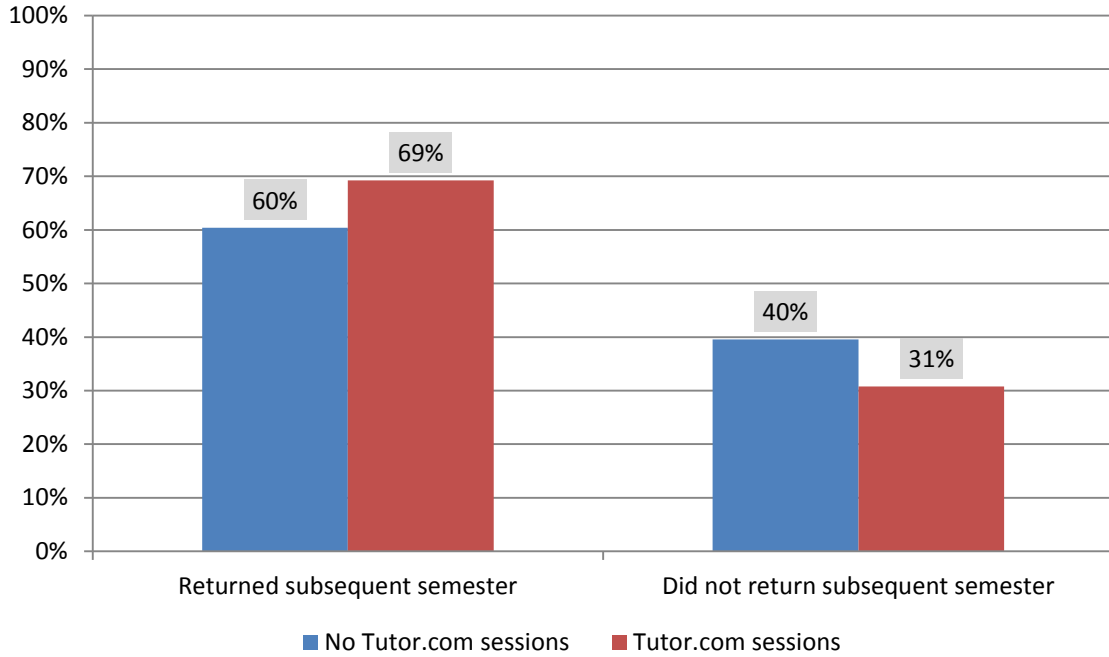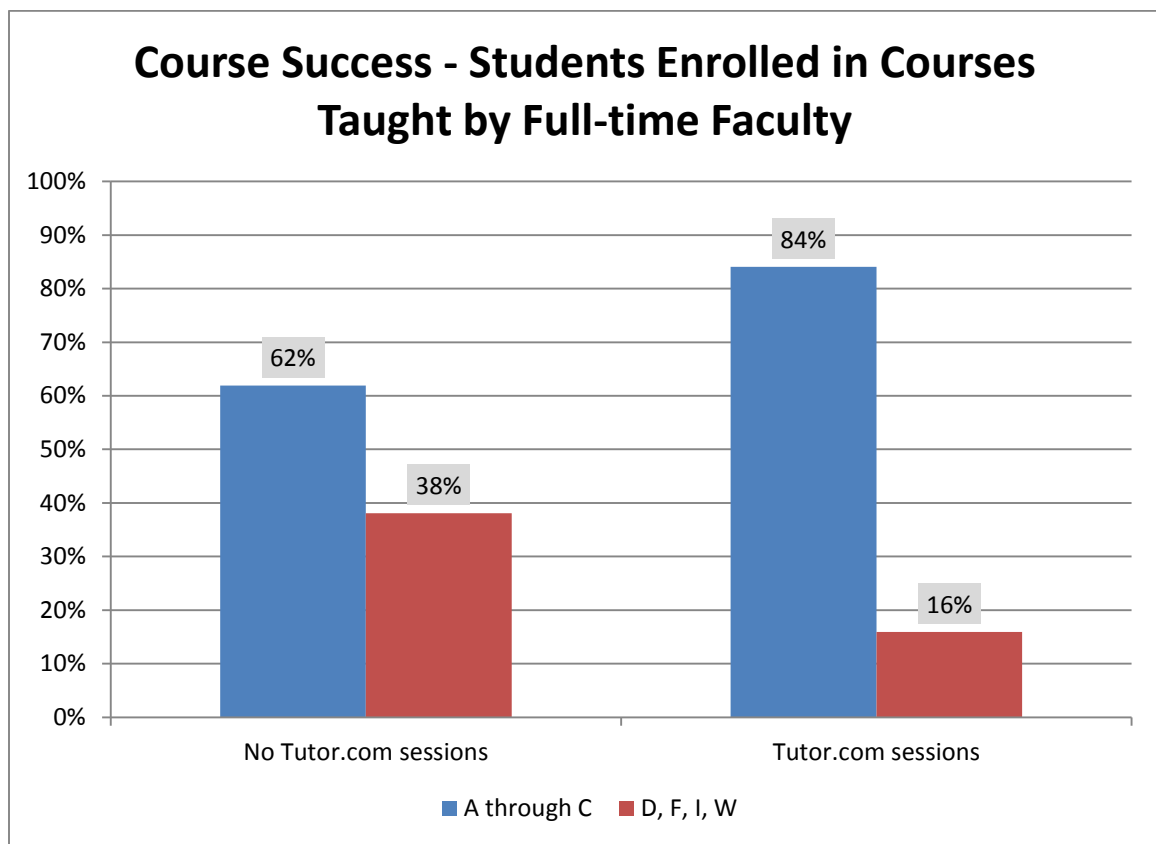
Students using Tutor.com sessions were significantly more likely to be enrolled in courses taught by full-time faculty rather than adjunct (part-time) faculty (85% vs. 64%).

### Demographic Characteristics: Course Instructor Status

Course Instructor Status	No Tutor.com sessions	Tutor.com sessions
Adjunct	36%	15%
Full Time	64%	85%

When controlling for the status of the instructor, students who use Tutor.com sessions are significantly more likely to experience course success. The chart below shows the differences for students in sections taught by full-time faculty.

Course Success - Students Enrolled in Courses Taught by Full-time Faculty

No Tutor.com sessions: A through C = 62%, D, F, I, W = 38%
Tutor.com sessions: A through C = 84%, D, F, I, W = 16%

When controlling for faculty status we still see significantly greater rates of persistence to subsequent term for students using Tutor.com sessions compared with other students.

Subsequent Term Enrollment Status - Students Enrolled in Courses Taught by Full-time Faculty
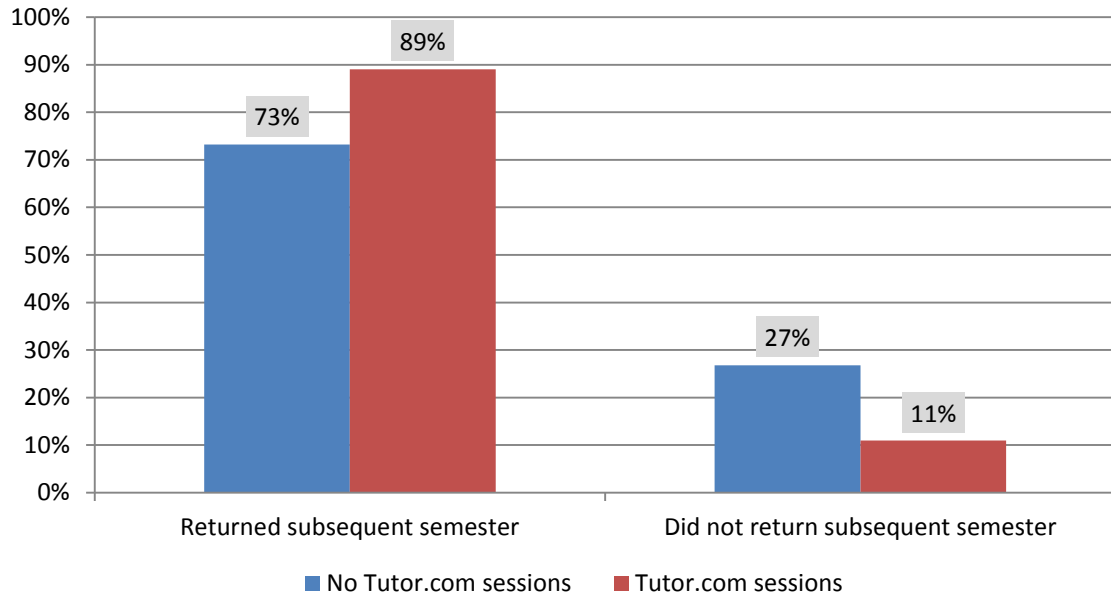
There were statistically significant differences between groups in terms of age, gender, and the academic characteristics of GPA and prior credits earned. (There were no differences between the groups in their race/ethnic composition.)

Demographic Characteristics: Age

Age range	No Tutor.com sessions	Tutor.com sessions
Under 21	44%	57%
21 or older	56%	43%

Demographic Characteristics: Gender

Gender	No Tutor.com sessions	Tutor.com sessions
Female	59%	71%
Male	41%	29%

Demographic Characteristics: Race / Ethnicity

Race / ethnic group	No Tutor.com sessions	Tutor.com sessions
Non-white	35%	39%
White	65%	61%

Academic characteristics

Measure	No Tutor.com sessions	Tutor.com sessions
Prior GPA	2.75	3.02
Prior Credits Earned (at institution)	23.38	14.62
Prior Credits Earned (at any institution)	24.70	11.65

Because there were differences on some of these key demographic variables we analyzed the outcomes variables for the subgroups to assess whether or not the gains observed in course success and retention are independent of these demographic characteristics. Indeed, in spite of the different demographic makeups of the groups the differences in course success and return to the subsequent term are significantly greater for students who used online tutoring.

With respect to age, younger students experienced greater improvements when using online tutoring than do older students, but the differences for older students are still significant.

Course success by age

Under 21	No Tutor.com sessions	Tutor.com sessions
C or higher	72%	91%
D or lower	28%	9%
21 or older	No Tutor.com sessions	Tutor.com sessions
C or higher	64%	74%
D or lower	36%	26%

Return status by age

Under 21	No Tutor.com sessions	Tutor.com sessions
Returned subsequent term	75%	94%
Did not return	25%	6%
21 or older	No Tutor.com sessions	Tutor.com sessions
Returned subsequent term	66%	80%
Did not return	34%	20%

With respect to gender, the gains experienced from online tutoring are similar for both male and female students.

Course success by gender

Female	No Tutor.com sessions	Tutor.com sessions
C or higher	69%	83%
D or lower	31%	17%
Male	No Tutor.com sessions	Tutor.com sessions
C or higher	66%	86%
D or lower	34%	14%

Return status by gender

Female	No Tutor.com sessions	Tutor.com sessions
Returned subsequent term	75%	87%
Did not return	25%	13%
Male	No Tutor.com sessions	Tutor.com sessions
Returned subsequent term	64%	90%
Did not return	36%	10%

Students who started the term with fewer credits earned experienced greater gains from online tutoring than did those who had more prior credits, but the gains for both groups are statistically significant.

Course success by previous credits earned

15 or fewer	No Tutor.com sessions		Tutor.com sessions
C or higher		66%	89%
D or lower		34%	11%
More than 15	No Tutor.com sessions		Tutor.com sessions
C or higher		70%	76%
D or lower		30%	24%

Return status by previous credits earned

15 or fewer	No Tutor.com sessions		Tutor.com sessions
Returned subsequent term		65%	90%
Did not return		35%	10%
More than 15	No Tutor.com sessions		Tutor.com sessions
Returned subsequent term		76%	85%
Did not return		24%	15%

Students who started the term with a lower GPA experienced greater gains from online tutoring than those with a higher GPA. However even those students with higher GPA's who used online tutoring had greater course success and returned at greater rates than those who did not use online tutoring.

Course success by GPA at start of term

Below 3.00	No Tutor.com sessions	Tutor.com sessions
C or higher	45%	67%
D or lower	55%	33%
3.00 or above	No Tutor.com sessions	Tutor.com sessions
C or higher	90%	95%
D or lower	10%	5%

Return status by GPA at start of term

Below 3.00	No Tutor.com sessions	Tutor.com sessions
Returned subsequent term	64%	80%
Did not return	36%	20%
3.00 or above	No Tutor.com sessions	Tutor.com sessions
Returned subsequent term	76%	93%
Did not return	24%	7%