



Nimbus  
Learning

# Improving the student experience

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Opportunities created by  
technology-driven tutoring programs

\*Updated with 2020 data on post-secondary tutoring programs



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Content warning: This paper includes references to studies that relate to topics such as suicide and self harm.

## INTRODUCTION

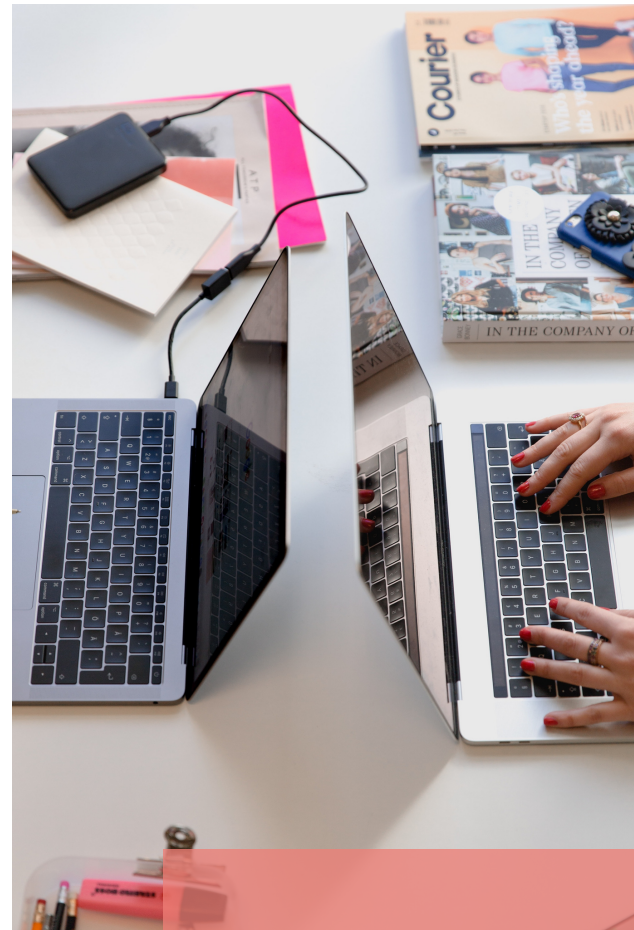
Whether it be for the eager student wanting to learn everything about a certain topic, or a student who needs a more flexible, one-on-one style of learning to excel, tutoring is an integral part of a robust academic program. Now, with academic competition at an all time high, access to flexible and customizable tutoring services is needed more than ever. Not only valuable to the students in the sessions, peer tutoring services are also beneficial to the tutors themselves – increasing the value of these services to the wellbeing of the entire student body. In educational institutions that have well planned and versatile tutoring services, adding a digital administration system increases usability and effectiveness of the program.

In this document, we will focus on academic research highlighting the value of peer-tutoring to students and give insight into approaches made by post-secondary institutes of various sizes. Our approach is based on the validation of the following three statements:

- Peer tutoring increases student academic performance, and thus serves as a proactive approach to reducing dropout rates. It also helps both tutors and students develop interpersonal and communication skills.
- Peer tutoring alleviates pressure on students and thus serves as a proactive approach to the university student mental health crisis.
- Technological solutions are a more effective, accessible and effective way of administering student services

## PEER TUTORING & ACADEMIC PERFORMANCE

Students come to universities to grow into educated and productive members of society. This process is, of course, not entirely contingent on GPA scores but success in classes is a major indicator of a student's overall enjoyment of their university experience, as well as a motivating factor in continuing their education. Studies have shown that low grades are correlated with dropout rates as well as stress and anxiety experienced by students over the course of their university experience.



Thankfully, both professional and peer tutors are able to help students increase their grades and become more confident academics – the tutors even get something out of the exchange too!

Student academic performance contributes heavily to student dropout rates. In 2013, The CIBC Centre for Human Capital and Productivity found that forty-five percent of students who drop out in their first year of university attribute the cause to academic performance. This statistic remains prevalent throughout the university experience, and is a factor in forty-five percent of dropouts in the first two years of university and thirty-six percent of dropouts in the first three years (Stinebrickner & Stinebrickner, 2013). A further study published in the Alberta Journal of Educational Research indicated that students with a first-year postsecondary GPA of 60% or lower were 3.57 times more likely to drop out of postsecondary education than students with a GPA of 90%, 2.22 times more likely to drop out of postsecondary education than students with a GPA of 80%, and 1.92 times more likely to drop out of postsecondary education than students with a GPA of 70% (Ma & Frempong, 2013). When a student's grades are falling, support is needed to help them remain in school.

Tutoring has a significant positive impact on students' academic performance. An extensive study published in the Journal of College Reading and Learning compared tutored and un-tutored students who had to repeat a university-level class due to poor academic performance (Colver & Fry 2016). Compared to students who did not receive tutoring, those who received tutoring demonstrated a higher mean increase in their overall grade from their first attempt to their second. Both cohorts of students did see an overall increase in grades, however, the increase was significantly greater for the students who received tutoring. (It is important to note that the comparisons were between students who had taken and repeated the same courses, in the same sections with the same instructors during the same years and academic terms for both their first and second attempts.) (Interaction between changes in course grades and the presence of tutoring,  $F(1, 134) = 8.8$  (demonstrating that the two populations had similar characteristics before the second attempt with/without tutoring),  $p = .004$  (an indicator of the significance of their data: there is a 0.4% probability that these results are due to chance and not due to the influence of the tutor. A very low probability!) (Colver & Fry, 2016). This article further went on to demonstrate that students who received routine tutoring in their first attempt at a course also achieved higher grades than students who did not attend tutoring sessions regularly. In a self-assessment of the reflections on tutoring, students also indicated that they felt tutoring helped them improve on assignments and tests and made them a more confident student (Colver & Fry, 2016).

## Peer tutors play a primary role in campus tutoring programs.

According to the College Tutoring Program Benchmarks, 2020 Edition, professors, lecturers, and other full-time instructors conducted only 4% of tutoring sessions, with this number rising to 10 % in larger schools (more than 11,000 students)(Primary Research Group, 2020).

Hired tutors (non-student, non-faculty) conducted only 15% of the tutoring sessions and were most likely to be found at small institutions or institutions with an undergraduate focus.



The tutor does not have to be a professionally trained educator to have an impact on a student's performance - student tutors can have a positive impact on grade outcomes as well. Senior students at the University of Granada in Spain were given three training sessions and facilitated structured, individual weekly tutoring sessions to students in varying disciplines (Arco-Tirado, Fernández-Martín, & Hervás-Torres, 2019). Students who were a part of these resulting tutoring sessions demonstrated a statistically significant increase in GPA by the end of the semester (significance of change in GPA scores  $p < .001$ ; significance of change in Performance Rate (credits passed divided by the number of credits registered) =  $p < .001$ ; and significance of change in Success Rate (credits passed divided by the number of credits registered and completed)  $p < .017$ ). Furthermore, the tutors themselves may have also benefited from these sessions.

Tutoring does not only benefit those who seek help. A study completed at the University of Salford found that peer tutoring helps not only the student, but also the tutor (Comfort & McMahon, 2014). In this study, final year students of the undergraduate Sports Science program at Salford provided optional tutoring services for two hours each week to second year students in the same program. After 12 weeks of the program, both tutors and tutees who had been part of the tutoring group displayed better academic achievement (measured as the ability to accurately explain and demonstrate a range of dynamic resistance exercises) than students who did not partake.

Tutoring has demonstrated benefits, not only in increasing tutee's grades, but also in increasing the likelihood that they will grow into confident academics and graduate their chosen programs. Tutoring does not have to be an expensive venture staffed with only professionals – senior students are proven to be effective tutors with just a little training and will also academically benefit from the sessions themselves. These benefits could not be more important in a university setting as they are right now, as the increase in academic pressure on campus contributes to the rise in student mental health concerns.





## PEER TUTORING & INTERPERSONAL SKILLS

Being a peer tutor also helps both tutors and students develop interpersonal and communication skills. These skills help create social relationships, improve mental wellbeing, and provide a leg-up in future jobs. As written in a study reviewing the use of peer tutoring in medical education; “Peer tutoring has been associated with positive educational outcomes not only for the tutees, but also for Peer Tutors: while the former have reported increased student satisfaction and enriched learning experience, the latter have also reported training in and an improvement in leadership and teaching skills as well as enhanced confidence.” (Burgess, McGregor, & Mellis, 2014)

An article in the journal *Clinical Simulation in Nursing* found that the experience of planning and executing an educational seminar correlates with increased awareness of communication skills, as well as more confidence in the subject matter (Svellingen, Røssland, Røykenes, 2021). Final year nursing students in Norway were divided into groups and given the opportunity to design and then lead a seminar. In interviews after the seminar, the student tutors described feeling more confident and having higher motivation to learn about the subject matter. Furthermore, participants also said they were challenged to reflect on their communication skills in the workplace, potentially improving soft skills for their later career.

A similar study had third year nursing students volunteer to act as peer tutors for first year nursing students. Before the tutoring began, peer tutors participated in a three hour training session, where they viewed the aims of the peer tutoring session and then practiced running a seminar. At the end of the experiment, the first year tutees reported they enjoyed the experience and felt that it was a valuable learning outcome, while the peer tutors reported improving their skills in communication, teaching and leadership (Belsi and Murtagh, 2018).

Other benefits of pursuing a peer-tutoring model is improved connections between students, and the fostering of a supportive learning environment where students support each other to succeed. This peer support network network can also have benefits beyond academic skills, including improved social interactions and benefits for mental health.

## PEER TUTORING & MENTAL HEALTH SUPPORT



Academia today is highly competitive. Acceptance to graduate and professional schools are contingent on increasingly high standards, including robust co-curricular records and workplace experience. With each passing year, students feel the strain of maintaining increasingly extensive resumes with a solid GPA, resulting in a rise in mental health concerns on campus. A review published in the *International Journal of Nursing Practice* found that between the period from 1994-2007, the number of students with depression doubled and suicidal students tripled (Storrie, Ahern, & Tuckett, 2010). Also, during this same period, the most common reported problem at university counselling centres changed from relationship management issues to stress and anxiety. By 2010, 49% of students who were suffering from a mental illness had symptoms that started during university. Furthermore, Dr. Gregg Henriques – a professor of psychology at James Madison University – compared scores of feelings of anxiety, depression, loneliness, and suicidal ideation in college students from 2008 and 2017 and found a substantial increase in all categories between the two time periods (Henriques, 2019).

When students exhibiting symptoms of mental illness are asked what they believe to be contributing to their symptoms of poor mental health, many indicate academic pressures to be one of their main concerns. In 2018, administration at the University of Westminster became concerned that they had seen a 500% increase in students who disclose a mental health condition and worked to find the aggravating factors (University of Westminster, 2018). In their 5 Year Plan (2018-2023), they wrote “92% of students in counselling identified themselves as having problems with their academic work. Learning and wellbeing are closely linked.”

Unsurprisingly, success in school is a key factor in university life. Although academic support cannot solve all the problems facing a modern student, making support services such as tutoring easily accessible will go a long way to improve mental health and overall university satisfaction. When universities make tutoring services flexible and easy to book, students are able to focus on other concerns that require their attention.





## OPPORTUNITIES CREATED BY ADMINISTERING SERVICES THROUGH TECHNOLOGY

Modern problems, such as the increase in academic load on students, require modern solutions. Thankfully, platforms and services such as Nimbus Learning make accessing much needed services easy and reliable. These platforms not only help students take advantage of tutoring services offered by their universities, but also support university administration in planning more effective programming and efficiently applying for grants through the collected analytics. Finally, a well-developed platform can help tutors plan more effective tutoring sessions.

Institutions with more than 11,000 students will generally have a mix of three types of tutoring programs: a larger tutoring program for the college or university; specific programs for labs or courses; and smaller programs for specific populations, like faculties or student athletes, according to the College Tutoring Program Benchmarks, 2020 Edition (Primary Research Group, 2020). These institutes may benefit from developing a centralized hub so it is easy for students to see at a glance what programs are offered across campus.

In our experience, oftentimes students at smaller institutes (less than 11,000 students) will request help but the school may not have a designated tutor for that subject. In these cases, tutoring technologies connect students with peer tutors who previously excelled in the requested course, extending the network of support available at smaller schools.

Furthermore, the Tutoring Program Benchmarks also found that students in 4-year research colleges want class-specific tutoring instead of walk-in programs, which will increase the burden on these institutes to facilitate tutor matching and program administration (Primary Research Group, 2020). This is coupled with the fact that many schools express a goal of increasing program usage. Providing a high-volume, personalized tutoring service may become a major drain on staff resources; in all campuses surveyed except for community colleges, tutoring program administrators already report that they spent the majority of their time scheduling tutoring sessions.

An article published in Unit4 points out that making online booking systems available to the student body benefits both the students and the administration (Branton, 2016). Analytics provided by the application can alert university staff to problems before they hit critical mass (in both programs at large and for individual students), allowing administration to plan ahead and intervene. Furthermore, tracking student use and engagement through these apps makes grant writing easy, by providing understandable analytics such as retainment, peak demand times, and commonly requested subject areas. “Outdated services can often require teams to dedicate hours pouring over paperwork, which can be a drain on resources,” Branton writes. “Having on-screen analytics means reports that used to take hours can now be generated at the click of a button” (Branton, 2016). Approximately half of the medium-sized schools surveyed (3500-11,000 students) expressed that they had less data than they needed to get a clear picture of their program (Primary Research Group, 2020).

Limiting barriers to entry in tutoring programs is a key factor in ensuring that these programs reach as many students as possible. By using accessible, responsive technology to facilitate finding and booking a tutor, students are more likely to find a match for their needs. A study published in the Reading and Writing Quarterly found that when schools coupled peer tutoring programs with Learning Management Systems that include online messaging and interactive multimedia resources, access and use of the peer tutoring system increased (Abbott, Greenwood, Buzhardt, & Tapia, 2006). Better use of the tutoring system resulted in an increase in student grades and academic confidence, as students were getting more out of their tutoring sessions. Furthermore, a study completed by Unit4 and DJS found that of the students surveyed, 82 percent would be more satisfied if their university had a digital system to help manage administrative tasks (Branton, 2016).

Technology improvements also help tutors provide better services to their clients. As commuter and transfer populations increase at institutes of higher learning, there will be greater need for flexible, on-demand sessions, which can be met with an online tutoring platform (Primary Research Group, 2020). Messaging systems allow students to ask questions as they think of them, which can later be addressed in the tutoring session. Video and blackboard functionalities give tutors the flexibility to communicate in the way that best suits the student, increasing the value of the session.



Drop in session functionality allows for flexible, office-hours type sessions, where students can pop in (in person or online) to have a few questions answered, or stay for the whole session. Finally, tutoring applications can provide prompts to help tutors provide timely, accurate feedback and track students' progress (Wood, Mackiewicz, Van Norman, & Cooke, 2007).

Applying the right kind of platform for the needs of an educational institute will increase the use of the services provided to the students, as well as help tutors develop more effective sessions. The analytics provided by these platforms are useful for informing improvements and changes in tutoring programs, as well as integration with other services. Finally, these systems help save time when it comes to providing feedback reports and grant applications. With custom tailored, easy to implement solutions at your fingertips, improving access to university services is only a click away.

## CONCLUSION

The modern era has brought a multitude of new stressors for students, but also gives more tools to meet these challenges than ever before. Tutoring is known to benefit both the student and the tutor in terms of academic mastery and can also play a key role in lessening the toll academic stress can have on mental health. New technologies, such as the Nimbus Learning platform, can make access to tutoring services simple and easy without increasing the burden on admin staff, increasing the likelihood that students will take advantage of these services. Colleges and Universities across North America have worked incredibly hard to provide a wide range of support services to their students – why not make them as accessible as possible?



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