Why We Will Not Return to Exclusively Face-to-Face Tutoring Post-COVID: Improving Student Engagement Through Technology

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Abstract

Online peer tutoring provided crucial social and academic engagement opportunities for students and peer tutors during COVID-19. This article describes our institution's transition to fully online academic support services and discusses their impact on student learning and retention. While the total number of unique students utilizing tutoring and supplemental instruction decreased slightly during pandemic-induced remote learning, the students who used these services generally made more online visits per person than students who took advantage of in-person tutoring before the pandemic. Although transitioning fully to online tutoring was not without difficulties, we have seen evidence of improved engagement among students and tutors made possible by some of the virtual processes we have put in place. In this article, we discuss these findings in terms of high-impact educational practices and

consider what comes next with online tutoring and student engagement as we return to largely face-to-face classes and student support programs for the fall.

Introduction

In a recent special issue of *The Learning Assistance Review*, learning center leaders from a broad range of higher education institutions shared how they adapted and innovated to provide student academic support services remotely during COVID-19. Some of the authors represented institutions with significant online infrastructure, which enabled a relatively smooth transition to fully remote operation. In contrast, others came from institutions with much fewer online resources and had to hold their centers together through sheer force of will. Yet, regardless of the type and size of the institution, the learning center professionals devised new ways to reach students and support their university communities. The lessons they learned are stories of agility and resilience in the face of an unprecedented public health crisis.

Although the pandemic forced higher education institutions to pivot to remote teaching and learning within a matter of days, online education is by no means a new phenomenon. Colleges and universities have seen steady growth in enrollments in online courses over the last two to three decades. More than a third of higher education students in the United States now take at least one online course. In fall 2018, more than 6.9 million students (or 35% of

the total 19.6 million higher education students) enrolled in any distance education courses at degree-granting postsecondary institutions in the United States (National Center for Education Statistics, n.d.). Students are not only enrolled in online courses but are also participating in a wide range of web-based academic and student services (Meyer, 2014). Therefore, finding ways for students to become and stay engaged through web-based student support services is more important than ever. Even for students completing most of their programs in person, web-based academic and student services can provide them with flexibility and benefits that may not be possible through exclusively on-campus student services. This article discusses one web-based student service, namely online tutoring at the University of Maryland, Baltimore County (UMBC).

Helping students to engage meaningfully with online learning has been a major challenge for higher education institutions during COVID-19. Students have reported having difficulty with: (1) explicit technology issues, (2) attempts to use technology that failed, and (3) poor pedagogical choices and course management practices (Brooks, 2021). In addition, student participation in academic support services has declined dramatically during pandemic-induced remote learning (See, for example, Sorrells & Wittmer, 2020). At UMBC, while the total number of unique students utilizing tutoring and supplemental instruction decreased slightly during remote learning, the students who used these online services

made more online visits per person than students who took advantage of in-person tutoring before the pandemic. Although transitioning fully to online tutoring was not without difficulties, we have seen evidence of improved engagement among students and tutors made possible by some of the virtual processes we have put in place. This article will discuss these findings in terms of high-impact educational practices and consider what comes next with online tutoring and student engagement as we return to largely face-to-face classes and student support programs for the fall. There are important benefits for tutors and tutees from online tutoring that we want to build on, which is why we will not go back to providing exclusively face-to-face tutoring.

Student Engagement and Student Success

A large body of research has shown that engagement in academic activities is strongly linked with student success. According to the Cooperative Institutional Research Program (CIRP), a survey that has been administered to over 15 million incoming college students at over 1,900 institutions over 50 years, the more time and effort students spend actively engaged in academic activities, the more they learn (See also, Astin, 1993). Furthermore, many studies have shown that students' formal and informal interactions with peers and faculty reinforce their integration into the college community, leading to higher degree completion rates (Pascarella & Terenzini, 2005; Tinto, 1993). In

addition, results from the National Survey of Student Engagement (NSSE) have shown that collaborative and active learning promotes student success (Kuh et al., 2006).

As part of a national effort to reform undergraduate education, the American Association of Colleges and Universities (AAC&U) has identified a set of "high-impact educational practices" that may help students engage academically and connect with faculty and peers, including first-year seminars, learning communities, undergraduate research opportunities, service learning, internships and capstone projects in the senior year, practices which require students to integrate knowledge and methods of analysis from several fields of inquiry to explore a real-world problem (Kuh, 2008). "High-impact practices" have also been shown to promote deep learning of content and personal and social development that prepare students well for life beyond college in an increasingly complex and interdependent world (Bok, 2020; Finley & McNair, 2009; Kilgo et al., 2015). Given these positive findings, it is no wonder that many colleges and universities have integrated these practices into their curriculum. The annual National Survey of Student Engagement (NSSE), which collects information from hundreds of colleges and universities annually, found that from 2015 to 2020, almost 60% of seniors had completed at least two "high-impact practices" (NSSE, 2021).

It is important to note that the term "high-impact practices" refers to course formats, such as first-year seminars and capstone projects, and out-of-classroom experiences such as service-learning and research. As Kuh & O'Donnell (2013) point out, high-impact practices share several key qualities, including high instructor expectations, a significant investment of time by students, substantive interactions with peers/faculty, exposure to new experiences with diversity, ongoing and constructive feedback, reflective and integrative learning, real-world applications of learning, and public demonstration of learning. Because many of these qualities are present in peer-assisted learning experiences, we argue that tutoring and supplemental instruction should be considered another form of high-impact practice.

A great deal of research has shown that peer tutoring has a positive impact on student learning and persistence (Arco-Tirado et al., 2011; Bettens et al., 2018; Colver & Fry, 2016; Cooper, 2010; Garcia et al., 2014; Hendriksen et al., 2005; Munley et al., 2010). The benefits of supplemental instruction are shown even controlling for students' prior academic achievement (Bowles et al., 2008; Buchanan et al., 2019; Dawson et al., 2014; Hongtao et al., 2018; van der Meer et al., 2017). But what makes peer tutoring and supplemental instruction so effective? Wilcox & Jacob point out that one of the key components of supplemental instruction is "[providing students] with a structure where they could talk to and

teach each other" (2008, p. viii). Tutors and supplemental instruction leaders coach students on how to learn, providing constructive feedback, and helping students engage with the course material outside of class (Merrill et al., 1995). Because students reflect on their learning and demonstrate what they know to each other, peer tutoring and supplemental instruction provide many of the academic benefits of other high-impact practices and are especially helpful for students who need academic support. The more students engage in educationally purposeful activities, the larger the improvement in their grades, persistence, and graduation rates (Kuh et al., 2006).

Supplemental instruction is a collaborative and interactive learning process at its core, allowing space for discussion of course content and application of learning strategies in a group (Hurley & Gilbert, 2008). Peer tutoring promotes social interaction that leads to co-construction of knowledge and active engagement with course content (Budhai & Brown Skipwith, 2017; Falchikov, 2003). In addition, peer tutors and supplemental instruction leaders, who are also students themselves, benefit from this social engagement, refining their content knowledge, communication, and leadership skills (Stout & McDaniel, 2006).

Many of the benefits of learning assistance translate to online tutoring as well. For instance, college students who had access to online algebra tutoring learned more content and had higher persistence rates than students who attended only face-to-face tutoring (Kersaint et al., 2011). A study comparing online vs. face-to-face supplemental instruction showed that students in both modalities found their tutoring sessions helpful and experienced similar positive effects on their final course grades (Hizer et al., 2017). Furthermore, online tutoring has been shown to increase students' agency in their education (Al Chibani, 2014) and help them commit to learning outside of class in a supportive environment (Herrera Bohórquez et al., 2019). These specific advantages of online tutoring gave us confidence that moving our academic support services online would provide important benefits to students needing academic and social engagement during COVID-19.

Adapting to COVID-19 through Online Student Support

The Academic Success Center provides academic support to all undergraduate students attending UMBC, a public research institution with an undergraduate population in fall 2020 of 10,932 (UMBC, 2021). Before the switch to remote learning in March 2020, almost all student support services at UMBC were offered face-to-face, with students meeting tutors and staff at the Academic Success Center. Students in all 1st and 2nd-year courses and many upper-level courses across all majors and disciplines were tutored in groups led by trained peer tutors, both on a drop-in basis and by appointment. Students made tutoring appointments using our

online tutor scheduling system and met with their tutors in groups of up to 4 students. The Academic Success Center also offered Supplemental Instruction Peer-Assisted Study Sessions (SI PASS), which provided regularly scheduled, out-of-class review sessions for traditionally difficult courses. These sessions allowed students to compare notes, discuss readings, develop organizational tools, and predict test items. In addition, we provided individual appointments with students focusing on academic policy and academic success skills, and our Academic Advocates connected students to university resources that helped enhance their persistence, progression, and degree completion. The Academic Success Center also coordinated early academic alerts and placement testing. Students could access our services in our main office and in the campus library, and make appointments with content tutors, to meet with a Writing Center Tutor for any writing assignment for any course, or drop in at the Math and Science Tutoring Center with questions in math, statistics, biology, chemistry, physics, and economics. These in-person services were widely utilized, helped in part by faculty who routinely referred their students to these services.

Like many campuses, we pivoted quickly to online learning in March 2020. While UMBC's Instructional Technology team trained faculty on effective online teaching strategies, a cross-campus planning team developed a one-stop website **covid19.umbc.edu**

where faculty, staff, and students could access online learning and academic support and campus services. The Academic Success Center was a key contributor to these resources, building videos, guides, and online modules to support online learning and online engagement. We positioned ourselves as a single point of contact for undergraduate student inquiries, directing students to tutoring and academic support. This was motivated by student responses to a wellness check survey administered by the Division of Student Affairs early on during COVID-19. Students reported difficulties with making connections and sought more opportunities to study together and connect socially with other students. Thus, we began to market our Academic Success Center services as an easy way to access academic engagement and social interactions with peers. When our campus closed for spring break in March 2020, the Academic Success Center staff prepared to offer our services fully remotely. We determined the online technologies that would best serve our students, trained our 150 tutors and SI PASS Leaders on how to use the technology, and switched all the scheduling systems from physical rooms to virtual rooms with links where students could easily access their tutors. Finding and retaining tutors was a significant struggle during COVID-19, as our tutors and SI PASS Leaders were students too and were dealing with the stresses of the pandemic in their academic and personal lives.

Despite the difficulties, we offered Content Tutoring and SI PASS Sessions throughout the spring and summer of 2020 and strengthened our asynchronous and synchronous online training for tutors and SI PASS Leaders during the slower summer months. While the tutors had often reviewed material before trainings even before COVID-19, moving more of the content to asynchronous modules in Blackboard during the pandemic allowed us to devote more time during the synchronous training meetings to building community among the tutors and simulating tutoring and SI PASS mock sessions and scenarios. This flipped-classroom approach to training has been well received by our tutors and SI PASS Leaders. Moreover, providing the training using the same technology where the tutors would meet their students later (e.g., Goboard, Google Meet, Jamboard, Blackboard Collaborate) allowed tutors to practice with the technology and learn how it felt both as a tutor and as a tutee.

Building on the lessons learned from spring and summer online tutoring, we re-opened our virtual drop-in math tutoring in the fall, along with a virtual tutoring help desk, where student staff helped students find and access online tutoring services. We also built a new virtual drop-in tutoring program, the Computing Success Center, in collaboration with the Department of Computer Science and Electrical Engineering. Students could click on links on our website, which launched a virtual space where tutors were waiting

to help students with computer programming questions. In the spring of 2021, we extended drop-in tutoring to more science courses, and additional departments and colleges have partnered with us to provide drop-in academic support for their courses. We attribute our success with launching new online tutoring programs relatively quickly during COVID-19 to relationships based on trust and collaboration that we have cultivated with various academic units over the years.

Effects of Online Support

Many institutions experienced dramatic declines in student utilization of tutoring services during COVID-19. At UMBC, while the total number of individual students using online tutoring and supplemental instruction decreased slightly compared to the previous in-person tutoring usage, the students who utilized online academic support during the pandemic made more online visits per person than did students utilizing in-person academic support before 2020. As can be seen in Table 1, students on average made more visits in fall 2020 than they did in fall 2019 for both content tutoring and SI PASS. For content tutoring, there were 5.77 visits per student in fall 2020 compared to 4.86 visits per student in fall 2019, while there were 7.64 visits per student in fall 2020 compared to 6.35 visits per student in fall 2019 for SI PASS. We believe that students took more advantage of academic support during COVID-19 due to recommendations from faculty, our direct outreach to

students in the courses, and the convenience of accessing these services either in the course learning management system (SI PASS sessions were offered in the same Blackboard Collaborate virtual space as course lectures) or via a link students could access easily on our website. In a post-semester survey, we asked students enrolled in SI PASS-supported courses who did not attend SI PASS sessions about the different reasons why they chose not to attend (multiple responses were allowed): 50.27% (92/183) indicated that they wanted to attend but had scheduling conflicts. While we do not have similar data for content tutoring, we infer that even more students wanted to attend academic support than did participate, limited by their multiple responsibilities during COVID-19.

Table 1Numbers of Visit Hours and Unique Students Using Academic Success Center Services - Online Fall 2020 vs. In-Person Fall 2019

ASC Service	Term	Visits	Students	Avg. # of Visits per Student	% of No Shows
Online Content	Fall	2067	358	5.77	12.95%
Tutoring	2020				
In-Person	Fall	2005	412	4.86	14.07%
Content	2019				
Tutoring					
Online SI PASS	Fall	9744	1276	7.64	N/A
	2020				
In-Person SI	Fall	9038	1424	6.35	N/A
PASS	2019				

Data source: UMBC. (2021). REX Data Warehouse Guided Report: Academic Success Center Tutoring Attended. <u>rex.umbc.edu;</u> UMBC. (2021). REX Data Warehouse Guided Report: SI Grade Report. <u>rex.umbc.edu</u>

In addition, students were more likely to attend online tutoring appointments in fall 2020 than in-person appointments in fall 2019 (see Table 1), even with tutoring appointments maintaining the same length of 50 minutes. There were fewer "no shows" seen across student services, including advising, during COVID-19 than before the pandemic. There could be many factors influencing the lower "no show" rate in fall 2020. First, with all learning occurring online, joining a tutoring session was easy from wherever a student was at the time of their appointment. Even if a student had forgotten about their appointment, the reminders that we sent (one day before and five minutes before a tutoring session) would allow a student to simply click a link and attend their session. Also, in fall 2020, there were fewer drop-in online tutoring services available, and this scarcity may have motivated students to keep their appointments more.

Our campus advising offices also reported fewer "no shows" for online advising appointments in fall 2020, likely due to the convenience of clicking a link versus having to travel to campus or across campus to attend an in-person meeting. There was also less pressure for students to attend an online advising appointment because they could choose to turn their camera off and come straight from other activities to an advising appointment. Our campus found that the ease of online advising encourages many students to attend, especially students who are anxious about the

meetings. The benefits we have seen from online advising during COVID-19 have led our campus advising offices to plan to continue offering online advising appointments in addition to in-person advising appointments, giving students maximum flexibility and choice about how to utilize these services. These findings echo the benefits found at other campuses from online advising during fall 2020 (Venit, 2020).

We have both quantitative and qualitative data showing that our online peer tutoring services have positively impacted student learning and retention. As shown in Table 2, we compare retention rates for first-time admitted students (those who were first admitted to UMBC from directly from high school, including freshmenseniors at UMBC). For both student admit-types, those who attended content tutoring and SI PASS had higher retention rates than those who did not attend content tutoring or SI PASS. The retention rates for students utilizing content tutoring and SI PASS were higher, no matter the online or in-person format. We saw similar effects on student retention from participating in tutoring and SI PASS when they were completely online in fall 2020 compared to in-person in fall 2019. Overall, most students earned higher grades during fall 2020, perhaps due to changes in course assessment during online learning. But, even considering the increase in cumulative grade point averages overall, first-time and transfer students who attended SI PASS had higher cumulative

grade point averages than students who did not participate in academic support. In addition to the data presented in Table 2, students who attended SI PASS sessions were more likely to pass their classes (9 percentage points lower D/F/W rate) than students who did not attend SI PASS. These results align with previous campus assessments of the positive effects of tutoring and SI PASS participation on student retention and passing courses, even controlling for student academic characteristics and achievement (Carter, 2017; Gregg, 2018). While the increase in retention for students utilizing academic support is promising and is consistent with the literature (Dawson et al., 2014; Reinheimer and McKenzie, 2011; van der Meer et al., 2017), it is also important to note that students who participated in content tutoring are not very different from the average student at UMBC. First-time admitted students attending content tutoring had similar cumulative grade point averages to students who did not attend tutoring. However, transfer students seeking help had lower cumulative grade point averages than those who did not seek academic support. Students who need help in their courses are more likely to make an appointment to meet with a tutor, explaining the slightly lower grade point averages of students attending tutoring. SI PASS is regularly scheduled support for historically difficult courses. It also attracts many students interested in engaging with the course material, not only those who need extra help.

Online Content Fall 2020 214 3.25 94.42% 132 3.05 89.23 Tutoring Tutoring Fall 2020 5496 3.27 90.36% 3518 3.12 81.95 No Content Tutoring Fall 2019 205 3.17 96.52% 142 2.88 91.85 Tutoring No Content Tutoring Fall 2019 5552 3.17 95.56% 3761 3.04 90.22 Online SI PASS Fall 2020 1270 3.46 97.80% 318 3.04 94.03 No SI PASS Fall 2019 1311 3.25 98.09% 327 2.88 86.21 In-Person SI PASS Fall 2019 1311 3.25 98.09% 327 2.99 93.58 No SI PASS Fall 2019 2539 3.04 95.58 89.16	Attended ASC Service/Did not attend ASC Service	Term	First-Time Admitted Students	Cumulative GPA End of Term First- Time Students	1 Semester Retention First-Time Students	Transfer Admitted Students	Cumulative GPA End of Term Transfer Students	l Semester Retention Transfer Students
Fall 2020 5496 3.27 90.36% 3518 3.12 Fall 2019 205 3.17 96.52% 142 2.88 Fall 2019 5552 3.17 95.56% 3761 3.04 Fall 2020 1270 3.46 97.80% 318 3.04 Fall 2020 2888 3.21 95.26% 812 2.88 Fall 2019 1311 3.25 98.09% 327 2.99 Fall 2019 2539 3.04 95.59% 775 2.80	Online Content Tutoring	Fall 2020	214	3.25	94.42%	132	3.05	89.23%
Fall 2019 205 3.17 96.52% 142 2.88 Fall 2019 5552 3.17 95.56% 3761 3.04 Fall 2020 1270 3.46 97.80% 318 3.04 Fall 2020 2888 3.21 95.26% 812 2.88 Fall 2019 1311 3.25 98.09% 327 2.99 Fall 2019 2539 3.04 95.59% 775 2.80	No Content Tutoring	Fall 2020	5496	3.27	90.36%	3518	3.12	81.95%
Fall 2019 5552 3.17 95.56% 3761 3.04 Fall 2020 1270 3.46 97.80% 318 3.04 Fall 2020 2888 3.21 95.26% 812 2.88 Fall 2019 1311 3.25 98.09% 327 2.99 Fall 2019 2539 3.04 95.59% 775 2.80	In-Person Content Tutoring	Fall 2019	205	3.17	96.52%	142	2.88	91.85%
Fall 2020 1270 3.46 97.80% 318 3.04 Fall 2020 2888 3.21 95.26% 812 2.88 Fall 2019 1311 3.25 98.09% 327 2.99 Fall 2019 2539 3.04 95.59% 775 2.80	No Content Tutoring	Fall 2019	5552	3.17	%95'56%	3761	3.04	90.22%
Fall 2020 2888 3.21 95.26% 812 2.88 Fall 2019 1311 3.25 98.09% 327 2.99 Fall 2019 2539 3.04 95.59% 775 2.80	Online SI PASS	Fall 2020	1270	3.46	%08'.26	318	3.04	94.03%
Fall 2019 1311 3.25 98.09% 327 2.99 Fall 2019 2539 3.04 95.59% 775 2.80	No SI PASS	Fall 2020	2888	3.21	95.26%	812	2.88	86.21%
Fall 2019 2539 3.04 95.59% 775 2.80	In-Person SI PASS	Fall 2019	1311	3.25	%60'86	327	2.99	93.58%
	No SI PASS	Fall 2019	2539	3.04	95.59%	775	2.80	89.16%

those who did not. These numbers may be duplicative as the same student could be enrolled in multiple courses with students enrolled in SI PASS-supported sections, divided into those who participated in SI PASS for that class and graduation in December. Cumulative GPA reported for students who have a GPA. SI PASS numbers report all UMBC. (2021). REX Data Warehouse Guided Report: Advising and Registration Status by Plan. rex.umbc.edu Notes: Students who applied to graduate at the end of the term are not included in the retention rate due to SI PASS support available.

Attended. rex.umbc.edu; UMBC. (2021). REX Data Warehouse Guided Report: SI Grade Report. rex.umbc.edu;

Data sources: UMBC. (2021). REX Data Warehouse Guided Report: Academic Success Center Tutoring

We have qualitative evidence of strong engagement among students and tutors from surveys conducted during fall 2020. Contrary to our fear that students might find online tutoring unsatisfactory, students reported similar levels of satisfaction with online tutoring and SI PASS as face-to-face tutoring and SI PASS. In a post-Content Tutoring survey, 90.67% (68/75) of students stated that they felt more confident in their ability to understand the materials after their conversation with the tutor, and 83.78% (62/74) of students gave examples of concepts, strategies, and study habits they learned in tutoring that they used independently later. Similarly, in a post-SI PASS Session Survey, 90.48% (171/189) of students stated participating in SI PASS helped them improve their performance in the course. In an end-of-semester survey, 96.63% (315/326) of students stated they found SI PASS sessions interactive and/or engaging. Students specifically mentioned how useful the interactive and collaborative features used during the online sessions were and liked having the session recordings for review later.

In addition, open-ended comments from our survey of SI PASS
Leaders gathering their reflections of the impact of the online study
sessions they provided indicate that the online review sessions
helped students engage academically and socially:

SI PASS was a very valuable resource this semester as it helped students engage better with course content and develop not only relationships with other students in the class, but also a reliable resource with leaders. I think this helped students out, especially when struggling in the online setting.

Another SI PASS Leader stated, "Since the semester is online, the opportunity for collaboration among the students are limited. SI PASS was an opportunity for students to come together, collaborate, and tackle chemistry problems in a virtual setting." Other SI PASS Leaders shared that, "For many of the students it was their first semester at UMBC, and they were transitioning to college with very little contact to other students. SI PASS was valuable to facilitate their learning" and that "At the end of the semester, I had students telling me they would not have done as well without attending the sessions."

Tutors and SI PASS Leaders also reaped benefits from their tutoring work online. As mentioned previously, staff strengthened the online synchronous and asynchronous training available for tutors and SI PASS Leaders during the summer. During tutor training, when we asked the tutors about the challenges they faced, the answer that we received most frequently centered around difficulties of offering academic support remotely, including students having trouble with internet connections or with background noise or the platform used for tutoring. Because

students sometimes see tutoring as a panacea for their academic struggles, we took pains to train tutors on the importance of setting clear expectations and achievable goals for each 50-minute session. It takes more time to get concepts across virtually. We also discussed ways for tutors to promote student understanding online since most students kept their cameras off during tutoring and tutors could not rely on cues from students' body language.

While training on the technical solutions for tutoring was paramount, tutors also needed help with how to be intentional with their questioning and active learning techniques, increasing their wait time and keeping the students engaged. The online training format also allowed more tutors to attend training sessions, which helped improve their work as tutors and created important opportunities for community development. The SI PASS Leaders competed in a contest during training for the best mock-session and planning sheets, which they found fun and engaging. We worked with the tutors and SI PASS Leaders to build Discord Channels where they could engage online. We organized game nights, allowing for more social interaction, which became a key benefit to our peer tutors, as they were also students in need of connection with their fellow students. In the end-of-semester survey about their experiences, one SI PASS Leader reflected:

It definitely has been a positive experience to lead in SI PASS!

During the tough times with quarantine, I enjoyed coming

together with other members and have fun mock sessions. It made me destress for a moment. I also enjoyed working with students for physics and helping them solve challenging problems.

Almost all tutors reported that their confidence has grown from tutoring online. In response to an end-of-semester survey of tutors about their experiences tutoring online, 95.83% (46/48) agreed that they feel confident in their ability to motivate students to engage in subject matter/tutoring sessions, 91.67% (44/48) stated that they routinely model study strategies/resources, and 91.67% (44/48) said that they could effectively support students from a variety of backgrounds/learning styles. One tutor shared in a survey response: "I think my tutoring has helped me become a more confident student. It has made me more comfortable collaborating and interacting with other students and has also increased my confidence in my proficiency in the areas I tutor."

Implications for Future Practice

Given the benefits of online tutoring, we will continue to offer a significant proportion of our tutoring and SI PASS sessions remotely even after the pandemic. The growth we have seen in participation in online academic support is promising, especially because students were more likely to attend the sessions regularly online than during face-to-face tutoring. We are pleased to report

that UMBC has provided an Innovation Grant to help us fund additional online and in-person SI PASS sessions and to research the effects on student success from online compared to in-person review sessions, both during remote instruction and after we return to in-person classes.

We plan for socially distanced instruction on campus for fall 2021, which lowers the density allowed in our tutoring spaces. A typical SI PASS exam review session draws over 100 students, which may not be feasible in-person, given new socially distanced campus room capacities. But fall 2020 has shown us that students will take advantage of online support, and so we can continue to offer review sessions remotely without having to find physical spaces. We believe that the growth in student participation in tutoring and SI PASS in fall 2020 was due to the convenience and flexibility that online services provide (See also, Rous, Mozie-Ross, Shin, & Fritz, 2021). In a typical semester, fewer than half of our students live on campus. As a result, many students would appreciate not driving back to campus for an evening tutoring appointment or weekend review session. Further, online academic support platforms allow for easy recording and sharing of tutoring and SI PASS sessions, a useful review tool that students can return to or take advantage of if they cannot attend synchronously.

We believe that the effort we have invested in online training for our tutors and SI PASS Leaders will continue to generate dividends beyond fall 2021. SI PASS Leaders benefit from the flipped classroom approach to training, allowing them to learn content asynchronously before the synchronous applied learning simulations. Providing training online allows for the same flexibility for our tutors as online tutoring does for our students. An added benefit is that training tutors and SI PASS Leaders within the platforms they would use for tutoring gives them useful insight into the student experience while allowing them to practice with the platforms they will use. Their confidence of knowing what to do when one platform does not work for their students helps tutoring sessions run more smoothly. Additionally, we will continue to use the online tutor and SI PASS Leader communities we have built to allow them to share tips, answer questions, and connect with our staff easily.

Conclusion

Our assessment data from 2020 indicate that students would utilize online tutoring and SI PASS sessions, with similar levels of participation and positive effects on retention and student success as in-person tutoring and SI PASS sessions. The flexibility of being able to access services from anywhere is a key benefit of online student support. We plan to extend our reach by adding online tutoring appointments in the evenings and weekends when our inperson offices are closed. The added flexibility of online SI PASS

sessions will also allow more students to access these academic support services than would be possible on campus, given the requirements of social distancing. While many of our classes will return to in-person instruction this fall, some students will participate in hybrid or online learning, a trend that will only grow over time. We believe that online tutoring and SI PASS will be an integral part of how these students engage academically and socially. By positioning our Academic Success Center services as easy-to-access peer support, we are removing barriers to student success and normalizing help seeking among students. More importantly, we are meeting students where they are—online.

References

- Al Chibani, W. (2014). The effectiveness of online and one-to-one tutoring in the writing center on the students' achievement: A multiple case study. *International Letters of Social and Humanistic Sciences*. 41. 192-197. https://doi.org/10.18052/www.scipress.com/ILSHS.41.192
- Arco-Tirado, J., Fernández-Martín, F., & Fernández-Balboa, J.-M. (2011). The impact of a peertutoring program on quality standards in higher education. *Higher Education*, 62(6), 773-788. https://doi.org/10.1007/s10734-011-9419-x
- Astin, A. W. (1993). What matters in college. Liberal Education, 79(4), 4-15.
- Bettens, K., Verbrugge, A., Aper, L., Danneels, L., & Van Lierde. K. M. (2018). The impact of a peer-tutoring project on academic learning skills in speech-language pathology students. *Folia Phoniatrica et Logopaedica*, 70(3/4), 109–116. https://doi-org.proxy-bc.researchport.umd.edu/10.1159/000491080
- Bok, D. (2020). *Higher expectations: Can colleges teach students what they need to know in the 21st century?* Princeton and Oxford: Princeton University Press.
- Bowles, T. J., McCoy, A. C., & Bates, S. (2008). The Effect of Supplemental Instruction on Timely Graduation. *College Student Journal*, 42(3), 853–859.

- Brooks, D. C. (2021). Student Experiences Learning with Technology in the Pandemic. Research report. Boulder, CO: EDUCAUSE, April 2021. https://www.educause.edu/ecar/researchpublications/2021/student-experiences-learning-with-technology-in-thepandemic/introduction-and-key-findings
- Buchanan, E. M., Valentine, K. D., & Frizell, M. L. (2019). Supplemental instruction: Understanding academic assistance in underrepresented groups. *Journal of Experimental Education*, 87(2), 288–298. https://doi-org.proxy-bc.researchport.umd.edu/10.1080/00220973.2017.1421517
- Budhai, S. S. & Brown Skipwith, K. (2017). Best Practices in Engaging Online Learners Through Active and Experiential Learning Strategies. New York: Routledge.
- Carter, C. (2017). Effect of math lab tutoring on course pass rates. [Poster presentation]. UMBC Provost's Teaching and Learning Symposium.
- Colver, M., & Fry, T. (2016). Evidence to support peer tutoring programs at the undergraduate level. *Journal of College Reading & Learning*, 46(1), 16-41. https://doi.org/10.1080/10790195.2015.1075446
- Cooper, E. (2010). Tutoring center effectiveness: The effect of drop-in tutoring. *Journal of College Reading and Learning*, 40(2), 21-34. ERIC. https://eric.ed.gov/?q=EJ887303
- Dawson, P., van der Meer, J., Skalicky, J., & Cowley, K. (2014). On the effectiveness of supplemental instruction: A systematic review of supplemental instruction and peerassisted study sessions literature between 2001 and 2010. Review of Educational Research, 84(4), 609–639.
- Falchikov, N. (2003). Learning together: Peer tutoring in higher education. Routledge.
- Finley, A., & McNair, T. (2009) Assessing underserved students' engagement in high-impact practices. Washington, DC: Association of American Colleges and Universities. http://leapconnections.aacu.org/system/files/assessinghipsmcnairfinley-0.pdf
- García, R., Morales, J. C., & Rivera, G. (2014). The use of peer tutoring to improve the passing rates in mathematics placement exams of engineering students: A success story. *American Journal of Engineering Education*, 5(2), 61–72.
- Gregg, D. (2018). SI/PASS helps students pass their class: Propensity score assessment. [Poster presentation]. Presented at UMBC University Retreat.
- Hendriksen, S. I., Yang, L., Love, B., & Hall, M. C. (2005). Assessing academic support: The effects of tutoring on student learning outcomes. *Journal of College Reading and Learning*, 35(2), 56-65. https://eric.ed.gov/?id=EI689654
- Herrera Bohórquez, L. I., Largo Rodríguez, J. D., & Viáfara González, J. J. (2019). Online peertutoring: A renewed impetus for autonomous English learning. *HOW*, 26(2), 13–31.

- Hizer, S., Schultz, P., & Bray, R. (2017). Supplemental instruction online: As effective as the traditional face-to-face model? *Journal of Science Education and Technology*, 26. https://doi.org/10.1007/s10956-016-9655-z
- Hongtao Yue, Sangha Rico, R., Mai Kou Vang, & Aquino Giuffrida, T. (2018). Supplemental instruction: Helping disadvantaged students reduce performance gap. *Journal of Developmental Education*, 41(2), 18–25.
- Hurley, M., & Gilbert, M. (2008). Basic supplemental instruction model. In M. E. Stone & G. Jacobs (Eds.), Supplemental instruction: Improving first-year student success in high-risk courses (Monograph No. 7, 3rd ed., pp. 1-9) Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Kersaint, G., Dogbey, J., Barber, J., & Kephart, D. (2011). The effect of access to an online tutorial service on college algebra student outcomes. *Mentoring & Tutoring: Partnership in Learning*, 19(1), 25–44.
- Kilgo, C. A., Ezell Sheets, J. K., & Pascarella, E. T. (2015). The link between high-impact practices and student learning: Some longitudinal evidence. *Higher Education: The International Journal of Higher Education and Educational Planning*, 69(4), 509-525.
- Kuh, G. D. (2008). High-impact educational practices: What they are, who has access to them, and why they matter. Washington, DC: Association of American Colleges and Universities.
- Kuh, G. D., Kinzie, J., Buckley, J., Bridges, B., & Hayek, J. (2006). What matters to student success: A review of the literature. Commissioned report for the National Symposium on Postsecondary Student Success: Spearheading a Dialog on Student Success. https://nces.ed.gov/npec/pdf/Kuh Team Report.pdf
- Kuh, G. D. & O'Donnell, K. (2013). Ensuring quality and taking high-impact practices to scale. Washington, D.C: Association of American Colleges and Universities.
- Merrill, D. C., Reiser, B. J., Merrill, S.K., and Landes, S. (1995). Tutoring: Guided learning by doing. *Cognition and Instruction*, 13(3), 315–372.
- Meyer, K.A. (2014). Student engagement online: What works and why. Wiley Subscription Services, Inc., A Wiley Company, at Jossey-Bass.
- Munley, V. G., Garvey. E., & McConnell, M. J. (2010). The effectiveness of peer tutoring on student achievement at the university level. *American Economic Review*, 100(2): 277– 282. https://doi.org/10.1257/aer.100.2.277
- National Center for Education Statistics. (n.d.). Fast facts: Distance learning. https://nces.ed.gov/fastfacts/display.asp?id=80
- NSSE. (2021). *High-impact practices:Iinterrogating quality and equity*. https://nsse.indiana.edu/research/annual-results/hips/index.html

- Pascarella, E. T., & Terenzini, P. T. (2005). How college affects students: A third decade of research. San Fransisco, CA: Jossey-Bass.
- Reinheimer, D., & McKenzie, K. (2011). The impact of tutoring on the academic success of undeclared students. *Journal of College Reading and Learning*, 41(2), 22–36.
- Rous, P. J., Mozie-Ross, Y., Shin, S. J., & Fritz, J. (2021). A pandemic silver lining: Helping former students finish degrees online. EDUCAUSE Review, April 8, 2021. https://er.educause.edu/articles/2021/4/a-pandemic-silver-lining-helping-former-students-finish-degrees-online
- Sorrells, D. & Wittmer, C. (2020). Reflections on transitioning to remote learning assistance during COVID-19 and possible implications for the future. *The Learning Assistance Review:* Special Issue, 25, 41-48.
- Stout M.L., McDaniel A.J. (2006). Benefits to supplemental instruction leaders. *New Directions for Teaching & Learning*, 2006(106):55-62. doi:10.1002/tl.233
- Tinto, V. (1993). Leaving college: Rethinking the causes and cures of student attrition (2nd ed.). Chicago: University of Chicago Press. (Ebook).
- UMBC. (2021). REX data warehouse guided report: Academic success center tutoring attended. rex.umbc.edu
- UMBC. (2021). REX data warehouse guided report: Advising and registration status by plan. <u>rex.umbc.edu</u>
- UMBC. (2021). REX data warehouse guided report: SI grade report. rex.umbc.edu
- van der Meer, J., Wass, R., Scott, S., & Kokaua, J. (2017). Entry characteristics and participation in a peer learning program as predictors of first-year students' achievement, retention, and degree completion. *AERA Open*, *3*(3).
- Venit, E. (2020, August 24). Is virtual advising here to stay? EAB. https://eab.com/insights/blogs/student-success/permanent-virtual-advising/
- UMBC. (2021). Welcome to UMBC. https://about.umbc.edu/
- Wilcox, F. K, & Jacobs, G. (2008). Thirty-five years of supplemental instruction: Reflections on study groups and student learning. In M. E. Stone & G. Jacobs (Eds.), Supplemental instruction: Improving first-year student success in high-risk courses (Monograph No. 7, 3rd ed., introduction) Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.