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Original Research

Pandemic Pivots in Teacher Education: Creating and Sustaining the New Normal

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Abstract

This article documents how one Teacher Preparation Program (TPP) at a medium-sized public university in the northeast responded to the needs of their urban partners during the global COVID-19 pandemic. The adaptation of this school-university partnership involved improving relationships where the TPP is more responsive to the needs of this urban school district. This article showcases how two colleagues created *pandemic pivots* in their graduate courses for in-service teachers. These pedagogical examples, or *pandemic pivots*, knit together technology and Social Emotional Learning (SEL) and create a more inclusive and more equitable new normal. Moreover, these *pandemic pivots* leverage programmatic mechanisms to sustain this new normal. The sustainability and success of this partnership makes use of stakeholder feedback loops which are both programmatic and interpersonal. Through institutionalizing these feedback loops, we create programmatic sustainability with the ability to dynamically meet the needs of our partners. The integration of SEL and technology pedagogical practices illustrated here are the result of programmatic structural changes driven by the voice of our partners, showcasing the design of our TPP.

Keywords: pandemic pivots, social emotional learning, SCARF model, *lectio divina,* sustainability

Introduction

As a public research university, the mission of University of Massachusetts Dartmouth (UMassD) is to provide high impact learning experiences and engage in innovative research resulting in personal and lifelong student success. Our Teacher Preparation Programs (TPP) are committed to the preparation of urban educators who have a sensitivity toward multicultural issues, an awareness of the needs of schools, and knowledge of the unique needs and styles of individual learners. The TPP at the UMassD recently shifted its master's in teaching (MAT) programming to focus strategically on developing urban educators. Our primary partner school districts, Fall River Public Schools and New Bedford Public Schools, are the significant stakeholders, and both districts report issues of high teacher turnover rates and student underperformance. The intentional design of the new TPP is a responsive model, one designed to meet our urban partners' needs and focused on long-term teacher retention and improved student success. Almeida and Hall (2021a) write about this partnership showing that "the logistical aspects of this innovation school–university partnership and program are responsive to, rather than in competition with, the realities and professional obligations of in-service teachers" (p. 371). Moreover, our TPP requires thoughtful and skilled professionals to monitor, analyze, and modify their practices in an ongoing process of reflection and action effectively integrating both theory and practice, being responsive to our school partners' needs. This model underlines their commitment to reflective practice and developing culturally aware, effective, urban teacher candidates in their content and practice.

Our initiatives include the Teacher Education Advisory Board (TEAC) at the programmatic level, allowing for continuous two-way communication between our partners and ourselves and the development of instructional consultants positions at the course level. Instructional consultants (IC) are a cornerstone to strengthening and growing the partnership between UMassD and K-12 partners. District leadership are tasked with identifying qualified district personnel to serve as paid ICs collaborate with faculty in the delivery of on-site coursework. ICs work alongside university faculty to co-construct course objectives in alignment with the partner district goals. ICs also collaborate with university faculty in the delivery of MAT courses to ensure course objectives target specific content and pedagogical strategies identified as high impact in the urban classroom. Both the TEAC and the IC roles serve to improve feedback to UMassD's TPP in the development and deployment of the course and program. The TEAC also act effectively as gatekeepers into the profession by selecting candidates for admission and providing input on standards for program completion (Clinton, 2019). The stakeholder composition of the TEAC is critical its sustainability as a feedback mechanism for the partnership. Clinton, (2019) found the greater participation of school-based leadership (teacher leaders) increased the sustainability of the TEAC when compared to other advisory committees whose composition retained a greater number of central office personnel (superintendents). As a result, at UMassD the TEAC is made up of seven out of 11 members are school-based leaders, one is a central office leader, and three are university faculty. The elevation of agency of school-

based leadership on the TEAC allows for opportunities to initiate and sustain long-term changes and provide a feedback mechanism evaluating changes in the TPP. As district leadership and central office personnel often change, at rates equivalent to 20% per year in the surrounding partnership districts (Clinton, 2019), having an TEAC who will guide and then benefit from changes in the TPP reinforces a new normal. In this new normal where the traditional power dynamic of the University providing guidance to the school partner, (Clinton, 2019) is reversed and the school-based leadership provide goal setting for the faculty of the TPP. Finally, both the TEAC and ICs operate as professional networks influencing whether teacher candidates obtain positions in the partner schools. This has a positive impact on retention rates (Goldhaber & Cowan, 2014; Krieg et al., 2016). By leveraging the input from these roles, it provides a feedback loop motivating UMassD on maintaining our school partners' new normal.

Early in the COVID-19 pandemic, a TEAC meeting was convened to address what changes the TPP should be made to better support urban K-12 partners and address their identified needs. The conversation was structured with a focus on short-term and long-term needs. The short-term needs focused significantly on pedagogical training for both in-service and preservice candidates to specifically meet the diverse needs of students in the new online environment. In addition, the TEAC discussed long-term issues of disruption between school culture and broader community. Students in online environments were feeling disconnected from their learning communities further impeding their academic development. Conversations quickly turned to how the TPP could pivot modifying their own curriculum to include pedagogical strategies in the new online learning landscape while also meeting the identified need SEL and maintaining community and cultural relevancy. It was these targeted conversations around the district identified goals both long and short-term which drove the development of these strategies and their implementation in the TPP.

During the COVID-19 pandemic, both the TEAC and IC roles played essential elements in identifying the changes necessary for the preservice and in-service teachers to be successful in the pandemic classroom. The new normal in this paper represents an ideology of never letting a crisis never letting a crisis pass without consideration of challenges and solutions. The pandemic created new inequities but also significantly underscored pre-existing conditions which had long gone unaddressed by stakeholders. Sustainable initiatives such as TEAC, the ICs, and a more robust integration of social emotional learning with technology served to strengthen the university and urban K-12 relationships' during the pandemic and developed a more supportive and responsive learning community.

Pandemic Pivots: Movements for Fostering Structural Change

Although there were many downsides to the pandemic, there are also new insights which emerged. Ailwood and Lee's (2020) insights highlighted that "care is essential to the sustenance of all our lives." They point out the varied responses to COVID-19 lockdowns created significant "educational equity issues" (p. 309). White and McCallum (2021) explored the need for resilience in teaching and learning. During the pandemic, teachers were forced to find new ways to integrate technology, engage their students, continue to develop healthy relationships with their students, and expected to make strides in content learning. The *pandemic pivot* examples illustrated in this article demonstrate how teacher educators found dynamic ways to inextricably link Social Emotional Learning (SEL) with technology. New learning models, integrating SEL with technology were needed, and these models also must address equity issues raised during the pandemic.

Historically, SEL and technology have been disconnected. SEL, seen as essential to success in teaching and learning, includes self-care, emotion management, and healthy relationship building (Jennings, 2015). Likewise, technology practices, including presentation, gamification, and exploration were centric to success in the online delivery of content. Prior to the pandemic, technology was emerging in importance, but not viewed as critical to instruction. During this pandemic pivot, technology offered the only means to access content and became critical to delivery. SEL skills, when integrated with technology delivery in the classroom, became instrumental to success during the pandemic.

Pandemic Pivot Examples

The *pandemic pivots* outlined below were designed to help in-service teachers find success in our graduate courses and demonstrate their learning during the pandemic. We modeled teaching approaches as templates that our teachers could try out and replicate in their own K-12 classrooms. Though we as teacher educators have different content backgrounds; Chris has a doctorate in STEM Education and taught science in K-12, and Maureen has her doctorate in English education and taught English in K-12. We both teach pedagogical courses for our cohorts of urban teachers. What follows are examples of *pandemic pivots* that each of us innovated over the pandemic in response to the needs of our school partner districts.

Pandemic Pivot 1

Our school partners tasked our TPP to embed in our coursework more SEL strategies as deployed through technology. What became clear after some discussion with the ICs and TEAC was the need for a framework to allow teacher candidates to be mindful of how different instructional practices impacted students socially and emotionally. The SEL framework employed in this strategy was grounded in David Rock's SCARF model (Rock, 2008). This

model presents five domains which can have an impact on a person's perception of their own social emotional status within a situation. The domains are *Status*, which refers to one's sense of importance relative to others; *Certainty*, which refers to one's need to make clear and accurate predictions about their environment; *Autonomy*, or the sense of independence one gets having control over events or impact on the outcome of a situation; *Relatedness*, defined as having a connection to the material and or others; and *Fairness*, which is the perception of unbiased exchange. These elements, when incorporated into technology and instruction in the classroom, can alleviate most students' social concerns, allowing them great opportunity for classroom engagement (Rock and Tang, 2009). For my pandemic pivot, I used the SCARF model as my theoretical framework and incorporated the website Classcraft into my instructional design for the MAT coursework in response to the urban teachers' needs.

Classcraft is a gamification of a traditional Google Classroom site. Gamification is a multidisciplinary tool which tries to create a motivating, engaging and emotionally positive context for learning. The simplistic Google Classroom interface is gamified, embodying elements of the SCARF framework. One reason for gamification is research indicating participating in the game and learning are similar neurological mechanisms (Lee, and Hammer, 2011). The Classcraft overlay allows for a culturally responsive narrative integrated with classroom competencies and multiple opportunities for students to exercise control over their experience. Many facets of the Classcraft experience align with the SCARF and an SEL framework (Elias, 2018). As Membrive and Armie (2020) point out, the Classcraft environment stimulates engagement in activities related to the content of the course. In addition, Rozhenko, Darzhaniya, Bondar, & Mirzoian, (2021) found, "psychological climate at the lesson has changed enormously: equanimity, constraint disappeared, interest, 'sparkle in the eyes' appeared" (p.463) when Classcraft was integrated as part of the Google Classroom interface. Both papers directly reference an increase in students motivation linked to their multiple opportunities to positively augment their *Status* as the game progresses. Competencies and classroom assignments scored on game points allow for greater customization and progression also are linked to positive student outcomes. Because the Classcraft overlay integrates with the existing Google Classroom, the students and teachers have a sense of *Certainty* around assignments and expectations. Student's progress on various Quests within the program allowing for *Autonomy* and differentiated instruction. The narrative of the Classcraft experience can be modified by the teacher to create *Relatedness* and integrate cultural competencies (Elias, 2018). Finally, the expectations and point systems are clear and modifiable to be *Fair* to students who participate. This flexibility and customization of the overlay allows for greater intrinsic motivation of students in the corresponding course materials and fosters increased social engagement over traditional Google Classroom structures (Bonvin & Sanchez, 2017). By using the elements of Rock's SCARF model, urban educators can predetermine if the technology integration in their course will adequately meet the social emotional needs of their students.

The *pandemic pivot* is the use of the SCARF framework as an evaluative tool for technology integration to better understand how students' social and emotional responses will be engendered with these tools. Using the SCARF model as a social emotional framework allows practitioners predict how students will interact and potentially respond to the technology tools before their implementation in the classroom. Questions practitioners would ask might include, "Does the interaction with this technology potentially increase the status of the student?"; "Is there significant autonomy in this assignment using this technology tool to allow the students to determine how they reach the outcome? "; "Is the content and the integration of technology enhancing the relatedness of the material to the student?"; and "Are the outcomes when using this technology either a stretch and within reach or even just beyond reach of the students and considered by the students to be a fair measure of their effort?" The SCARF model as a framework serves to allow the practitioner the opportunity to think of points where students would traditionally disconnect from the learning, especially when isolated in an online setting. Using the SCARF model minimizes potential negative interactions between the pedagogical strategies employed by the teachers with their students. The new normal will be using the SCARF framework for multiple pedagogical strategies regardless of the technology employed.

Pandemic Pivot 2

The co-author teaches a course called EDU 525 Critical Literacies*,* which has four main themes: Critical Literacies, Social Emotional Learning (SEL), Place-Based Learning (PBL), and Global Citizenship. SEL is one of the district goals from our partner school district in Fall River, Massachusetts.

Over the pandemic, *lectio divina* was used as a pedagogical tool in EDU 525 over Zoom. *Lectio divina* is part of a contemplative pedagogy with ancient roots. *Lectio divina*, as a *pandemic pivot*, became a conduit for in-service teachers to understand both issues of power and equity, along with how they might modify *lectio divina* for use with their own students. *Lectio divina* is an ancient tool for understanding texts. With religious roots, it has adapted secular forms for twenty first-century classrooms (Dalton, Hall, & Hoyser, 2019). By choosing short passages for discussion, *lectio divina* was utilized as a communal reading process and "vehicle" for transformative dialogue. Moreover, *lectio divina* models empathic and dialogic teaching (Tan, 2021) and mindful learning through literacy.

As Dorman (2019) points out, "Contemplative practices such as *lectio divina* implemented in teacher education allow an integrated, embodied approach for learners to unwind the conditioned mental habits of racism, prejudice, white supremacy, colonization, microaggressions, and other forms of oppression that cause harm and suffering" (p. 72). Through the *lectio divina* process, students learned how to do deep listening and open themselves to new understandings of difference and possibilities for social action.

More specifically, in fall 2020 the co-author collaborated with two education colleagues from UMass Lowell and UMass Boston using *lectio divina* as an anti-racist pedagogy. In preparation for our session (Bifuh-Ambe, Hall, & Lopes-Mendes, 2020) in CUMU's Learning & Sharing Virtual Series, she invited Elizabeth Bifuh-Ambe of UMass Lowell and Tyra Lopes of UMass Boston each to join one of her EDU 525 class sessions when they were using *lectio divina* as an anti-racist pedagogy. In October 2020, Professor Bifuh-Ambe was a guest and Langston Hughes' poem, "A Dream Deferred " was used as the text for this pedagogical intervention with *lectio divina*. Together with Professor Bifuh-Ambe, they innovated using *lectio divina* as both an anti-racist pedagogy and a critical literacy pedagogy. As part of the *lectio divina* step of *oratio* (response), students were assigned to Zoom breakout rooms with a partner. In the breakout rooms, students were instructed to deep listen to their partner's response. Students brainstormed actions they could take to promote anti-racism and help each other to become social justice allies. Each partner would then share the other's response when returning from the breakout rooms. Students wrote reflections about this experience, and one student shared:

> In my experience with using lectio divina to analyze "A Dream Deferred," we were encouraged to take our time in reading and hearing a text, letting it wash over us and settle into the cracks of our consciousness. Through this, we heard the words differently than before: the symbolism and imagery became richer, more relevant and meaningful as we mapped it onto our own experiences, or imagined how they made others feel…*Lectio divina* allowed for multiple means of expression as well, something that is incredibly important in creating a more inclusive classroom: we listened to the text and our partner's reflections, drew how it made us feel, or sometimes created our own poems in response and read them aloud to the class (Serena Campbell, personal narrative, October 25, 2020).

Campbell experienced literacy as a new window into herself and others. Through *lectio divina* as a conduit, she experienced another way to build inclusivity. Empathy, as part of SEL, is evident. Students can step into another's shoes and understand their perspective. Teaching understanding through literacy improves all human relations.

Leveraging the technology provided by Zoom, the breakout rooms allowed for deep listening between partners and helped to model and promote SEL for participants. The pandemic pivot of instituting *lectio divina* and deep listening as a new normal was essential having teachers replicate this process in their classrooms increased student engagement and by using poems by Langston Hughes and Rita Dove it created new opportunities to engage in discussions about racism and the possibilities for creating a greater sense of equity in the classroom.

Conclusion

Over the pandemic, it was relationships between teachers and students which were critically important. Technology was the conduit for creative connection. The separate entities of SEL and technology must now be integrated (Bonanni et al., 2006). Our *pandemic pivot* examples bring technology together in concert with SEL in response to the needs of our urban school partners. Responding to the critical needs of students and teachers, our *pandemic pivots* represent a means to begin answering the call for holistically integrating SEL and technology and then maintaining those integrations post pandemic.

Our integrated TPP stands alongside this conceptual integration of SEL and technology. Almeida and Hall (2021b), write about this same school-university partnership and characterize it as "bi-directional" and symbiotic in the best ways. They add that "Together, the university and the school collaboratively design and embed elements that positively impact teacher retention and effectiveness" (p. 172). In responding to our partners call for connecting SEL and technology in different pedagogical ways, we demonstrate our progress and visualize next steps. Evaluation of the impact of these pandemic pivots and the implementation of this new normal is underway. Initial qualitative interviews with ICs have determined they have reviewed the performance of the in-service candidates in the TPP and they found that our candidates had a significant impact on their classroom students when compared to ways their peers integrated technology and SEL. Also, the TEAC was also surveyed in the summer of 2021 examining the impact of the pivot. Responses from the TEAC indicated overwhelming support for the new normal and where possible, looking for opportunities to expand. Quantitatively, in-service teachers in the TPP have asked their students to rate their effectiveness multiple times over the semesters of fall 2020 and spring 2021. Using repeated ANOVA analysis, we seek to understand the impact of these practices as perceived by students in urban classrooms. Data and study results continue to be measured and readied for publication in 2022.

What is not completely clear is whether this pandemic has just shown a light on the persistent inequities or provided unique opportunities to address the root causes of these persistent equities. What is true is that our work with partner schools continues. We strive for innovation in our approaches to teacher education and understand how important it is to deepen our relationships with the schools and our university. We seek dynamic ways to serve as an anchor for our teachers and the larger community. The true *pandemic pivot* was the centralization of our urban partners' voices and the new normal is an improved TPP meeting the dynamic needs of those partners.

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Original Research

Can COVID-19 Reopening Plans Mitigate Cycles of Residential Displacement?

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Abstract

This article uses interviews of long-standing neighborhood residents' sentiments of university expansion into their community. These data provide persuasive empirical evidence for the need of urban anchor institutions to include as an integral component of their campus reopening efforts, intentional plans for reducing the disruption of housing patterns of permanent residents. The term *COVID exposure* has come to signify not only the potential to succumb to the virus, but it also implies the revealing of inequities in systems that impact the effects of the crisis within Black and Brown communities. Every sector of U.S. society has been impacted by COVID-19, and it has required a paradigm shift in our interactions with one another. Academic institutions are enacting robust de-densification efforts which will stimulate dramatic shifts in the off-campus housing needs for students, but they stand the chance of displacing or further disadvantaging the long-standing residents who reside outside of their campus border. Universities must use reopening plans as an instrument to change the trajectory of relationships they hope to cultivate with their long-standing neighbors, through renewed engagement efforts that integrate lessons from the past and that seek to build stronger neighborhoods by challenging housing inequity and housing inequality.

Keywords: African American, anchor institutions, COVID-19, gentrification, displacement, housing, town and gown

It's very distressing to know that people who grew up in this neighborhood have had no access to the new developments. I'm not sure if they're refused rental when they ask or if the policy is for students only. For YEARS. What I do know is that last year during the pandemic was the first time I noticed one family, one Black family with children in one of the multi-unit apartment buildings that rent to students. That was really very different because it's all students all the time. It's annoying.

- Long-Standing Community Resident

The expected "de-densifying"—reducing the number of students in each bedroom—of on-campus housing is expected to drive increased demand for off-campus housing.

- Frederick W. Pierce, Pierce Education Properties

Introduction

The dynamic existing between urban anchor institutions and the neighborhoods which border their campuses has historically been fraught with tensions. In neighborhoods which consist largely of African American residents possessing low wealth, universities have been perceived by residents as culpable for the displacement of their neighbors who have not been able to maintain possession of their homes, and the gentrification of their neighborhoods where they have lived most of their lives. The 2019 study *In My Neighborhood but Not for Me*, (Thomas-EL, 2019) explores the perceptions residents hold about the expansion of Fourdlet University (pseudonym) into the residential community of Greatland (pseudonym). Some of the more emphatic sentiments expressed surrounded the issue of housing, as they considered inextricable, the connection between the expansion of the university and the displacement of their neighbors. These sentiments defined the theme *Disrespecting the Community* and have shaped their feelings about the local academic institution.

Conducted two-years prior to the COVID-19 pandemic, this study of residents who have lived in Greatland, which borders Fourdlet University, a large private, anchor institution for at least twenty years, details the frustrations they hold concerning their inability to partake of services and amenities which are deemed inaccessible in their midst. Sandy, a recent graduate student, relayed her experience of attempting to rent an apartment close to her family while pursuing her studies. She was not a student of the bordering anchor institution, and that detail created her perceived barrier. She shares:

> [T]hey build beautiful apartment buildings, it would say "students only." You couldn't apply there if you wanted. You couldn't live there if you wanted to. It literally had signs saying student only apartments. Student only housing. And you're like wait a minute, I lived here more than they did.

Sandy was not alone in her experience. Lavon, one of the more senior participants of the study, expressed his offense surrounding exclusion of individuals who are not students. He perceives rejection as that of discrimination:

> You could probably rent from a person that own[s] the property who rent to students, but I couldn't. In my own neighborhood...and I say right to this day, that's discrimination. It is discrimination! It is. One hundred percent. It says that you own a property...that you cannot rent from me because (pause). If I'm qualified, what makes me not qualified to rent in those apartments? You try to rent, they say if you don't have a student pass or anything, you cannot rent from me. That's discrimination. That's housing discrimination. Yeah.

Insufficient data exists to determine the level to which neighborhood residents have been afforded opportunities to assume vacant apartments during the pandemic; however, the leading quote above which details the observation of one family in an apartment traditionally held for students, suggests that this may not be an isolated incident. The observation provoked a conversation about housing in the neighborhood during a recent encounter with a resident who has lived in Greatland for over forty years, giving rise to the consideration of how COVID-19 has transformed the enduring reality residents situated near urban universities. It is important to note that this geographic location like so many other urban areas where African Americans comprised the majority of the population, was one that had been gifted in the late 1940s by the city's Redevelopment Authority to Fourdlet University, to support the university's projected student population increase by 1970. The familiar pattern of disinvestment and decline (Lloyd, 2016; Lucas, 2013; Redfern, 2003) which precedes a gentrifying community prevailed over a forty-year period, as the university sought to develop ways to secure its own financial solvency. One idea for achieving this was to alter the perception of the university as a commuter school to being a predominately residential school, thus increasing the need for more student housing (Gollotti, 2009; Hoffman, 2012; University Archives, n.d.). Prior to 1990, the neighborhood of Greatland was nearly 98% African American, with no documentation of White, undergraduate students residing in the neighborhood. The announcement of image transformation by the university's president in the early 1990s prompted a shift in students' willingness to extend their living boundaries beyond the main campus and into areas that still kept it accessible by walking. Currently, the Greatland neighborhood is deemed an extension of the university, with housing designated for students, bus shuttles with neighborhood routes, and round-the-clock- university security. The imminent return to campus with reduced numbers of students living in the traditional dormitory model give rise to the larger issue of anchor institutions working to ensure that the increased need for off-campus housing in the surrounding communities will not be to the detriment of long-standing community members. Utilization of scholarship surrounding residents' sentiments about expansion, displacement, and town and gown issues can serve to inform urban and metropolitan institutions prior to the development or implementation of campus reopening plans. This scholarship can prove instructive for mitigating gentrification and

displacement cycles while also servicing student populations, given a proactive approach to the issue.

Background

From its outset, the COVID-19 pandemic illuminated the persistence of racial disparities that are emblematic (Benfer, Vlahov, Long et al., 2021; Kullar, Marcelin, Swartz et al., 2020) of the United States. The Center for Disease Control (CDC) has reported that Black and Brown people experienced a disproportionate burden of COVID-19 deaths, significantly higher rates of infections and hospitalization, and lower levels of care (CDC, 2021; KFF, 2021). The term *COVID exposure* has come to signify not only the potential to succumb to the virus, but also to emphasize the inequity of response in systems that can impact the effects of the crisis within Black and Brown communities. The COVID-19 Tracking Project, a volunteer organization of professionals within the fields of data technology and science, reported on the consistent disproportionate healthcare and economic burden that the virus presented to African American and communities of color. Their studies showed that by January 2021, more Black Americans had "died of COVID-19 since the pandemic began than there are names on the Vietnam Memorial" and "than the number of people commemorated on the AIDS Memorial Quilt" (Goldfarb, 2021). As a nation, we are slowly coming to realize, fully, the economic impact of COVID-19 (Baldwin & Di Mauro, 2020; Chen, Igan, Pierri, & Presbitero, 2020; Gopinath, 2020) through the reporting of job losses, layoffs, shutdowns, work slowdowns and all the implications that stem from population reductions. Increased demands for non-profit services due to high levels of food insecurity (Gundersen, Hake, Dewey & Engelhard, 2021; Wolfson & Leung 2020), mental health and physical and substance abuse counseling (Sarvey, & Welsh, 2021; Taylor, Paluszek, Rachor, McKay & Asmundson, 2021) necessities, compounded by shortages in donation revenue due to cancelations of fundraising events and job loss, demonstrates that there is no sector of the U.S. society that has not been impacted by COVID-19. A paradigm-shift away from previous close-contact, care-free manners is required for the way we must now communicate and engage with each other, and nowhere is this truer than within the U.S. education sector, which struggled initially in determining how to deliver instruction to millions of young people throughout the country.

At the post-secondary level, to manage the outbreak of a global health pandemic caused by COVID-19, academic institutions were forced to take swift action (Fischer, 2020; Leckron, 2020) after shelter-in-place orders were issued nationally in March 2020. Prior to the order, initial responses to COVID-19 looked to extend spring breaks and de-densify campuses. Reducing the number of individuals in close contact areas, including lecture halls, cafeterias, and dormitories, was a necessary immediate measure, and was widely accepted as effective in stopping or reducing the spread of the virus (Freeman, Nguyen, Beliveau et al., 2021; Hamer, White, Jenkins et al., 2021). These were deemed insufficient choices (Vasquez, 2020) for

meeting the magnitude of the moment and ultimately mandates were issued for the full evacuation of dormitories and college campuses. In many urban institutions where student populations rely heavily upon off-campus housing in residential neighborhoods, tensions rose between school administrations and local landlords who also rely on the income of student rentals as landlords perceived the university to be exercising authority outside of their jurisdiction. Communication from one apartment general manager informed their tenants, "This is your home, and you are welcome to stay. No one at the university has a right to require you to leave your apartment, or to move out…" (Cohen, 2020). Thousands of undergraduate and graduate students departed college campuses, and, importantly, students who lived off-campus and would have continued to do so, elected to return and remain home at the termination of their leases. Academia, like many other industries at this time, is contending with financial ravage brought about by COVID-19. The decision to freeze tuition combined with the reduction of international students' acceptances (Friga, 2021), portends an increase of students to future incoming classes to improve revenues.

The Impact of De-Densifying

The de-densifying of campus dormitories (Diep, 2021) incites a shift in the traditional housing model (Mosher, 2020; Pierce, 2020; Zalaznik, 2020) of double or triple occupancy rooms to single rooms where students have no roommates. Further extrapolation of this plan implies an increase of students seeking off-campus housing in neighboring communities that are repeatedly encroached upon, giving rise to a central issue for residents, "[N]ow they pushing us out again, where we gon go?" (p. 133, Thomas-EL, 2019).

Out of necessity, fewer students will be housed in the dormitories for the purpose of de-densification. Resultantly, students who are not housed by the university will seek housing within the outlying community (Hoffman, 2012; Mosher, 2020). This has been the consensus of university officials, realtors, and property managers across the nation (Marcut, 2020; Pierce, 2021; Tracy & Perman, 2021). Unlike previous decades which were absent of Community Benefits Agreements (Gross, 2007; Wolf-Powers, 2010) designed to incorporate community input into negotiations surrounding development, or Civic Missions or Anchor Missions (Checkoway, 2001; Kantanen, 2005; Norris, & Weiss, 2019) that detail the guiding postures that institutions should display towards that neighbors, urban universities are now in possession of or have access to scholarship which details the sentiments and perceptions their neighbors hold in relation to the increased expansion into their communities. They have the tools available to change the trajectory of historical town and gown issues (O'Mara, 2012) that have proven detrimental to low-wealth neighboring communities. Prescient comments from one study participant relays her understanding of the phenomenon. She asserts:

> So now, you ain't gonna charge, um five hundred dollars that you was charging these people that's less fortunate. Now to live in a one-bedroom apartment, it's twelve hundred

> dollars. And you saying that's okay. Because you know why? You got the Fourdlet students here, and they doggone PHEAA money and everything is paying it. *They* not paying it, the money that they get for their grants and stuff is paying it. So now, of course, the landlord gonna say, 'oh, ok they payin' twelve hundred dollars here, I'm gonna go up here', so now you got [them] pushing the people that lived down [here] all their life, you're pushing them out of this. Out of [CITY].

Anchor institutions play a significant role in how residents will experience the impact of COVID-19 on college campuses. There are opportunities to mitigate damages that may arise from neglecting or disregarding the needs of their neighbors prior to residents experiencing an increase of students seeking more housing. Failure to foreground residents' concerns of increased expansion and prohibitive housing creates the potential to increase the town and gown tensions that are representative of gentrification and displacement. These long-held notions about who deserves to occupy a space are enveloped by white supremacy and privilege and defined by race and class (McGhee, 2020; O'Mara, 2012; Reed, 2004; Rothstein, 2018). Principle tenets of anchor missions reflect the institutions' desire to engage with and support the goals (Birch, Perry, & Taylor, 2013; Norris & Weiss, 2019; Sladek, 2019) of the community, and can work to thwart the deep-seated issues of feeling "pushed-out" or discriminated against. In this regard, urban and metropolitan academic institutions must include residential concerns within the structure of reopening plans, which assume the movement of their students into bordering neighborhoods in greater numbers as well as how the increase will affect housing for long-standing residents.

The New Normal

In the 2021-22 academic year when campuses resume new regular operations, the temptation for landlords and realtors will be towards recouping income that was lost as housing investments sat dormant. At the national level, landlords have expressed dismay over the loss of rental receipt income (Greenspan, 2021; Khouri, 2021). Though data are insufficient in detailing student experiences for satisfying rental agreements, Pierce (2021) reports an increase of new off-campus apartment leases that will begin in summer 2021 in anticipation of plans by colleges to maintain the single dormitory room model. Brian Pearl is a developer whose company was hired in the summer of 2020 to build 886 units to house students after the first wave of the COVID crisis. He supports the assertion that the future demand for student off-campus housing will remain high as the nation continues to grapple with the effects of the pandemic:

> The need for student housing throughout the nation is nothing short of compelling. In some universities, due to the inability to share rooms during the pandemic, the demand for off-campus housing has temporarily increased, even above its already high level. As we move past COVID-19, we will continue to see a robust need for housing. (Marcut, 2020)

In adjoining residential communities that have experienced campus expansions into their neighborhoods, the ripple effect of the national lockdown punctuated a defining feature in gentrification of low-wealth, marginalized communities by anchor institutions: the availability of affordable rental housing in their neighborhoods. Residents have expressed strong sentiments about the practices of developers in their community who have been intentional in their preference of tenants. One participant remarks:

> I actually still feel some type of way, um, with some of the things, far as them building up all of these nice apartments, but they're not for us. And they are overly priced...just out of curiosity, I've called about apartments in the, in the um, area. And, um, there was a two-bedroom apartment, and it was like, oh it's um, twelve hundred a month. And I'm like, 'for what?' And they're like, 'oh, um, cuz we charge six hundred per room.' (p. 133, Thomas-EL, 2019)

Over the course of the national shut-down and throughout the partial reopening of college campuses, it has been difficult for landlords to salvage incomes through their rentals. To protect their investments, not only were they willing to forgo the "students only" requirement, but many entered into agreements with community members in the form of abatements, waivers, and deferrals (Meyerowitz, 2021) to remain afloat. Importantly, community residents have had the benefit of remaining in their neighborhoods; however, they "remain in the precarious position of being pushed out of the community due to the increasing expansion of the university" (Thomas-EL, 2019). The anticipated full return of students in fall 2021 back to city campuses is what will present anchor institutions with the conundrum: how will they continue nurturing the fragile relationships with communities whose residents maintain the feeling of being pushed-out of their homes because of student preference while also maintaining the number of students needed for their business model to survive? According to Paul Friga of the Kenan-Flagler Business School at the University of North Carolina at Chapel Hill:

> "Higher ed is hurting. Our entire operating model is under siege, the revenue losses are unprecedented, and campus leaders are beginning to respond to the historic challenges. They are realizing that cost cutting alone is not the answer, and that this is a time to clarify their institution's unique value to their students and communities." (*The Chronicle of Higher Education*, 2021)

Rather than venture that landlords or realtors will protect the interests of the residents, proactive use by anchor institutions of economic and political resources (Bowen, 1953) could ensure that residents remain anchored in their locations. This may mean drafting agreements with housing representatives, working with municipal agencies that would help tenants remain where they are, or advocating on their behalf of their lease agreement. Neglecting to openly and proactively engage with the neighboring community poses significant risks to urban institutions where housing is concerned as adverse impacts to residents which benefit students are perceived

sanctioned by the institutions (Thomas-EL, 2019), and will reopen wounds that gentrification and displacement have caused.

Discussion

The COVID-19 global health crisis has collided with the quintessential urban crisis; however, scholarship surrounding the town and gown vacuum exists now, more abundantly than in decades past. Urban academic institutions can benefit from understanding how they can interact with communities to bring about fruitful outcomes, and this scholarship positions them to be instrumental in bringing about a more equitable conclusion to positive community engagement. March 2020 introduced an unprecedented event for higher education. The impending return to campus for all students with fewer vacancies in campus dormitories gives rise to the question of how the influx of students into bordering neighborhoods will be addressed.

Anchor institutions that place as a priority engaging with this eventuality of student expansion into residential neighborhoods rather than disregarding it as a by-product of normal institutional operations (Bergen & Sladek, 2019), gain possibilities of improving community engagement efforts. Bowen (1953), in his discussion of corporate social responsibility (CSR), supports this assertion. Regarding the responsibilities of businesses, he states that they are obligated, "to pursue those policies, make those decisions, or to follow those lines of action which are desirable in terms of the objective and values of our society" (p. 6). By contrast, failure to lead in this area of housing/residents/students, hazards the erasure of prior efforts towards improvement of community relations, as the new iteration of expansion and potential displacement could be viewed as an expected recurrence at the hands of the institution.

Conclusion

It is possible, given the unprecedented nature of a once-in-a-lifetime global pandemic, that there is nothing that can be done except to make a public acknowledgement to the neighbors of an impending increase of student residents. Nevertheless, even this would be better than the traditional silence from the university to which the community has become accustomed. Communication from the institution demonstrates that long-standing residents are a part of the reimagining process for campus reopening. Prior community engagement efforts from urban anchor institutions must shift towards recognizing the familiar patterns of displacement which exist throughout the town and gown dynamic. The current president of Fourdlet is quoted as having the goal of being "the most civically engaged university in the nation." A proactive approach could serve to establish a new normal that will account for the residents who have emerged as consistent placeholders in their communities especially during the time of the pandemic crisis. Campus reopening plans must include measures that would not further

disadvantage low-wealth residents in their neighboring communities by instigating unwelcoming environments, cost-prohibitive housing, or displacement.

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All That You Can't Leave Behind-Essential COVID-19 Technology and Pedagogy

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Abstract

The COVID-19 pandemic forced many institutions to adapt quickly and substitute technology-based online or remote instruction in place of in-person instruction. This adaptation caused many faculty to develop new technology fluencies, which can provide more flexibility and innovation moving forward. However, the technological lessons learned from the COVID-19 pandemic are somewhat conflicting, as we have also learned that there are places where in-person instruction is extremely valuable. As we move beyond COVID-19 protocols, there are many important implications for universities seeking to effectively instruct an increasingly diverse student body in ways that reflect both their mission and core values and also take into account the changing landscape of higher education.

This article considers the lessons that Virginia Wesleyan University (VWU) learned during the pandemic and how these experiences will shape instruction moving forward. Through a series of remote technology workshops, reflective collaboration, and focus groups, many faculty identified new approaches using technology that they will continue to incorporate into instruction post-pandemic while still maintaining the face-to-face instruction that is highly valued at institutions like VWU. We will discuss how to balance and bring together the best aspects of both traditional pedagogies and the new practices learned.

Keywords: higher education, COVID-19 pandemic, technology, instructional approach, face-to-face instruction, pedagogy

Introduction

The COVID-19 pandemic forced a rapid shift to emergency remote instruction throughout higher education worldwide (Crawford et al., 2020; Hodges et al., 2020). Many institutions had to adapt quickly to substitute technology-based instruction in place of in-person instruction. For universities that relied primarily on face-to-face instruction, this shift was disruptive on two levels. First, it was disruptive on a technical level as individual faculty varied widely in their proficiency with instructional technology. Some faculty were forced to become proficient with forms of technology that were previously unfamiliar in order to continue instruction during the spring 2020 term. Other faculty were more proficient with technology use, but were impacted by the second disruption: the need for a rapid shift in pedagogical methodology (Hodges et al., 2020). These factors set up a situation whereby proficient technology users and instructional designers could help train faculty peers. Throughout the pandemic, faculty ultimately became more well-versed in technology usage and gained additional pedagogical tools for use in their courses. This new proficiency has led some authors to call for more widespread use of online (Tesar, 2020; McKenzie, 2020), hybrid (Benito et al., 2021), or flexible options that allow students to choose how to access the course (Petronzi & Petronzi, 2020).

While the increased use of technology is advantageous in some ways, at many institutions it is less desirable to retain all elements of the remote or online instruction used during COVID-19. Certainly, increased technology proficiency among faculty is desirable, but many institutions, especially small liberal arts colleges, greatly value in-person instruction and personal interactions between students and faculty. Thus, at these institutions, a shift to an online or flexible approach represents, to some degree, a move away from strongly held core institutional values. While faculty can utilize new technology proficiencies to enhance face-to-face instruction, many institutions will shift partially, but not completely back toward the pre-COVID-19 status quo. In addition, students have selected these types of institutions because of their preference for face-to-face learning (Petronzi and Petronzi 2020), so there is some obligation to retain this core educational attribute. Ideally, aspects of the best of both approaches can become common practice, but ultimately, individual institutions must determine what the new normal will look like on their campus. Defining the new normal requires deliberate reflection and discussion, decisions about which of the lessons learned during COVID-19 to retain and integrate into future semesters, and also support for continued faculty growth and pedagogical innovation. This report summarizes the process taken at Virginia Wesleyan University to enhance faculty proficiency with technology during the COVID-19 pandemic, followed by meaningful reflection and dialogue on the degree to which technology should or could be retained within individual courses and academic programs.

Process at Virginia Wesleyan University

Virginia Wesleyan University (VWU) is a small (~1500 undergraduate and 100 graduate students, 86 full time teaching faculty) primarily residential liberal arts institution that transitioned from a college to a university in 2017, adding selected online and graduate programs in the process. Like many other residential liberal arts institutions, VWU prides itself on face-to-face instruction and personal interactions. Some faculty have been interested in using technology in their pedagogy, and the institution hosted an internal "Teaching with Technology" series for faculty for many years. The recent addition of online and graduate programs represents a natural outgrowth of that, but highlights the internal tension between faculty and departments willing to embrace technology and those focused primarily on face-to-face instruction.

Like many institutions, VWU had little time to prepare faculty for the shift to remote instruction during the COVID-19 pandemic (Crawford et al., 2020; Tesar, 2020). There were only two weeks between when faculty were first asked to start thinking about a shift to remote instruction and the full initiation of remote instruction. During this time, academic affairs and the Director of Instructional Technology held several workshops on a variety of technology tools that would facilitate remote instruction. Some faculty were comfortable with using certain forms of technology, and they helped to teach their peers. Others had never used Zoom or Blackboard (our learning management system) before, and started with the basics. The workshops promoting technology use were optional and were not financially incentivized, but were still well attended.

Following the spring intensive workshop week, our Director of Instructional Technology held twice weekly help sessions, and we also held periodic forums where faculty could share what they learned with their colleagues. This technology series continued during the remainder of spring 2020 and throughout the summer, guided by a faculty steering committee, our Director of Innovative Teaching and Engaged Learning, and our Director of Instructional Technology. These leaders conducted periodic surveys to determine which forms of technology faculty were more interested in learning about, so that we could adapt future presentations accordingly.

All of this information helped faculty to plan for the 2020-21 academic year, where courses were a mix of in-person, hybrid, and remote learning. Approximately 2/3 of class sections were held in person, with 1/6 held in some type of hybrid format, and 1/6 of fall class sections were held exclusively via remote instruction. In contrast, during semesters prior to 2020, less than 5% of courses were held in a hybrid or online format, with no courses offered remotely. Some faculty used summer 2020 to prepare for a hybrid or remote approach during the fall, whereas others went back to their typical in-person approach with masks and social distancing in place. All courses, even those taught entirely face-to-face, had to be able to accommodate a small number of students that were approved for permanent remote instruction or students who temporarily received instruction remotely during isolation or quarantine. Fall 2020 and spring 2021 instruction was supported by a workshop series featuring regular presentations and panel

discussions on relevant technology and pedagogical strategies. To ensure that the responsibility for this did not fall solely on the Director of Instructional Technology, our workshops often used an approach where a panel of faculty could present to other faculty to help expand their knowledge of technology.

In the early stages of the pandemic (summer and early fall 2020), faculty survey responses focused primarily on technology basics, such as how to use the features of Blackboard (69.5%), or Zoom/Google Meet (43.5%), and much less on additional apps and tools (only 3 mentioned these in free comments). In subsequent semesters, faculty reported that Blackboard and Zoom/Google Meet were helpful, but additional faculty (66.7%), reported that they found a variety of other apps and tools to be helpful, including technologies to support video recording, editing, annotation applications, polling apps, interactive videos and digital white boards. In our most recent survey after the completion of the spring 2021 semester, a majority of faculty expressed an interest in learning more about one or more specific apps or tools (81.0%) and a much smaller proportion expressed an interest in learning more about Blackboard and Zoom/Google Meet break-out rooms. The change in responses between fall 2020 and summer 2021 demonstrates a shift between a need to learn the basics versus a desire to learn more about a range of different applications that could be of use in future terms, even if those courses are taught in a face-to-face modality.

We also surveyed students at the end of the fall 2020 semester, asking not for their evaluation of courses, but for their reflections on the shift in methodologies. Most of our students (53.8%) reported that they learned better with face-to-face instruction, or that their preferred modality depended on the course content (23.1%). Only 14.5% preferred some form of hybrid instruction, while just 8.6% preferred either remote or online coursework. Our students' preferences mirrored the findings of Benito et al. (2020), who found that students felt they learned less and felt less engaged in remote classes. We shared these results and specific student feedback about the positives and negatives of each modality to help faculty prepare for the spring 2021 semester.

At the end of the spring 2021 semester, one of us (DW) surveyed the faculty on this again, with an eye toward continuing the conversation in fall 2021. Additionally, we developed a summer off-campus workshop titled "Curriculum of the Future" to continue the meaningful dialogue about the lessons learned during COVID-19, so that faculty could better reflect on and prepare for the new normal. We are striving to return to the in-person classrooms that are the foundation of what we do, but also to consciously examine our pedagogical strategies to incorporate the positive practices that have emerged during the last year. These reflections and discussions will continue during fall 2021 technology and pedagogy workshops and beyond.

Reflection

Prior to COVID-19, VWU faculty varied widely in their use of and feelings toward technology in the classroom. COVID-19 forced theory into practice and faculty had to quickly incorporate technology in a variety of ways in order to continue instruction (Tesar, 2020). Remote instruction during spring 2020 was, in effect, an intensive pedagogical workshop that encouraged reflection on what constitutes effective teaching. This critical reflection worked both to reinforce certain institutional values and to offer new directions and technology enhanced approaches.

Workshops offered opportunities to learn about a variety of tools and apps, stressing both basic concepts for some and more advanced features for others. For many years, we have wanted faculty to become more technology-friendly and offered optional "Teaching with Technology" and "Digital Pedagogy" sessions. However, some faculty did not embrace this or our new online program until they were forced to teach remotely during the pandemic. Typical workshops pre-pandemic would have between 5 and 20 attendees. However, as faculty worked to adapt to remote instruction during COVID-19, we saw increased attendance and interest from many who had previously not taken advantage of these workshops or had not considered possible uses for technology in their classrooms. We went from 6-10 workshops in a typical year to 28 workshops between March 2020 and May 2021, with higher attendance than was the norm in the past.

Many faculty identified new approaches using specific forms of technology (i.e., breakout rooms, Jamboard, Screencast-o-matic, Kami, Kahoot, Okiocam, Peardeck, Nearpod, etc.) that they will continue to use during face-to-face instruction post-pandemic. These tools helped to encourage annotation and collaboration, facilitate discussion, integrate lecture slides with polls, quizzes, and videos, or aid in video production. In addition, workshops helped faculty better utilize features of Blackboard such as discussion boards, rubrics, quizzes, and exams.

Instructor-developed videos presenting science lab or art studio techniques were embraced by some of our faculty and were widely implemented both during emergency remote instruction and to reduce in-class time, and thus the potential for exposure, during the 2020-21 academic year. These were two of the most challenging areas to adapt to remote and socially distanced instruction, but there was impressive creativity from some faculty members in those areas.

Video office hours were the preferred mode of faculty availability during the pandemic, even for faculty that taught in person, and advising appointments likewise shifted to a remote mode in most cases. Some of the faculty who teach in the online program have expressed a preference for video office hours, as they are otherwise unavailable to their exclusively online students. We suspect that video office hours will continue to be utilized by some of our faculty.

Some courses found success with certain hybrid approaches. One of us (SL), in her upper level

English course, opted for a hybrid model where the class met in person for one of its scheduled weekly sessions and was online for the other. Students engaged both in person and via discussion board. The course flipped some aspects of instruction, providing students with PowerPoints and links that covered some material typically delivered through lecture. Discussion then began online through the discussion board and continued into the classroom at the next in-person meeting. There were several benefits to this strategy: the discussion boards required students to be able to communicate effectively through their writing, which is always a key goal of an English course. The discussion boards also offered students less comfortable speaking up in class a space where they could offer their ideas. Additionally, students working through the PowerPoint material could do so at their own pace and research individual aspects as topics caught their interest. The links embedded into the PowerPoints encouraged this, but it was surprising when students began to do their own research on content that was especially interesting to them. This method of instruction was more empowering than traditional lectures. In-class meetings were much more productive and had more in depth conversations than was typical of past courses. The blended components resulted in a much richer learning experience.

In a math course that was face-to-face but also had remote students, engaging students during lecture became more difficult. One of us (DW) stumbled upon the unexpected benefits of a Google annotation application, Kami. The application allows the presenter to edit using text, highlights, shapes, equations, and a drawing feature. Thus, the instructor was able to edit the document as if writing on a chalkboard. Students could either view the lecture on the projector screen or their laptops. This pedagogy helped the class to work out the math problems together. They could see both the steps that the instructor took and their classmates' approaches. It also allowed the professor to more easily support students and answer questions. Based on a survey at the end of the course, more than 84% of students found the Kami annotation application to be helpful in supporting engagement and commented positively on its inclusion. The course will continue to include the use of Kami in the future.

There were many successes such as these that offered positive directions for the future. However, even as we learned how to teach well using technology, we also learned why these pedagogies may not always be the best approach. Course evaluations indicated that many students disliked remote instruction. There was a clear preference for in-person instruction and face-to-face learning. The biggest challenge that was faced by all was the dual mode of instruction, with some of the students in person and some of the students accessing the course remotely. This duality often limited instruction to the minimum capabilities of each modality in order to accommodate students accessing the course differently. Indeed, many faculty expressed relief that fall 2021 courses would return to fully in person without this dual mode of instruction.

Conclusion

This pandemic year provided many institutions with the opportunity to reimagine teaching and what the new normal will be for higher education (Neuwirth et al., 2020; Ewing, 2021, Benito et al., 2021). While there has been some move toward increased use of technology in the classroom, COVID-19 was clearly a catalyst for rapid pedagogical change (Ewing 2020). Continual faculty usage of technology will depend on the degree to which they find the new approach useful, and whether it fits in with their intended approach post-pandemic. Many academic leaders anticipate more online and hybrid courses being taught post-pandemic, which will require expanded support for teaching with technology (Jaschik, 2021). However, technology needs to be incorporated purposefully in ways that complement or improve existing pedagogies and align with institutional goals and mission.

COVID-19 forced theory about online and remote instruction to become praxis almost overnight. Coming out of this challenging period, it is crucial that we do not just go back to our previous pedagogies, but reflect on and thoughtfully embrace some of the lessons learned (Cesco et al., 2020). A clear message to emerge from many campus constituencies after the pandemic instruction was a reinforced dedication to face-to-face instruction and a preference to avoid dual modes of instruction, which is teaching remote and face-to-face students at the same time.

While it was clear that face-to-face instruction is at the heart of what we do at VWU, it was also clear that this instruction may not, and perhaps should not, look the same as it did prior to COVID-19. The pandemic experiences, combined with the existing challenges facing higher education, provide incentives to create a new normal moving forward, a normal that blends some of the technologies and strategies learned with the face-to-face instruction that is the cornerstone of our pedagogy (Cesco et al., 2020). There are important ways that technology can and should enhance our teaching. As a university, we need to support and encourage faculty to continue to embrace technology purposefully and thoughtfully. There is a clear value to blended pedagogies in terms of improved learning outcomes (Means et al., 2009; Vallée et al., 2020).

However, in developing these blended pedagogies, it is important to remember that technology is a tool, and not an end in and of itself. As Kruger-Ross and Holcomb (2012) astutely note:

> "The technologies will come and go, but it is the people that make up the classroom, not the laptops. It is the instructors and the students that are most important, not the projectors or iPads. No amount of technology can make up for poor pedagogy – and the integration of technology into poor pedagogy without consideration for the related epistemological and ontological concerns is a recipe for disengaged and disinterested students."

Moving forward, it will be important to cultivate a normal that blends technology with the intimacy and efficacy of in-person instruction (Cesco et al., 2021). Universities will need to make thoughtful decisions and provide technology support and infrastructure for faculty (Moreira, 2016; Toquero, 2020). We need to continue meaningful dialogue on the role of technology in our pedagogy (Neuwirth et al., 2020) and the places where technology can improve learning outcomes. Ultimately, we favor a future of higher education that blends the best elements of technology without losing the personal interactions that are the hallmark of a liberal arts education.

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How Peer Mentoring Can Help Universities Promote Student Success in a Post-COVID-19 Pandemic World

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Abstract

The COVID-19 pandemic and fallout from universities' pandemic response efforts has made the adjustment to college more complex for new students. This is particularly true for students who lack familiarity with how college works. In addition to student adjustment issues, new pandemic-related issues include a greater risk for information overload, problematic access to technology and the Internet, complex decision-making, greater difficulty in recognizing relevant resources and effective strategies for addressing specific issues, and difficulties in responding to issues that take different forms in remote or hybrid learning contexts. Peer mentoring can help. Informed by interviews with university faculty, program coordinators, and support staff, this article identifies the peer mentoring qualities that make it a useful tool for helping universities respond to issues associated with the pandemic. Mentors provide personal connections to the university, have proximate experience for a post-pandemic university context, are seen as credible sources for messaging, and provide accurate standards of social comparison with regards to strategies for success. The article also suggests tips for universities to set up peer mentoring programs to assist students in post-pandemic contexts.

Keywords: peer mentoring, COVID-19, student success

Introduction

The 2020-21 COVID-19 pandemic forced universities to address multiple issues they never anticipated. Even when quick responding schools came up with what appeared to be viable plans for dealing with an initial set of problems, developments in federal and state-level pandemic responses made initial plans obsolete overnight (Murakami, 2020; Quilantan, 2020). New issues kept arising that required universities to come up with creative ways to support students.

Completing a college degree is a high stakes/high reward activity. There is a big payoff for graduates with four-year degrees compared to non-graduates in terms of employment and career opportunities, average earnings, and access to better health care (Caumont, 2014). Earning a bachelor's degree involves successfully addressing multiple adjustment issues and is challenging under the best of conditions. The freshman year and the transition from first to second years are critical times with regards to student persistence (Kamer & Ishitani, 2019). Peer mentoring has been used in the past to promote college student success (Lane, 2020).

Peer mentoring

In higher education, peer mentoring describes a relationship where a more experienced student helps a less experienced student improve academic performance and social connection to the university by "…connecting protégés to key resources, providing information about opportunities, helping protégés navigate their university, and acting as liaisons to faculty and other influential people" (Lunsford et al, 2017). Peer mentoring has been shown to be effective in promoting college success for different sub-groups of students including returning veterans (Alexander, 2014), students with disabilities (Hillier, et al 2019), STEM majors (Zaniewski & Reinholz, 2016), and students of color: Latinx (Moschetti, Plunkett, Efrat & Yomtov, 2017), African American (Brittain, Sy, & Stokes, 2009), Native American (Mosholder & Goslin, 2013), and Asian American students (Palmer & Maramba, 2015).

Traditional college adjustment issues

Traditionally, students must address several important adjustment issues, besides meeting course-related academic demands, to succeed in college.

First, students transitioning into higher education need to establish they are legitimate college students and belong at the university. Both social belonging and academic performance are strong predictors of retention (Davis, Hanzsek-Brill, Petzold & Robinson, 2019). Participating in peer mentoring programs has been associated with improved grade point average (DeMarinis, Beaulieu, Culi, & Abd-El-Aziz, 2017), completing a higher average number of credits in the first year (Collier et al, 2008) and improved sense of belonging (Yomtov, Plunkett, Efrat, & Marin, 2017).

Second, new students are asked to develop a social support network without having spent much time in the college context. Universities try to anticipate and address this issue by providing pre-term orientation, on-campus and resident hall-based information kiosks, and new student outreach connected to social activities during the first week of classes. Students who participate in peer mentoring programs report that they strongly value the support they receive from their mentors (Ruthkosky, & Castano, 2007) and viewed them as allies with whom it felt safe to disclose personal issues and information (Beebe, Beebe, Redmond & Geerinck, 2004).

Third, new students are asked to take in, understand, and act upon a significant amount of new information. This is an on-going process. Information is constantly being introduced with expectations that earlier material provides a foundation for all that follows (Beras, 2018). By sharing their own university experiences, peer mentors help their mentees make higher quality decisions (Collier, 2015, p. 76-77) that lead to college success.

Fourth, new students are asked to understand the college student role and the university's expectations of them. They are expected to know not only that there are important adjustment issues that need to be addressed, but also which issues need to be prioritized, and at what time. It is assumed, though not always articulated, that if students do not know how to address a specific issue, they will know what information they are missing and where to go to get that information. Mentors help less experienced students better understand the college student role (Palmer, Hunt, Neal & Wuetherick, 2015) and how to use that knowledge to achieve valued goals such as completing their degrees (Collier, 2015, p. 37-38). Students who participated in peer mentoring programs demonstrated increased confidence in their abilities to successfully enact the college student role (Smith-Jentsch, Scielzo, Yarbrough, & Rosopa, 2008).

Fifth, new students are expected to be able to locate campus resources for addressing specific issues. They are expected to do so even though they have little or no experience with those issues, limited knowledge of neither available options, nor ideas about which resources might be most helpful for addressing those issues. Beatrice & Shively (2007) found that students who participated in peer mentoring programs increased their knowledge and use of available campus resources.

Finally, non-traditional students (e.g. first-generation, low-income, older/returning students) face additional, unexpected challenges due to differences in available resources and/or familial lack of familiarity with higher education (Collier & Morgan, 2008). Peer mentors can provide these students with insights into how to make the most of opportunities at college, avoid potential pitfalls, utilize available resources, and respond appropriately to professors' expectations. This is information that students whose parents are college graduates typically get at home (Collier 2015).

The changes that universities have made in response to the threat of the COVID-19 pandemic have increased uncertainty and introduced additional college adjustment issues. Therefore, universities must

strategize about how to encourage students to enroll, persist, and ultimately complete their degrees at those schools. Peer mentoring can be a particularly effective approach for universities trying to support students in the post-pandemic contexts.

Additional pandemic-associated issues that impact college student success and how peer mentoring could help students address these issues

The COVID-19 pandemic and fallout from universities' pandemic response efforts, e.g. the shift to all online courses in Spring 2020, have made college adjustment more complicated for students. In this section I will examine five additional pandemic associated issues and explore how properties of peer mentoring: (e.g. the ability of mentors to provide personal connection (Beras, 2018), be viewed as credible information sources (Collier, 2017), share relevant expertise (Collier & Morgan, 2008), and serve as a models for social comparison (Smith-Jentsch, et al, 2008) make it a potentially valuable approach for universities seeking to support students in the post-COVID-19 context.

1. Post-pandemic students need to establish social support networks within the new context where traditional means of interacting with other students, faculty and staff are no longer present.

Post-pandemic students need to develop personal connections to the university

Traditionally, universities have tried to promote connections among new students by providing a range of welcome-to-campus activities. Unfortunately, traditional student outreach activities have been rolled back post pandemic due to concerns about large group gatherings and maintaining appropriate social distancing (Camera, 2021).

How peer mentoring can help

Peer mentoring can help post-pandemic students develop social support networks. As one mentor program coordinator noted, students want to be heard and recognized as individuals. One characteristic of mentor-mentee relationships is that mentors provide mentees with personal connections to the university. Peers share a perspective with mentees due to their proximate experiences, which makes them relatable and increases the likelihood of mentor-mentees bonding. In the current context, one-to-one, virtual mentor-mentee relationships may provide needed welcome-to-campus socialization while maintaining student safety.

Mentors can establish face-to-face connections by contacting mentees by Zoom or other video chat software before the semester begins. A program coordinator noted that one key is making communication routine and repetitive. Regular mentor check-ins reassure mentees that someone on campus knows them personally and provides many of the positive qualities of face-to-face interaction. College students who participate in peer mentoring programs report stronger intentions to stay in college

and complete their degrees (Sanchez, Bauer, & Paronto, 2006). As universities return to in-person course delivery over time, these virtual relationships can serve as foundations for on-going, in-person ones.

Post-pandemic students need to be able to identify credible message sources

As noted earlier, content is only one element that impacts whether a student pays attention to a message. The message source's credibility is equally important (Pornpitakan, 2004). One benefit of traditional in-person education is that students have opportunities to informally interact with other students and learn their perspectives on which message sources are credible. With remote course delivery, students lose these informal opportunities to share information

How peer mentoring can help

The social-psychological concept of credibility is a helpful frame for understanding why peer mentoring is a valuable tool for helping universities respond to pandemic-associated issues. The person sending a message is called the message source. A message source's credibility is a critical element in the persuasion process. There are two components to credibility: expertise and trustworthiness. Expertise refers to the source's degree of knowledge of issue-related factual information, whereas trustworthiness refers to the degree to which the source is perceived as likely to accurately share this related factual information (Hovland & Weiss, 1951).

Peer mentors are seen as experts on "how to be successful university students in the post-pandemic context" because of their recent experiences successfully addressing the adjustment issues their mentees are currently facing. Peer mentors are also likely to be similar to new students in age and background. Similarity has been associated with increased likelihood of being perceived as trustworthy (Traberg, & van der Linden, 2022). Thus, it follows that mentors are likely to be seen as credible message sources. Mentors' greater perceived credibility increases the likelihood of mentees following their advice.

2. Changes to more technologically based course delivery modes (e.g. entirely online in the current context) leads to a greater reliance on online communication. Note: this is also a valid issue when universities opt to respond to the post-pandemic concerns by increasing the percentage of hybrid courses being offered.

Post-pandemic students need to deal with potential information overload

Greater reliance on online communication means that students receive constant streams of information from their universities without another person being available to clarify resulting questions. Students can get overwhelmed when asked to make sense of large amounts of messages that all seem equally

important. Information overload can lead to avoidance, as mentees either do not open emails or do not respond after opening and reading their emails (Misra & Stokols, 2012).

How peer mentoring can help

The first step is to get mentees to recognize and acknowledge that they have received messages from their mentors. The personal connections that mentors build with their mentees increases the likelihood that mentees will pay attention to the mentor's e-mail in their overloaded inboxes (Macrae, Visokomogilski, Golubickis,& Sahraie, 2018). The second step involves encouraging the mentee to follow the mentor's advice. Once the mentor has shared her expertise, in the form of already-tested college success strategies, and the mentee tries out a strategy and it works, the mentee is more likely to follow subsequent courses of action advocated by the mentor (Collier, 2015, p. 77).

Post-pandemic students need to be able to differentiate among incoming messages

New students are inundated with multiple messages from different university sources urging them to address specific issues immediately. Without a basis for differentiating which messages are most important to pay attention to, students can be frozen into inaction.

How peer mentoring can help

Mentors can simultaneously help mentees differentiate among incoming messages and reduce potential information overload by assisting them in creating simple guidelines for message recognition, categorization, and prioritization (Wainer, Dabbish, & Kraut, 2011). Recognition has to do with determining which messages are most important (e.g. "always open emails from the office of financial aid, any of your professors, and your mentor"). Categorization refers to separating messages into important and junk (e.g. "create separate folders to save messages from different classes.") After separating messages into categories, prioritization refers to which messages in the important category need to be read and acted upon before others (Hanrahan, Pérez-Quinones & Martin, 2016). There is a tendency for students to underestimate the sheer volume of messages they will receive as the result of a shift to all online course delivery. By revisiting these issues from time to time, mentors can make sure mentees are not getting overwhelmed.

3. Post-pandemic students must deal with unanticipated changes in important adjustment issues

As noted earlier, to succeed at college, even before the pandemic, new students are called upon to appropriately address a range of adjustment issues even though they initially may not be sure how to do so. An additional, post-pandemic complication is that even when students are aware of how earlier students dealt with the same issues, particularly prioritization, that information is likely no longer applicable. Current students may not realize that even recent graduates' ideas about the relative

importance or appropriate time to prioritize specific issues may have changed due to the demands of the post-pandemic university context. For example, when classes were all delivered in-person and on campus, issues like setting up an IT account – e.g. internet access, email account, logins for accessing online tutoring resources, or learning how to remotely access library resources -- may have seemed to just be part of general housekeeping in preparation for the beginning the semester and no more important than quite a few other issues. However, the same issues will take on much more importance when all classes are only delivered remotely and access to campus resources is only available online.

Typically, students learn through the process of social comparison to recognize important adjustment issues, strategies for addressing those issues, and when to prioritize specific issues at different issues (Festinger, 1954). Social comparison involves sharing and comparing their understandings of what it takes to succeed at college with those of other, usually more experienced, students in face-to-face interactions. New students lose these learning opportunities when campuses shift to remote delivery of courses or decrease opportunities for students to informally interact with each other.

Students need social comparison information to make informed decisions. Decision-making follows a particular pattern: problem recognition, awareness of alternative strategies, assessment of the alternatives' relative likelihood of success, selection of an alternative, and putting that alternative into action (Simon, 1955).

There are important differences between new and more experienced students' decision-making processes with regards to the same issue. Experienced students are more likely to consider alternative strategies that have higher likelihoods of success.

Post-pandemic students need to be able to identify effective success strategies to make informed decisions.

In the post-pandemic context, students do not have access to input from their peers about different alternative problem-solving strategies' relative likelihood of success or opportunities to observe the consequences of other students implementing different alternatives. New students may be ignorant of potentially effective strategies for addressing specific adjustment issues (Collier, 2015 p.74). They do not know that there are important things they don't know. New students are forced to make decisions about how to proceed addressing specific college adjustment issues using a less-efficient trial and error approach based solely on their own experiences.

Post-pandemic students need to be able to accurately calculate alternative strategies' costs and benefits

A related issue is whether new students can accurately calculate the potential costs and benefits of different approaches for addressing specific adjustment issues (Hastie, 2001, p.658). Students who are

unfamiliar with the consequences of choosing one alternative over another often make choices that maximize short-term benefits while ignoring alternatives that ultimately produce greater benefits in the long run (Iloh, & Tierney, 2014).

How peer mentoring can help

Peer mentors provide mentees with templates for how to be successful students by sharing their experiences in the post-pandemic university context. New students struggle with identifying effective success strategies. Mentees' universe of possible effective strategies may be different than those of more experienced students because they are less familiar with higher education in general, and the post-pandemic university context. One advisor mentioned that even when the issues new students are dealing with are the same as in the past, the explicit steps they will need to take to address those issues is different because the context has changed so radically. New students may be unaware of potentially effective strategies that mentors are already familiar with due to their own experiences.

Another decision-making-related issue is that new students have difficulty accurately calculating specific alternatives' costs/benefits. They struggle with subjective assessments of whether trade-offs associated with commitment to a specific strategy are worth it. Mentees may be unaware of potential benefits and/or costs that might affect their choices of strategies. Peer mentors' advanced college status and post-pandemic context experiences provide greater understandings of which strategies have the greatest likelihood of success.

When mentors share their understandings of strategies that work, their mentees are more likely to make higher quality decisions. For the mentee, accepting the mentor's advice amounts to replacing a high-effort, low-likelihood of success approach (i.e. figuring out how to proceed using trial and error based on personal experience) with a simple judgment task (e.g. "Should I accept this strategy as the best one to use because the mentor recommends it?").

It is the peer mentor's credibility that encourages the mentee to follow the advice that is offered. The mentee spends less time setting up the problem and working out a viable solution and more time working on the actual task. Spending more time on task leads to better academic outcomes (Collier, 2015, p.76).

4. Post-pandemic students need to be able to distinguish relevant resources and how to use them appropriately in the new context

Once a problem has been identified and alternatives initially assessed, but before a choice is made, it is important to consider the availability of relevant resources. New students' evaluation of a strategy's relative likelihood of success depends upon how easy it is to imagine that alternative addressing the issue. One factor that impacts this evaluation is the availability of effective problem-solving resources.

Because of their unfamiliarity with the post-pandemic context, new students may not be aware of available resources or how to use them appropriately.

How peer mentoring can help

Peer mentors are likely to be aware of the range of available campus resources due to their advanced college status and post-pandemic context experiences. However, mentors need to do more than just provide mentees with relevant information about campus resources. They also need to make sure mentees understand which resources are appropriate for addressing specific student issues (Collier, 2015, p.71). A mentor training coordinator noted that linking campus resources to specific student issues was a point of emphasis in their on-going trainings. In training, mentors were presented with a scenario and then asked: "which resources would you recommend to help a student deal with this issue in the post-pandemic university context?" It is helpful when mentors can provide mentees with explicit, step-by-step directions on how to use key resources to address specific adjustment issues.

5. Changes in course delivery modes disproportionately impact low-income students and those who are not familiar with how the university works.

As noted earlier, universities' responses to the threat of the COVID-19 pandemic have increased uncertainty and created additional college adjustment issues for all students. For example, one concern that all students share has to do with uncertainty regarding how the university will deliver courses (Morris, Myers, Hawkins, Moulton & Moulton, 2021). It is harder for students to plan when the final decisions about whether in-person instruction will be permitted is ultimately in the hands of state officials.

When universities shifted to remote course delivery, school became more difficult for students who pre-pandemic relied on campus resources for access to Wi-Fi, computers, and printers. Having a quiet area with access to technology is problematic for many students working from home. Bandwidth issues impact download and uploads of assignments and are exacerbated in many households by K-12 students' increased need for internet access due to their schools' shift to remote course delivery. Other post-pandemic course delivery issues disproportionately impact low-income and first-generation students.

Post-pandemic low-income, first-generation students need help in addressing technological and Internet access issues when universities shift to more technologically based course delivery modes

Within higher education, the digital divide refers to an identified condition where low income, first-generation, and minority students report experiencing distinct disadvantages in terms of access to technology and the Internet (Buzzetto-Hollywood, Wang, Elobeid, & Elobaid, 2018). Two separate 2020 studies of college students' post-pandemic technological barriers (Jaggers et al, 2021; Means &

Neisler, 2020) found that approximately 16% of students reported technology barriers (e.g. inadequate computer hardware or Internet connection) that inhibited their participation in online learning. Both studies found higher rates of connectivity issues for low-income students compared to high-income students, and for Black and Latinx compared to White students. An examination of differences in students' type of home Internet connection found these relative disadvantages persisted with White and more affluent individuals more likely to have home broadband access (Zickuhr, 2013).

There are also hardware issues that contribute to the digital divide. Low-income and minority students are more likely to use their cell phones for Internet access, and while smartphones are sufficient for basic online tasks, they are not adequate for more complex tasks like completing class assignments (Fernandez, Reisdorf, & Dutton, 2019). In addition, differences in screen size can lead to shorter attention spans due to visual strain (Maniar, Bennett, Hand, & Allan, 2008). As one advisor noted, success in the post-pandemic university context depends on tech capacity, not just "does a student have Internet access?"

How peer mentoring can help

The differential impact of the digital divide becomes even more important to address post-pandemic as universities shift to more technologically based course delivery modes. Already established mentoring programs need to place greater emphasis in their trainings on the ubiquity of digital divide-related issues among current college students along with information for mentors on how to connect mentees to relevant post-pandemic resources. As one coordinator pointed out, the nature of your training and your program must change in relation to the degree to which your school's course delivery format changes.

New students may not be aware of which resources the university provides that would make it easier for them to effectively complete academic tasks. For example, when Portland State went to entirely remote learning in spring 2020, librarians worked to keep some spaces at the library open for students with limited connectivity at home to come to school to access high-speed Internet. The issue then became how to get that information to the students who need it the most. Even when the university explicitly shares this information in a message to all students, it may get lost in the tidal wave of messages new students receive daily. Because peer mentors are perceived as credible message sources, their messages may get through to new students even in the sea of other e-mails. Because they have already established personal connections, it is safer for mentors to directly ask if mentees are having issues in these areas. Mentors can also help mentees realize they are not alone in having to address these issues by sharing stories from their pasts about instances when they ended up doing unnecessary additional work or achieved less-than-optimal results on assignments because they did realize that appropriate problem-solving resources existed.

The final section of this article offers tips for universities concerning how to set up programs and prepare peer mentors for supporting students in post-pandemic contexts.

Tips for Universities

Preparing mentors typically takes place during pre-semester mentor training. During training, program coordinators need to identify post-pandemic adjustment issues they anticipate students will face and explicitly spell out what mentors should emphasize in their interactions with their mentees.

1. Make sure that mentors' messages emphasize information that is consistent with and complimentary to other important university messages that are going out to students.

This increases the likelihood of successful communication in several ways. First, for students who try to pay attention to other mail from the university, message repetition is associated with information retention and greater perceived source credibility (Ernst, Kühne, & Wirth, 2017). Not only are mentees more likely to retain the information in the repeated message, mentors' improved perceived credibility increases the likelihood of mentees following their mentors' advice. Second, if students respond to potential information overload by withdrawing from reading most of the e-mail messages from the university, mentors' messages are more likely to be read and responded to because of their already established relationships. This mediates the university's use of online communication as default mode of communication and still exposes new students to the university's important messages even if they have to be diverted through the mentors.

2. Use explicit language in peer mentors' messages.

Encourage mentors to clearly spell out what issue the message is about in both the e-mail subject line and the first sentence of the text (Wainer, Dabbish, & Kraut, 2011). Make sure each message explains why this issue is important, how students should proceed, and how to get any questions answered. One advisor emphasized that mentors need to be explicit, "this is exactly what I am here for and here is how I can help."

3. Clarify that mentors are facilitators, not necessarily experts on addressing every adjustment issue.

Clearly communicate that mentors are facilitators who can connect students with other experts who can address specific issues. This should be emphasized during mentor training, and mentors need to make sure mentees understand this at the beginning of their relationships.

4. Emphasize why mentors are expert students.

To be considered experts, mentors need to be able to demonstrate they know how to successfully problem-solve in the post-pandemic university context, e.g. how to make the most of remote office hours. Since mentors are already likely to be perceived as trustworthy because of their similarity to mentees, the combination of expertise and trustworthiness increases the likelihood of mentors being seen as credible message sources with all the benefits that brings. One coordinator suggested that programs could build up the mentor's perceived expertise by certifying that they have completed training that covered how to best address specific issues and locate important resources.

5. Encourage mentors to model how to be successful university students.

Besides acting in appropriate ways, mentors need to explain to mentees why they made the choices they did when addressing a specific adjustment issue to facilitate social comparison. It can be very helpful when mentors tell stories of own and other students' experiences addressing specific adjustment issues particularly in the post-pandemic university context.

6. Promote appropriate resource use through how to videos.

One program coordinator mentioned that in post-pandemic contexts that rely on remote delivery, it is helpful to have mentors make short screen-chats demonstrating how to appropriately use specific campus resources. These informal and personal messages in the mentor's voice can be shared with multiple students who have the same issue. This also makes the mentor appear to be more of a real person than just a talking head in a Zoom call.

7. Expedite the development of mentor training programs.

Consider building upon or adding to existing mentor training programs on your campus. One relatively quick turn-around intervention would be to have university student support staff work with existing mentoring program coordinators and mentors to develop a list of important issues that students are struggling to address in the post pandemic context. Ask the same group to provide "advice for mentors" to share with students on how to best address each issue and which campus resources would be most useful for doing so. After making a consolidated list, share that material with the coordinators of existing programs so that they can incorporate it into ongoing mentor training or even mid semester outreach to current students. Whether you are developing new programs or building upon existing ones, among the skills to emphasize in mentor training are*:* giving directions, knowing potential adjustment issues and which strategies mentors should recommend, as well as being able to link campus resources to addressing specific adjustment issues.

Conclusions

The COVID-19 pandemic and unintended consequences of schools' pandemic responses have introduced new college adjustment issues and made universities' student support efforts more complicated. Peer mentoring can help.

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This article is informed by conversations with select Portland State University faculty members, mentoring program coordinators and advisers about their experiences in Winter/Spring 2020 when the university shifted from in-person to entirely online course delivery in response to the COVID-19 pandemic. I want to thank all these individuals for generously sharing their time.

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A Collaborative Approach to COVID-19 Planning at a Regional Public University

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Abstract

As Purdue University Fort Wayne (PFW), a regional public university in northeast Indiana, completed the spring 2020 semester fully remote due to COVID-19, university leadership had to determine if there was a path to safely reopening campus and maintaining a low-risk environment for in-person instruction and work for the 2020-21 academic year. To make this determination, PFW engaged in a three-week scenario planning process in which we assembled 22 task forces composed of 140 faculty and staff, approximately 13.5% of the university's full-time employees, to identify the challenges and opportunities associated with eight scenarios for how the 2020-21 academic year could play out. Reports and recommendations from the scenario planning process have informed all aspects of the university's COVID-19 planning, implementation, and communication. This paper examines how a highly collaborative planning process, informed by PFW's recently completed strategic planning process, created broad engagement with and awareness of the university's planning efforts, demonstrated the value placed on faculty and staff expertise and input, and helped to build long-term buy-in and trust. This approach also informed PFW's planning processes for the 2021-22 academic year, which emphasized leveraging our COVID-19 experiences to build a better normal for the university.

Keywords: scenario planning, COVID-19, strategic planning, regional university, public university

The COVID-19 pandemic has required institutions of higher education to reevaluate virtually all aspects of their operations and to regularly make critical decisions at what feels like breakneck speeds. One area of innovation for Purdue University Fort Wayne (PFW), a comprehensive metropolitan public university located in northeast Indiana, has been a greater reliance on broadly collaborative planning processes to determine key aspects of university operations. Empowering faculty and staff to establish protocols and develop recommendations for university-wide approaches to challenges, rather than relying on administrative mandates or unit-level problem solving, has improved the university's response to COVID-19 and fostered greater confidence in and support for key decisions related to pandemic operations. Lessons from the university's pandemic response planning have already shaped our approach to post-pandemic planning and will continue to inform the university's future planning exercises.

As Purdue Fort Wayne neared the end of the spring 2020 semester, the second half of which was fully remote as a necessary response to the early stages of the COVID-19 pandemic, university leadership had to determine if there was a path to safely reopening campus and maintaining a low-risk environment for in-person instruction and work for the 2020-21 academic year. The experience with remote operations in spring 2020 had made clear that our students wanted and needed the opportunity for an in-person educational experience in 2020-21 if that experience could be delivered in a reasonably low-risk manner utilizing the resources the university had at its disposal. Too many students had unreliable access to technology or high-speed internet at home, lacked safe and quiet spaces to complete schoolwork or take online courses, or had too many non-school obligations to be able to effectively manage a fully online course schedule. Our students needed the engagement and support structures that an in-person education, or at least an open campus, afforded.

There were many challenges to answering this planning question. Among the most important beyond the unprecedented nature of the pandemic was that Purdue Fort Wayne had limited administrative capacity to engage in planning on this scale, especially in the short timeframe available before critical decisions for fall 2020 operations needed to be made and communicated to employees, prospective students, current students, parents, and community partners. While part of the Purdue University System, Purdue Fort Wayne is largely autonomous in many aspects of its operations, including its response to COVID-19. There was also the critical question of how to build trust in planning decisions, especially amongst employees, when they were not developed by the full team of medical and infectious disease experts that many larger universities could marshal.

Scenario Planning and Implementation for 2020-21

The solution to these challenges was staging a large-scale scenario planning process, the primary goals of which were to determine if there was a path to safely re-opening campus, and identify the salient challenges and opportunities the university would potentially confront in the months ahead. In late April 2020, under the direction of the chancellor, vice chancellor for academic affairs, and an executive steering committee composed of senior administration, the presiding officer of the faculty Senate, and the director of strategic planning as project manager, the university assembled 22 task forces focused on all aspects of university operations.[1] Each task force was charged with answering a series of planning questions related to the challenges and opportunities associated with eight different scenarios for how the 2020-21 academic year could play out.[2] A total of 140 faculty and staff members served on the task forces, approximately 13.5% of full-time employees, with assignments based on areas of functional and/or research expertise while also ensuring that each task force included a broad mix of administrative and academic perspectives. The task forces had a tight timeline of just three weeks in which to complete the planning exercise. This approach to scenario planning was made possible by the university's then-recently completed strategic planning process, which had likewise prioritized broad engagement and participation to build, iterate, and refine a comprehensive university strategic plan in a single calendar year.

This was an intensive process that required a meaningful commitment of time and energy by participating faculty and staff, and it proved to be highly successful both as a planning process and at building trust and awareness. At the beginning of the process, we held an information session for all participants during which we explained the purpose and goals of the process, walked them through specific expectations for their work, and answered questions. We established an intranet site through which we could share documents, resources, and guidance. We built in predetermined check-in times to ensure timely progress and to course correct if needed. Each task force produced a high-quality planning document that enabled university leadership to make key decisions about the pandemic response plan. The broad engagement of

[1] Academic Success: fall 2020 Beginners; Academic Success: Graduate Students; Academic Success: Returning Undergraduate Students. Auxiliaries and Food Services; Community Engagement, Governmental Affairs, Development; Diversity, Equity, and Inclusion; DOE, HLC, ICHE, Disciplinary Accreditation; Faculty Scholarship, Promotion and Tenure; fall 2021 Enrollment Funnel; Health, Safety, and Sanitation; Human Resources; Library; Non-credit, Auxiliaries, Resident Organizations; Non-lecture-based Instruction; Student Housing; Student Life and Experience, Athletics; [Purdue] System Relations; Teaching and Learning; Coordination with IU Fort Wayne; Mixed Modality Opportunities and Approaches; Revenue Projections, Expenditure Modifications; ROTC.

[2] The scenarios were informed by our then-limited understanding of how the pandemic was projected to evolve in the coming year and included a fully in-person academic year with no meaningful health and safety modifications, a year of mixed modalities and social distancing, a fully remote year, and scenarios with mixtures of the three and/or major disruptions requiring a transition to fully remote operations.

our university community helped to create an understanding of the planning effort and demonstrated the value that the university placed on faculty and staff expertise and input. The approach also helped to build long-term trust and buy-in to the planning outcomes, as, even if most people did not have the opportunity or inclination to read the more than 400 pages of planning documents that were created, the process we used was broadly communicated and transparently carried out. At the conclusion of the planning process, we held a virtual town hall open to all members of the university community in which we provided an overview of the planning process, summarized the planning recommendations developed by the task forces, and answered questions.

The recommendations of the scenario planning task forces informed all aspects of the university's subsequent COVID-19 planning and implementation efforts. The full set of planning documents has proven to be a useful reference guide throughout the pandemic, but they were also synthesized to identify core planning themes and priorities that cut across all scenarios and areas of university activity.[3] The most important theme highlighted in all the planning documents, beyond core health and safety considerations, was communication. The task forces highlighted and emphasized the need to (1) transmit accurate and timely information to all members of our university community through both formal and informal communication channels; (2) ensure that information, guidance, and protocols were clear and consistent in their presentation; and (3) provide the resources necessary for anyone with questions or concerns to find answers and be heard.

The scenario planning process and recommendations had demonstrated the value of having broadly collaborative input into key planning decisions. University leadership determined that it was important to maintain this approach as we iterated the scenario planning recommendations into actionable implementation plans. An early key outcome of the process was the formation of the PFW Prepared Committee. Composed of twenty administrators and faculty and staff members from across the university, the PFW Prepared Committee was charged with using the findings of the scenario planning process to develop recommendations for how to modify the physical infrastructure of the campus and to establish health and safety protocols to achieve and maintain a low-risk environment for in-person instruction and work. While much smaller in scale than the scenario planning process, the central goal of the PFW Prepared Committee remained the same: to leverage faculty and staff expertise and to demonstrate the ongoing weight and influence of employee voices in shaping the university's response to the pandemic.

[3] The eight planning themes were communication; accommodations for students, staff, and faculty who cannot or will not return to campus; student and faculty illness; new health, safety, and sanitation procedures; international students; future transition(s) to hybrid/remote operations; applied learning experiences; and how to evaluate, compensate, and reward faculty and staff.

To address communication, and in accordance with the recommendation made by the Centers for Disease Control and Prevention (CDC), the university appointed a COVID-19 point of contact in June 2020 (2021). The point of contact had two overarching responsibilities: answer questions and respond to concerns from students, staff, faculty, parents, and community stakeholders, and help coordinate the university's overall COVID-19 response. With multiple committees, administrative offices, and academic leaders simultaneously developing and implementing plans and protocols, it was essential to have a single point person to ensure that everyone had access to and acted upon the same information. The sheer volume of information and guidance being compiled and communicated over the summer months also meant that it was easy for people not actively involved in planning and implementation efforts to miss relevant details, so having a direct point of contact accountable for providing answers and ensuring consistency helped to build confidence. One important aspect of this work was virtual PFW Prepared Q&A sessions, which were held weekly from July 2020 through May 2021 when the university was open, through which important updates could be discussed and questions could be answered. The university also launched a PFW Prepared website and weekly email newsletter dedicated to sharing the latest information about COVID-19 and the university's response.

Between the structured PFW Prepared communication channels and the responsive engagement through the COVID-19 point of contact, the university was thus able to provide the necessary resources to ensure that everyone could understand the what, how, and why of the university's fall 2020 operational plan. Communication would have been a priority even without the scenario planning process, but the consistency of recommendations in that area reinforced the need to be intentional about what was communicated, how it was communicated, and in telegraphing the importance attached to clear and open communication that was responsive to employee and students concerns.

Scenario planning, the PFW Prepared Committee, and other focused planning activities that took place throughout summer 2020 produced a tremendous growth in collaboration between administrative units and academic departments to meet the challenges of the pandemic. Some collaboration was borne out of necessity, such as efforts of the Registrar, Facilities Management, Special Events, the Division of Continuing Studies, and academic departments to completely remake our summer 2020, fall 2020, and spring 2021 course schedules to reflect changes to instructional modality and classroom social distancing expectations. Other collaboration, such as the formation of a new Educational Technologies Team from members of Information Technology Services and the Center for the Enhancement of Learning and Teaching, was driven by a desire to more efficiently meet the needs of students, staff, and faculty. In all cases, it has led to improved communication, the limiting of redundant effort, and suggests improvements in university operations that will outlast the pandemic.

Purdue Fort Wayne offered a limited number of courses in face-to-face and hybrid formats during its second summer 2020 session as a pilot for fall 2020. Employees started to return to campus throughout July and August. On Monday, August 24, the university welcomed thousands of students back to campus for the fall semester. While some students, faculty, and staff continued to learn, teach, and work remotely, and most aspects of our operations had been modified to reflect necessary health and safety precautions and protocols, the campus was open. Due to the significant efforts of innumerable people, the campus remained open throughout the 2020-21 academic year.

Proactive Planning for Fall 2021 and Beyond

Much of the public discourse throughout the first half of 2021 about the positive impact of COVID-19 vaccines was that they would make it possible to go "back to normal." Setting aside the need for broader transformations in higher education necessitated by demographic cliffs, stagnating or declining state financial support, and business model changes, the desirability of a return to "normal" presumes that institutions operated rationally, logically, and efficiently before the pandemic. Even the idea of creating a "new normal" focused primarily on continuing health and safety modifications much more so than embracing meaningful changes to various aspects of how universities behave. Purdue Fort Wayne's planning process for 2021-22 was motivated by how our university community could best leverage the learning and innovation COVID-19 had necessitated to improve the university for the long term. The planning process afforded us the opportunity to intentionally act together to make Purdue Fort Wayne a better place to learn, teach, discover, and work.

The spirit and lessons of the 2020-21 scenario planning process were instructive as the university adapted a smaller scale process in spring 2021 to proactively plan for the 2021-22 academic year. While no one can speak with certainty about the future course of the pandemic, the rollout of highly effective vaccines, combined with the year of experience with modified COVID operations, enabled us to plan around a single scenario for 2021-22 with a reasonable degree of confidence. Factors in this single planning scenario included the COVID-19 vaccine being broadly available to all members of our university community, most students and employees being back on campus, and the re-densification of classrooms and workspaces.

Premised on this baseline planning scenario, the university charged two committees with developing recommendations on how the campus should transition back to more traditional operations: an expanded PFW Prepared Committee and a new task force on academics and student support. The PFW Prepared Committee, which had continued to meet throughout the 2020-21 academic year, added several new members and was renamed the PFW Ready Committee to develop recommendations for fall 2021 operations. The academics and student support task force was created in partnership with the faculty Senate and was composed of

faculty representatives from each college and key administrators with responsibility for COVID-19 response and the instructional enterprise. The leadership of the faculty Senate had been heavily involved in the scenario planning effort in summer 2020 and had served on the PFW Prepared Committee since its formation. The Senate and its educational policy committee played a critical role in evaluating and approving temporary modifications of academic regulations. The formation of the academics and student support task force in spring 2021 was an important additional point of collaboration between the Senate and the administration to develop key recommendations for the future.

The committees established three guiding principles to inform all aspects of the fall 2021 planning process: (1) live the core value established in our strategic plan to put students first by maintaining student-centered expectations for all units; (2) create a better normal for Purdue Fort Wayne; and (3) embrace a wellness mindset (Purdue University Fort Wayne, 2020). Underlying each of these principles was the recognized need to learn from and leverage our COVID-19 experiences to improve the university moving forward.

A great example of this is the omnipresence of Zoom or other virtual meeting and livestreaming software options. The initial instinct of many people has been to either abandon virtual tools to the greatest extent possible once people are back on campus or to continue to live and work almost entirely in the virtual world. In the context of Purdue Fort Wayne, either extreme would constitute a missed opportunity. While we want to be back in person as much as possible, many virtual tools lower barriers to access, facilitate communication and contact, and have received a great deal of positive feedback from students on their efficacy. As a result, use of these tools should be strategically targeted in the future to promote student and employee engagement and support. We must also continue to embrace the culture of experimentation and innovation in our educational enterprise that the pandemic spurred.

Lessons Learned from Collaborative Planning

While not groundbreaking by any means, one of the core lessons of the scenario planning process has been the importance of giving people meaningful avenues to make their voices heard and then, whenever possible, acting upon what they have told you. The appointment of the PFW Prepared Committee and COVID-19 point of contact were embodiments of this lesson. Throughout the 2020-21 academic year, we carefully considered when, how, and who to ask for feedback on our COVID-19 response efforts that could yield actionable input. We surveyed faculty teaching the first face-to-face courses in summer 2020 to better understand their experience to inform further preparation and communication strategies for fall. During the first month of the fall 2020 semester, we surveyed all face-to-face instructors to ask about their classroom experience to identify what was going well, what challenges they were facing that we could immediately address, and what challenges would require additional planning in the future.

The week before the start of the spring 2021 semester, we sent a survey to all employees focused on how we could improve the university's response to COVID-19 moving forward and how they interacted with the various communication channels we had utilized to that point. We took immediate action where able and factored other insights into our 2021-22 planning efforts. For our fall 2021 planning, we sent a survey to both students and faculty asking about how students had experienced the pandemic, what they hoped would change in 2021-22, and what they hoped would stay the same. The results directly shaped both the academics and student support recommendations and the broader framing and messaging attached to them. All surveys were brief and were focused on gathering information that we could directly act upon. Even in situations where we have not been able to implement specific ideas for which people advocated, understanding what they were experiencing directly informed and improved our communication strategies and future planning efforts.

The nature of the COVID-19 crisis forced us to find new ways of working together across institutional silos and continually reminds us of the critical importance of remaining flexible. The scenario planning work to prepare for 2020-21 expedited the process of breaking down barriers, but in the year since we have continued to communicate and collaborate across silos in ways never previously experienced. The recommendations of the scenario planning task forces in the summer of 2020, as well as those of our two planning committees for fall 2021, were an essential foundation for subsequent university decisions and actions, but the course of the pandemic has demonstrated that the best plans are those that are flexible and adaptable to meet rapidly changing conditions. As we prepare for our post-pandemic future, we must continue to plan, act, collaborate, and adapt with an eye toward the whole institution.

Acknowledgments

While no names are used throughout the article, the planning and implementation processes described in this article were only possible due to the significant efforts of a large portion of the Purdue University Fort Wayne community. The author would specifically like to thank Chancellor Ronald L. Elsenbaumer and Vice Chancellor for Academic Affairs Carl N. Drummond for their encouragement to present information about Purdue Fort Wayne's COVID-19 response efforts to CUMU's virtual learning and sharing series and to prepare a version of that presentation for submission as this article. The author would also like to thank the two peer reviewers for their thoughtful reading and suggestions for improvement.

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Landing the Class: An Analysis of Innovative Enrollment Strategy and Leadership during the COVID-19 Pandemic

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Abstract

The devastation of COVID-19 substantively impacted enrollment opportunities for colleges and universities in the United States. Many higher education institutions responded to the crises by moving students off campus, enacting furloughs, increasing tuition, and appealing to their state and federal legislators for financial resources. At the University of Cincinnati (UC), critical considerations for campus leadership were how to best stabilize enrollment and resources and what needed to take place to ensure that underrepresented students were not lost in the process. Disparities exist in how the pandemic affects people of color and people from low-socioeconomic backgrounds. That, undoubtedly, was true for many of UC's students and their families from historically underserved backgrounds. UC launched a strategic initiative called Landing the Class to address enrollment concerns. The effort, which this article features, discusses how UC used innovative strategy and planning to address its enrollment challenges during the pandemic. Using a variety of institutional and national data, we provide an analysis of the extent to which the Landing the Class initiative was influential in helping the university reach its enrollment goals and implications for higher education leaders during the COVID-19 pandemic.

Keywords: strategic enrollment management, urban, higher education, access, affordability, college readiness

Introduction

The COVID-19 pandemic had a distressing impact on colleges and universities (Pollikoff et al., 2020). Revenue sources from state and federal governments were either threatened or eliminated. Private giving levels were flat (Stiffman, 2021). Revenue from tuition and fees was in question as many students and their families faced uncertainty regarding college attendance. Urban areas were affected drastically by the pandemic. Many city-dwellers opted to work from home rather than commute to work and engage in the typical attractions that many cities provide (Florida, 2020). State mandates and city ordinances almost certainly contributed to urban ecology. Traditionally, urban universities have had a unique position to engage in partnerships with their cities (Mundt, 1998), and issues impacting the city are inherently a part of the urban university's strategic planning (Smith, 2021).

The University of Cincinnati (UC), which has a mission to be a leading public urban university, was on the verge of having eight years of record-breaking enrollment when the COVID-19 pandemic forced many students to delay their enrollment or drop out because of its economic impact. Various research studies have examined the relationship between college access, race, and socioeconomic status (Baker et al., 2018; Hurtado et al., 1997; Mustaffa & Dawson, 2021; Nelson, 2003). Other studies have considered race and space, including urbanicity, in their research on access and choice (Dache-Gerbino, 2017; Dache-Gerbino, 2018). Studies have also explored location and college choice (Holloman & Nolen, 2008; Miller & Smith, 2017; Perna et al., 2011). Much of the literature on college access and enrollment suggests that students consider several factors specific to them to make their college decision, including family, financial costs, social identity, and location.

In early spring 2020, university leadership noticed that first-year enrollment trends depicted stagnation, presenting concerns in reaching institutional enrollment goals for fall 2020. The combination of these challenges and pre-existing enrollment issues regarding current students contributed to university leadership's decision to develop an innovative approach to combat the collective enrollment trends. As a result, UC launched the Landing the Class (LTC) task force. The purpose of this analysis is to offer an assessment of LTC at both divisional and institutional levels with a specific focus on enrollment.

The University of Cincinnati

The University of Cincinnati is the second-largest public university in Ohio and, in 2020, had a combined enrollment of 46,710 students. UC comprises three campuses, with its Clifton location serving as the main campus, offering a combination of baccalaureate, master, doctoral, and professional programs. The campus is located a little over three miles from downtown Cincinnati and a mile away from the historic Over-the-Rhine neighborhood. UC has two regional campuses located in Blue Ash and Batavia, Ohio, that primarily offer associate degrees. In 2018, UC

introduced Strategic Sizing, an institutional campaign to improve student enrollment size and quality, including an audacious goal of growing the student body from 45,000 students to 60,000 by 2028. Enrollment goals, created in each of the 13 academic colleges in concert with faculty, are a cross-campus effort most recently co-led by Enrollment Management (EM) and each academic college. Given UC's complexity and the purpose of the study, we decided to focus on UC's Clifton campus, its undergraduate and graduate student populations, and the impact LTC had from a strategic enrollment management perspective. At UC, the Division of Enrollment Management is comprised of Undergraduate Admissions; Advising and Academic Resources; College Credit Plus; New Student Orientation; One-Stop Student Services; Registrar Research and Assessment; Student Financial Aid; Graduate Admissions, CPS Strong Initiative; and University Advising Association. The Division of Enrollment Management is headed by the vice provost of enrollment management and four assistant vice provosts. They have shifted from an enrollment service lens to an enrollment management lens partly because of LTC.

Background on the Landing the Class Task Force

LTC is a university strategic initiative that called on cross-campus leadership to engage in collaborative enrollment planning to address enrollment challenges. Due to the complexity and decentralized organizational model of UC, this initiative needed to rise to the most senior level of the university instead of being managed by individual units and colleges. The president of UC and the vice provost for enrollment management co-chaired a working group comprised of campus stakeholders, including senior university leaders, staff, and faculty. Many of these individuals were selected based on their institutional knowledge and responsibilities. The task force was designed to have decision-makers and innovative thinkers in the same space to consider the various risks associated with the pandemic to collectively and deliberately decide on the appropriate responses to COVID-19. The president gave the charge to highlight the importance of this committee and its responsibility to help stabilize enrollment and resources. LTC attempted to stabilize enrollment and identify growth strategies by focusing on returning, admitted transfer students, and new student populations. Each week, LTC focused on a targeted population and identified approaches that could aid in achieving enrollment goals.

UC Enrollment Challenges and Strategies

In fall 2019, UC announced its seventh year of record-breaking enrollment with more than 46,000 students. With the celebration of yet again record-breaking enrollment, UC ended 2019 with an increase in first-year undergraduate applications for fall 2020. Spring is when prospective students begin to confirm their intent to enroll at a college or university in the admissions cycle. The university released a record-breaking number of admission decisions in response to its increase in submitted applications. Early in this cycle, UC was positioned to break the record for the number of incoming first-year students. Predictive modeling suggested that the

university would have an enrollment growth of 5% to 7% among incoming first-year undergraduates over the previous year.

In March 2020, a couple of weeks after the university decided to close in response to the rise in COVID-19 cases, the confirmation and registration rates for incoming first-year students began to slow. At that time, student enrollment confirmations declined 7% compared to the same time in the previous year. Registration rates for orientation and housing lagged by 10% to 15% compared to this same time the year before. Also, the Division of Enrollment Management lacked clarity on how to best describe the upcoming academic year to students and their families. There were several questions from future and current students that initially remained unanswered. Even more concerning, for the first time in seven years, UC was on the verge of not meeting its enrollment goal, which was antithetical to the purpose of strategic sizing. The pandemic challenged how the office of admissions was accustomed to operating. The division adjusted to these challenges by converting traditional campus recruiting events to a virtual platform, counseling students and families experiencing financial hardship related to the pandemic, and addressing the abundant competition between other colleges and universities.

Four prevailing challenges that would disrupt enrollment goals remained in front of campus leadership. The first was to identify realistic and achievable enrollment goals given current circumstances. This challenged university leaders to examine current enrollment goals outlined in strategic sizing plans and adjust as needed. According to goals outlined in strategic sizing, UC projected an overall increase of close to 1,000 students representing all student degree types. Faculty and academic colleges had to identify how to stabilize enrollment growth to remain the same as in 2019 before the pandemic, 46,388 students across all three campuses.
This required highly sought majors that had limited growth because of resources, thinking creatively about accommodating more students and course offerings, and recognizing that some majors will experience a decrease in enrollment. The second required university leaders to acknowledge uncertainty and coordinate communications while building trust with campus stakeholders and the public. UC needed to communicate that it was adequately prepared to manage the pandemic crises by addressing issues and remaining proactive. The institution also presented an overarching communication that, as a leading urban university, it would continue to offer world-class, quality education, including online. UC has provided online education for more than a decade, and its commitment to providing delivery options to students is directly tied to the university's strategic direction. The third challenge was stabilizing the university's financial position, which involved reviewing multiple financial models to minimize monetary loss and impact. As a result, the university decided that it needed to land the class with an overall enrollment of 46,388 (39,200 Uptown) students. The last obstacle was meeting institutional enrollment goals by retaining current students and growing new student enrollment while prioritizing equity and diversity. The following sections of the study discuss the university's strategy and approach for accomplishing its goals.

Enrollment Challenges and those Affected

According to the National Student Clearinghouse Research Center (2021), the COVID-19 pandemic negatively affected college-going populations, and colleges experienced losses in enrollment. All racial and ethnic groups experienced enrollment declines at the undergraduate level and impacted students of color and international students particularly hard (NSCRC, 2021). Compared to the previous academic year, international students, Native American, and Black students experienced the most substantial drops (NSCRC, 2021). As such, UC's LTC initiative focused on these vulnerable populations. During this time, prospective international students, while interested in enrolling at UC, could not enter the United States due to the travel restrictions. This setback would ultimately impact the number of international students enrolling at UC for fall 2020. For UC, 6.4 % (3,015) of its students identify as international students, and 17% (8,039) of its students are from underrepresented student populations (UC Facts, 2020). This year, nearly one in four first-year students are underrepresented, making up about 23% of the overall student population (UC Facts, 2020). Similar to the data presented by the National Student Clearinghouse, UC's student populations showed earlier signs of enrollment challenges. International and underrepresented student populations make up almost 30% of UC's enrollment portfolio across undergraduate and graduate programs, which would not allow UC to fulfill its enrollment goal.

UC performed a series of budget projections using national enrollment trends. Each assessment concluded that UC needed to employ innovative and strategic enrollment strategies to stabilize and grow enrollment during the global pandemic and a period when high school graduation rates are negatively impacting college attendance among traditional college-age students. Multiple research and population data reports indicate enrollment declines over approximately the next ten years. Underrepresented and international students are vulnerable populations, and they are also demonstrating the most growth in population size for colleges and universities (Grawe, 2018). Successful recruitment cycles are critical for the financial stability of colleges, especially so during a pandemic (Kafka, 2021). For UC, the pandemic increased students' access in multiple ways that run contrary to typical recruitment cycles. Some of these examples included flexibility in determining completed applications, extending deadlines, waiving test requirements, forgoing application and confirmation fees, increasing student support throughout the admission cycle, tuition discounting, and increasing access to financial aid.

Analysis and Findings

We examined several descriptive data to better understand the institution's approach to holistically addressing the pandemic's impact on enrollment. We referred to data available through UC's Office of Institutional Research and national data on enrollment from SimpsonScarborough and the National Student Clearinghouse Research Center. At a broader, institutional level, UC put into place several strategies that relied on frequently updated data to guide decisions for enrollment. For example, survey results released by SimpsonScarborough (2020) revealed that 40% of incoming first-year students who once aspired to attend a four-year institution were now likely or highly unlikely not to attend. Informed by these data, UC identified first-year applicants as a probable source for enrollment decline. Initial data collected in summer 2020 provided insight that for UC specifically, applications for first-time undergraduates were up from 2019 with a positive difference of 351, while new transfer student applications were down 169. Unfortunately, data also showed that while applications for first-time undergraduates had increased, the number of confirmed enrollments decreased compared to 2019. From the initial findings, an early emphasis was placed on identifying populations of focus and developing innovative approaches for retaining and recruiting these populations to meet enrollment goals.

Populations of Focus

In tandem with enrollment management, the LTC initiative focused on four populations: returning students, admitted students, transfer students, and new populations of students. A data-driven approach for each population was taken using innovative ideas tailored to each group to overcome probable enrollment decline. These approaches included specific marketing campaigns targeting subgroups of the four populations.

Returning Students

Retaining returning students was a concern, and emphasis was placed on the subpopulation of continuing international students, both graduate, and undergraduate. These students were at a heightened risk for summer enrollment melt because many returned to their home country at the beginning of COVID and could not return to the United States by the fall semester. Summer enrollment melt is a period when students reconsider whether or not to attend college, and in many cases, decide not to attend (Rall, 2016). This decision is prevalent among historically underrepresented students and can extend to international students. UC International, the office that supports the university's global education efforts, and Enrollment Management worked together to survey all international students to identify how many would be impacted and the actual population for outreach. The goal was to provide these students with an online schedule, wherever possible, to allow for their continued enrollment.

The survey response rate, 26%, was an initial concern. However, the data provided the shocking revelation that while only 9% of continuing UC graduate students returned home, 40% of undergraduate students did the same. Increasing flexibility for online scheduling helped reach the initiative's retention goal of most international students. However, much of its success was attributed to the development of the Bearcats Everywhere Scholarship. The scholarship provided and continues to provide international students, as of summer 2021, with a one-time tuition award for each semester applied. This funding matched what students would have paid for their non-resident surcharge, a discount for undergraduates totaling $7,667 for the uptown campus. International graduate students were also eligible, with the discounts varying based on the program and other stipends already provided. We found that throughout two semesters, scholarships paired with flexible online scheduling options resulted in the enrollment of 3,579 international students compared to the 2,952 enrolled for fall 2020.

Admitted Students

The LTC task force developed a few different approaches to help address admitted first-year student concerns. Each has specific metrics to meet the same enrollment goals set before the pandemic. The first approach allowed fall 2020 admitted students to begin classes in summer 2020. Traditionally, students admitted in the fall are not permitted to start early at UC. However, task force discussions helped identify that early student enrollment would create an opportunity to give students a head-start in their program and ensure their enrollment in the fall. This initiative was initially developed with the expectation that they would become more likely to remain enrolled by building relationships with incoming first-year students earlier. This was evident with the enrollment goal of an additional 75 fall 2021 admits being met after they could schedule summer classes.

The second approach to enroll admitted first-year students included leveraging additional financial aid dollars in place of both state and federal funding sources. Based on SimpsonScarborough (2020) data, 24% of study participants who were high school seniors believed that they might change their minds about attending college because of COVID-19. These findings suggested that UC could engage its urban core and enroll students locally who were still undecided. Also, more expansively, this initiative specifically targeted students in Ohio who were admitted to UC but had not yet confirmed enrollment. This push for enrollment helped UC compete for students who planned to attend an Ohio public university, staying home, or staying close to home. The objective was to increase awards for 800 students and yield 200 students as a part of UC's traditional enrollment goal. Ultimately, 100 new student yields were met through the facilitation of this initiative.

The Division of Enrollment Management also developed an institutional grant to address the disparities related to race, socioeconomic status, and financial aid. Scholars have suggested that

institutions should reexamine their roles in supporting students the summer that they matriculate to college (Tichavakunda & Galan, 2020). Insufficient financial resources, for example, are an obstacle to access for many college students (Perna, 2006; Perna et al., 2011). Also, studies have shown that financial aid like small grants contributes positively to student success outcomes (Denning et al., 2019; Hurwitz, 2012; Nguyen et al., 2019). The office supported incoming underrepresented and first-generation students by incentivizing them to complete their enrollment steps to mitigate the possibility of summer melt. Students had the opportunity to earn up to $1,500 depending on their enrollment status. This investment was novel because EM usually has minimal scholarship awards besides merit, which has historically led to financial burdens for students of color and first-generation student populations. Evidence exists that financial aid directly affects student outcomes such as access (Denning, 2019; Goldrick-Rab et al., 2012). For example, complications in the financial aid process contribute to students not receiving the entire amount of eligible aid and possibly influence their enrollment decisions (Page & Clayton, 2016). While not an exclusive outcome, UC had its most diverse class, with nearly one in four first-year students from historically marginalized populations or a low socioeconomic background this year. The total number of these students rose to just over 23%.

The last approach was a campaign developed with university housing called Start Where You Are. This initiative was implemented to support first-year students taking all their courses online. The initiative's primary purpose was to allow students to begin their first year from home or choose not to live on campus or in university housing for the fall semester, including waiving the mandatory on-campus living requirement. The initiative was designed to be program-specific and required active involvement from the Office of New Student Orientation for first-year students and major adaptations to their advising process. While metrics for this initiative were not as easy to set, we identified that the goal was met to maintain enrollment for incoming first-year students who may have been in jeopardy of not attending in the fall. This outcome was realized through the analysis of the overall enrollment of UC first-year students.

Transfer Students

Students' enrollment decisions were clearly in flux during the pandemic. Instead of waiting for conditions to evolve, LTC developed three targeted marketing campaign initiatives: Stay in Cincinnati, Change the World, and Ready for Next. The first campaign, Stay in Cincinnati, was used to engage incoming transfer students not currently in the applicant pool, including students from the Cincinnati and metropolitan area who attended other universities. The campaign was specifically aligned with the university's desire to lead as an urban public university. In addition, the campaign was also able to target individuals who were not currently in the workforce and wanted to return to school for up-skilling and additional credentials. The content of the messages focused on being a resource for transfer students regarding financial aid and transfer credit decisions.

The Change the World and Ready for Next marketing campaigns were crafted for the local Cincinnati market and developed to increase confirmations among first-year students changing institutional commitments and increase applications for incoming transfer students. These campaign efforts increased transfer applicants by 200 for fall 2021 and yielded 75 to 100 additional transfer students. We found it challenging to narrow down exactly which efforts produced the outcome of meeting fall enrollment goals or even if a mix of the three was the answer. Overall, the result was positive regardless of specificity.

New Student Population

The fourth student population LTC considered was new student populations. UC waived test requirements and application fees associated with enrollment, such as confirmations, housing, and orientation for incoming first-year and transfer students to the uptown campus. When considering the class of spring 2020 baccalaureate graduates, many of those who had planned to enter the workforce were changing plans due to the pandemic's contribution to a dearth of job opportunities and limited travel options and instead considering entering a UC graduate program. The university created a new opportunity for an unrealized student population to enroll in the Stay a Bearcat initiative. The initiative helped meet enrollment goals by engaging an entirely new group that might not have considered graduate education at UC before the pandemic. Stay a Bearcat was a robust effort with many moving parts (see Table 1) that ensured that students who did not plan to continue their educational pursuits could make an easy, stress-free decision on whether to attend graduate school. Finally, the metrics set for Stay a Bearcat, like the other initiatives, included an application goal and a yield. The fall 2021 graduate student enrollment goals were met, including increasing graduate applicants and yielding 176 more new graduate students than in fall 2020.

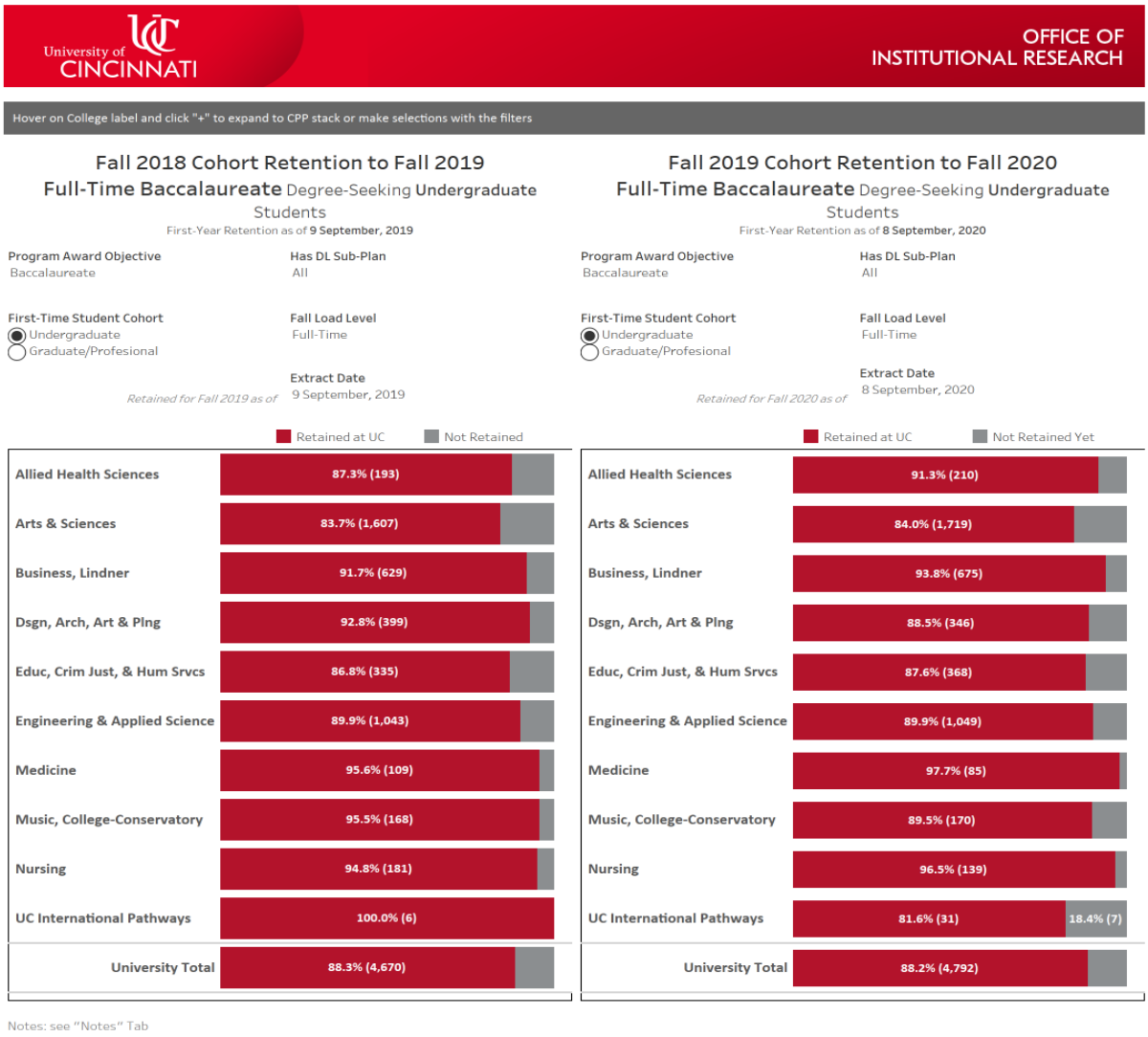
Table 1. Strategic Elements of Stay a Bearcat Initiative

1. Standardized test score waivers for prospective students
2. Referral process for students to a different program rather than being denied
3. Submission deadline extensions for programs
4. Increased contact with prospective students
5. Extension of confirmation deadlines for admitted students
6. Revamp of holistic admissions processes to attract a more diverse group of students
7. Movement of program start dates to allow for the most convenient start date

Measurement of Impact

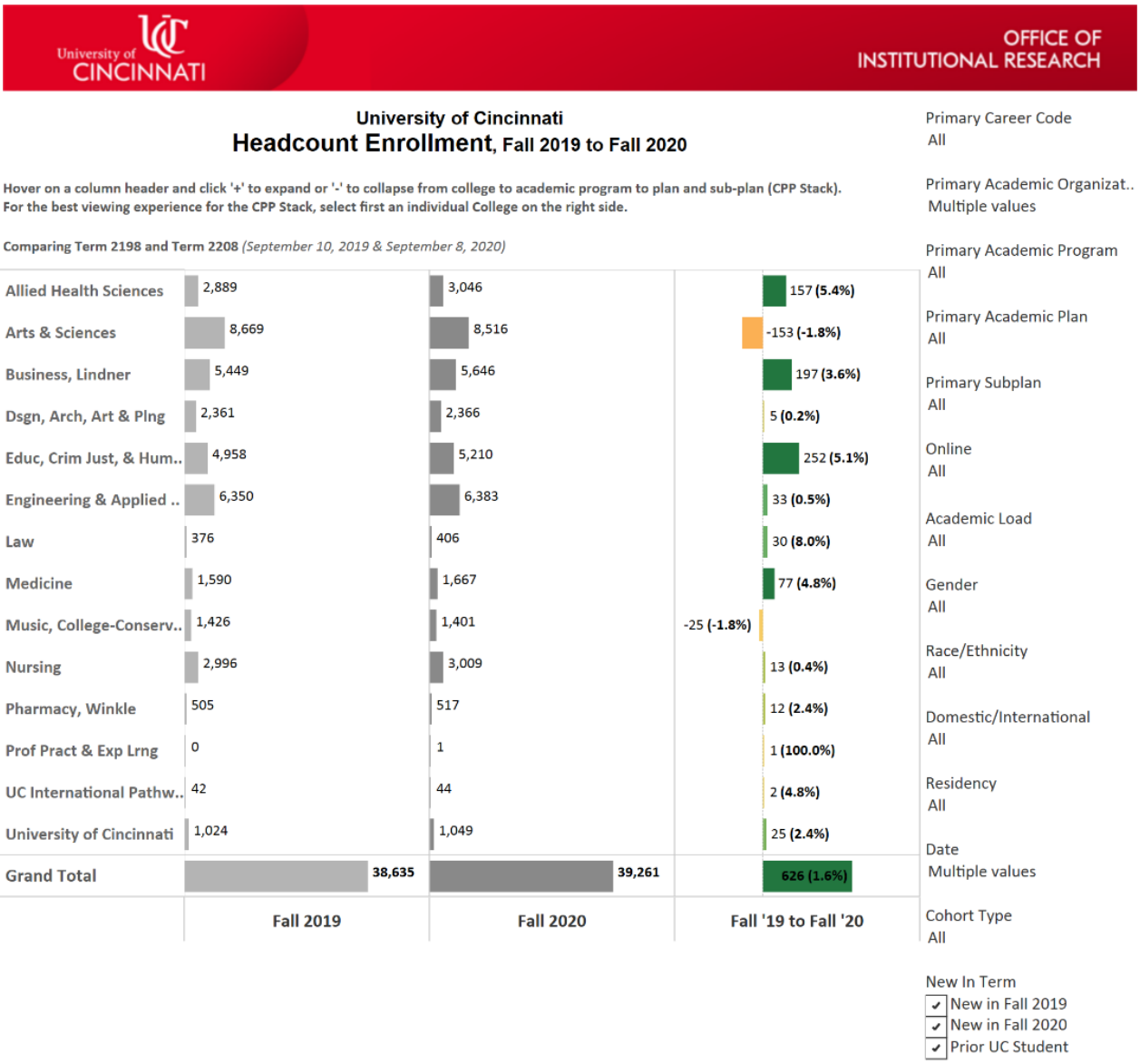
We identified that a vital part of weekly LTC task force meetings included gauging impact and progress through analysis of three established data groups automatically generated and sent weekly to the group before meetings. The task force evaluated pre-COVID data that reflected retention of the fall 2018 cohort to fall 2019 and compared it to current real-time retention numbers using the fall 2019 cohort's retention to fall 2020 (see Figure 1). The data collection included students retained versus those not retained for each college and the overall university retention total. Utilizing these typical year data as a means of comparison versus the retention conditions under the stressors of the pandemic allowed the group to actively monitor weekly progress and adjust their plan accordingly.

Figure 1. Fall 2018 Cohort Retention to Fall 2019



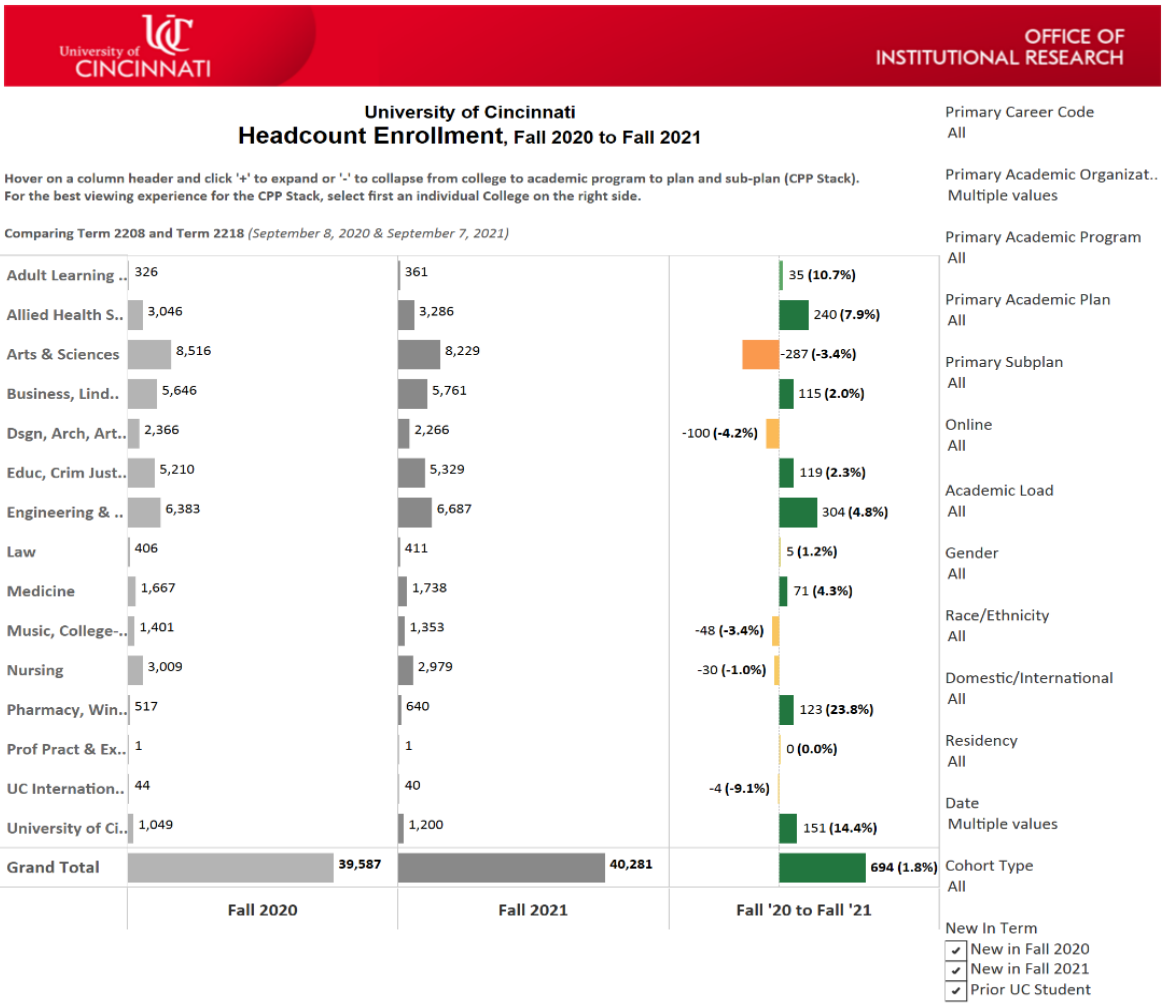
The second data extraction was an overarching enrollment headcount separated by colleges showing fall 2019 versus fall 2020 and a graphed depiction of change (see Figure 2). The data set provided the LTC task force with a broader depiction of the current state of enrollment. These data also indicated which specific colleges required extended efforts compared to others. These same data were also used to successfully monitor progress post-pandemic for landing the class from fall 2020 compared to fall 2021 (see Figure 3).

Figure 2. Headcount Enrollment, Fall 2019 to Fall 2020



The third data set the LTC task force utilized was the overview of university-wide enrollment goals set by the task force. This data set provided the group with a descriptive analysis of each of the focused populations discussed earlier with an additional layer of specificity of the student's degree type, including undergraduate, graduate, or transient students. The data considered enrollment, confirmations, and goals for fall 2019 and fall 2020, respectively. The data also considers fall 2021 goals and the metrics necessary to meet those goals.

Figure 3. Headcount Enrollment, Fall 2020 to Fall 2021



Implications for Practice and Conclusion

The COVID-19 pandemic pushed university leaders, including senior admissions and enrollment management officers, to think and operate differently than they traditionally have and offered valuable lessons and headway into cultivating a campus culture of strategic enrollment management. Sustainable practices, including a greater focus on strategic sizing and long-term planning, created opportunities for tactical conversations to figure out how the institution can increase financial assistance for Pell-eligible students who want to enroll at UC but cannot afford the costs. Multiple subpopulations of students share this situation, including first-generation, rural students, and more. Despite wanting to grow, the university has seen a decline in the percent of Pell-eligible students over the years. The pandemic presented a clear opportunity to yield and retain these students more competitively. Furthermore, LTC has allowed UC to be competitive in its yield efforts without creating new programs.

Moreover, LTC assisted in developing a culture that is interested in solving enrollment issues, less about crisis and more about strategic enrollment management. Another sustainable practice includes tactical meetings with university leadership versus the previous reporting on enrollment management processes, timing, and whom UC served. Lastly, in concert with a consultant, a cross-campus committee highlighted multiple friction areas regarding undergraduate student experiences that needed improvement to help reduce the melt of incoming students and retain current student enrollment.

The LTC task force developed several innovative approaches to meet enrollment metrics in response to what could have been a detrimental year for the institution. When the pandemic began, and institutions were sending students, faculty, and staff home before the end of the spring 2020 semester, UC rapidly prepared for the unknown. Their early preparation and emphasis on enrollment contributed to the university's efforts to retain students from the onset of the pandemic resulting in the most extensive summer enrollment in its 200-year history. The total headcount increased 1.5% over the previous year as of the first day of fall 2020 classes, and 783 more full-time equivalent (FTE) students were enrolled, an increase of 9.7% over the previous year. Also, gross tuition for the summer, including the removal of non-resident fees, experienced a slight increase. LTC recognized these successes but did not assume they would continue to span through the fall semester. While simultaneously considering summer enrollment, retention, and recruitment, the task force was able to help the institution start the fall 2020 semester as one of two public Ohio institutions with increased enrollment.

The findings in our analysis suggest that the UC's mission and approach to enrollment management are tied to its urban identity. The documents and artifacts that we examined for the study support this conclusion. Urban universities have unique opportunities to engage their surrounding communities during the most pressing of times. The pandemic illuminated UC's

efforts in addressing access and affordability, especially for students from the city and who now called Cincinnati home. The urban mission that guides the institution and its leadership was elevated because of the crisis. How UC managed through this once-in-a-century challenge was arguably rooted partly in its desire and strategy to engage the city of Cincinnati.

Our analysis suggests that UC was one of the fortunate universities to sustain itself during the pandemic. Takeaways from the study include the notion that LTC efforts brought enrollment management to an institutional forefront in a way that had not been previously established. Historically, enrollment management had not been involved in the planning at the college level. LTC cultivated a culture of collaboration between colleges and the office of admissions in the enrollment management process. Also, the pandemic propelled the opportunity for the university to redefine relationships with enrollment management and admissions and other institutional operations such as marketing and communications to centralize its collective admission efforts in a more efficient way.

College access is a priority that urban universities should keep in front of them by actively engaging their communities. Institutions should look for opportunities to invite constituents to have substantive conversations about promoting higher education to youth in their city and investing in partnerships with school districts within the metropolitan area. A sincere commitment to college access, specifically for citizens in the metropolitan area, demonstrates a commitment from the urban university to improve educational outcomes for their city and creates a more straightforward pathway toward postsecondary education for many.

Today, the division of enrollment management works more closely with college leaders in their planning efforts to ensure that they are establishing enrollment practices that are informed from Landing the Class committal and retention strategies. These recruitment experiences have informed how enrollment management will approach recruiting students in the future.

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University-Community Engagement during a Pandemic: Moving Beyond "Helping" to Public Problem Solving

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Abstract

The COVID-19 pandemic has been a major disruption in higher education, challenging universities to engage with community partners in unprecedented ways. Among them was an accelerated challenge to ways of engaging with surrounding communities and the resulting importance this holds for social change. A common approach has been for the university to offer mutually beneficial help to communities through top-down directives and strategies. Another approach prioritizes democratic engagement, including co-constructed knowledge generation and political action where the university is part of a larger ecosystem engaged in public problem solving and deeply sustained ways of collaborating. Moments of economic and social crises put into stark view higher education's intentions: are we playing at community involvement, or are we committed partners, leveraging our unique missions to join our communities in solving the problems facing us? This article discusses how a university's response to the pandemic illustrates democratic community engagement, including how the university partnered with community organizations to alleviate the dire impacts of the pandemic on peoples' basic needs and equity. Lessons learned for university-community engagement during normal times and times of crisis are shared, including ways to foster social change that addresses the inequities illuminated by the pandemic.

Keywords: Community engagement principles, problem solving, community partnerships, pandemic response, advocacy, social justice

Introduction

The COVID-19 pandemic challenged the ways many universities have come to be involved in their surrounding communities and the resulting importance this holds for social change. There has been a documented turn from the unidirectional, university-as-problem-solver model to collaborative knowledge generation and joint problem solving, often referred to as democratic engagement. (Saltmarsh, 2017). This turn provides avenues for higher education institutions to be informed by and enlisted as partners within community-led work for equity and justice (Eatman et al., 2018). Sgoutas-Emch and Guerreri (2020) argue that such a turn in an institution's relationship to its broader communities requires a broad network of campus-community partnerships through which the social change (particularly toward just ends) can be enacted. Moments of economic and social crises like the pandemic put into stark view higher education's intentions: are we playing at community involvement, or are we committed partners, leveraging a joint problem-solving approach with a network of community-campus partnerships to solve the problems facing us?

Our university's approach to community engagement is moving toward joint public problem solving and participatory and deeply sustained ways of collaborating. This is done through institutional transformation: internal structures (senior personnel, councils, and orientation for those seeking to do community engagement) and community-facing commitments (neighborhood engagement centers, re-examination of institutional practices, and involvement in civic processes) that anchor our way of being in and with our communities. Though not yet fully realized, these developments shape an environment where institutional-level campus-community partnerships are possible. We can convene collaborators from university schools/centers to agilely partner in public problem-solving efforts.

Our university's response to the pandemic illustrates how our foundation in democratic community engagement allowed us to respond to community partners agilely and nimbly through co-created solutions and advocacy. This article discusses how students, staff, and faculty were deployed to support community partners as part of an institutional response. We begin with a review of university-community engagement, including community engagement principles. Next, we discuss our university's overall approach to community engagement, followed by how this approach was integral to engaging in community problem solving around the needs exacerbated by the pandemic. Finally, we discuss lessons learned for higher education institutions during normal times and crises.

Community Engagement Principles

Community-university engagement is guided by principles that allow for reciprocal relationships between the university and the community, using democratic and asset-based engagement aligned with community strengths and problem-solving agendas. This approach uses a variety of strategies, including community-based research, civic engagement, and service-learning (Martin & Pyles, 2013). In addition, to be successful, community-university engagement must be "highly reflective, hybridized, purpose-driven, and ethically principled" (Dostilio, 2017a, p. 9). As this work evolves, universities committed to these principles see that the institution's role is not to lead but to be a learner, supporter, and partner (Dostilio, 2017b).

An anchor institution takes these principles of university-community engagement and brings them to life through place-based partnerships in the neighborhoods surrounding the university (Hodges & Dubb, 2012). The shared location creates a strong motivation for the university to partner because they are invested in the neighborhood and can help to foster stable, sustainable communities (Dostilio, 2017b). The intent is to bring university resources together with the public and private sector to "enrich scholarship, research and creative activity, enhance curriculum, teaching and learning, prepare educated, engaged citizens, strengthen democratic values and civic responsibility; address critical societal issues; and contribute to the public good" ("Community Engagement," n.d.).

Mutual benefit is a key success marker of community-university engagement (Bushouse, 2005; Farber & Armaline, 1998; MacKinnon-Lewis & Frabutt, 2010; Mattessich, Murray-Close, & Monsey, 2001). In relationship-oriented engagement, we seek mutuality that is "collaborative, reciprocal, honest, and involve[s] good will" (Bringle & Hatcher, 2020; Shafer et al., 2003, p. 162). Collaboration and reciprocity are essential, along with a democratic orientation that leads to mutual transformation, not just mutual benefit (Jameson et al., 2011; Saltmarsh & Hartley, 2011). Communities are informing the academy, and the academy is informing communities, leading to the "fundamental reshape of institutions of higher education and the role they play in society" (Cox, 2000, p. 17). Such a reshaping of roles moves the institution from helping to meet a need to participating in social problem-solving. The institution has a vested interest and degree of social responsibility to contribute to society beyond preparation and socialization of students for employment in the local economy, occupancy in the community, or even the collection of data for research, publication, and faculty promotion (Wade & Demb, 2009; Barkin et al., 2013; Chile & Black, 2015). Relationship-oriented engagement opens doors for marginalized communities to experience empowerment, universities to discover, test, and translate more effective interventions, and community institutions to develop a greater capacity to develop and implement data-informed interventions to improve community outcomes.

The institution's reshaping is reminiscent of a return to the roots of land-grant colleges anduniversities' charge to participate in the solving of social problems through direct engagement, all the while "provid[ing] knowledge for the public good" (Soska, 2015, cited in Grolar & McCall, 2018, p. 8). The International Association for Public Participation (IAPP) captures this "bidirectional flow" in its Spectrum of Community Engagement model, which emphasizes how the integration of engagement, communication, and community involvement facilitates shifts in civic participation from outreach, consultation, and involvement to collaboration and shared leadership (Clinical and Translational Science Awards Consortium, 2011; Barnes & Schmitz, 2016).

Commitment to Community Engagement during "Normal" Times

Our university has created a culture and structure for community-engaged service, teaching, and research through its office of Engagement and Community Affairs (ECA) and Carnegie Foundation Community Engagement Classification. ECA brings together internal and external stakeholders to develop collaborative partnerships and relationships. A significant component includes neighborhood commitments to three communities, the university's neighborhood, and

two additional neighborhoods, with place-based Community Engagement Centers. Moreover, "these commitments are grounded in mutually beneficial relationships that support the neighborhood's agenda while strengthening the university's mission of teaching, research, and service" (University of Pittsburgh, CGR, n.d.). Resources are provided to improve access to the university and support relationships between the campus and the community. Moreover, the university received the Carnegie Classification for Community Engagement, the country's highest honor that higher education institutions can achieve for embedding community engagement in their peer functions.

The university made a minimum 15-year commitment of investment, infrastructure, programming, and dedicated staff in two CEC neighborhoods (University of Pittsburgh, n.d.). To ensure this commitment to engagement is shared across the university, all sixteen schools provide dean-appointed representatives to sit on an Internal Advisory Council, which is coordinated by the Office of Engagement and Community Affairs and plays a key role in connecting schools/units to opportunities to engage with the community in a mutually beneficial way. In addition, each community has a Neighborhood Advisory Council, facilitated by the leadership of the Community Engagement Center in that neighborhood, that informs the ongoing collaboration with the university. This helps to shape the benefits to local partners and the larger community, including reviewing proposed programs, recommending site locations, referring job candidates, and working together to ensure a responsive and non-duplicative mixture of programs (University of Pittsburgh, n.d., p. 2).

Pivoting Community Engagement During the Pandemic

The university worked closely with its community-campus partners to pivot its community-engaged work in response to the pandemic. The Pandemic Service Initiative was created, with ECA leading and coordinating this effort through a COVID-19 Community Response Task Force, an interdisciplinary team of faculty and staff that met weekly during the height of the pandemic to respond to the needs of our community partners during this crisis. Several faculty members participating in this task force were also members of the Internal Advisory Council. In addition, many of the community partners engaged through this initiative were also participating in the work of the Community Engagement Centers, including the Neighborhood Advisory Councils. However, other faculty and staff participated in the task force, and partners from other communities outside the CEC neighborhoods were also engaged and assisted. The initiative focused on expanding university service, contributing to drives and collections organized by community organizations, and forging innovative, problem-solving partnerships (University of Pittsburgh, n.d.). The library system prepared a list of community resources, including information on COVID-19 prevention, testing locations, basic needs assistance, and access to online resources for children and families. Resources translated into multiple languages ensured support reached immigrant and refugee communities which continue to be disproportionately impacted by the virus (Lee & Miller, 2020). The university also supported school children struggling to learn online. Through a partnership with our local United Way, the university trained and deployed tutors, mostly university students, to support children participating in learning hubs. In each instance, the work undertaken was jointly shaped by community and campus partners, who brought to the task force what needs and approaches they felt needed to be pursued.

The University Chancellor allowed full-time staff and faculty to dedicate eight hours of their paid time each week to volunteer with the initiative. In addition, students were also encouraged to volunteer (University of Pittsburgh, n.d.). Since the beginning of the pandemic, this initiative has brought together over 539 staff and faculty members and over 100 students to volunteer at 29 virtual and in-person events, including vaccination clinics (Ward, 2021). Below we describe one of the Pandemic Service Initiative programs in more detail.

The Care and Connection Caller Program (CCC)

As part of the COVID-19 Community Response Task Force, the Care and Connection Caller program or CCC was developed in response to requests from community partners for assistance in reaching out, via telephone, to individuals and families they served who were isolated and most at risk during the pandemic. Community partners that were part of the CEC Neighborhood Advisory Councils approached ECA for assistance because of the overwhelming needs that quickly developed because of the pandemic. The CCC program was coordinated by an employee in ECA, under the leadership of the School of Social Work faculty. A committee was created for CCC that included faculty and community partners. Partners from other communities outside of the CEC neighborhoods also joined the CCC because they had similar needs for assistance and strong connections to the university. Needs were identified by community partners and brought to the CCC committee, who would then problem solve and discuss how Pitt could most effectively work alongside and support community partners. Needs also emerged and changed throughout the pandemic and were slightly different for each community partner. In response, we created online training for university volunteers to learn how to make the calls, as well as individualized scripts for each community partner, co-developed with partners, that addressed the specific needs of the people they served, including resources for housing, mental health, food, and later for COVID-19 testing and vaccines. For example, one agency served the elderly population, so connections needed to be made for food resources that could be delivered to this population. Another agency served the Latino community, so we worked with the agency to translate their scripts and resource guides into Spanish. The CCC helped our community partners expand their efforts to reach out to people who were isolated and provide them with the resources they desperately needed during the pandemic. During the first three months of the pandemic, over 100 volunteers were trained, making over 1,000 calls.

CCC partners served African American and Latinx populations, families, and senior citizens. A survey was sent to the CCC volunteers to get their feedback early on. Forty-four callers responded, and 79.5% started making calls at the time of the survey. Callers were asked about their experience on a scale from one, worst to five, best. Most callers had a good experience, with 64% indicating four or five; and 33% indicating three. Comments from the callers illustrated the reciprocity, sense of engagement, and purpose they felt while making the calls and the satisfaction in connecting with people and providing support. For example:

- “I think these calls provide healing in both directions. People who may feel alone in a highly stressful time are able to find companionship as well as meaningful, practical resources.”

- "I feel that the opportunity gave me purpose during this trying time. I feel [the university] and the service organization were very helpful and have the best interest of those they serve in mind."

Throughout the pandemic, CCC adapted to meet the needs of community partners, including helping to register people to vote, sign up for rent relief, and participate in a summer youth workforce program. In addition, the CCC pulled in other University departments to leverage resources (including securing translation services to create a COVID-19 resource briefing for immigrant and refugee communities). We also adapted the University Library System's LibGuide on COVID-19 into a one-pager that could be distributed by community partners, which was updated often on a weekly basis to reflect new information. Our most significant lift occurred when vaccinations became available for seniors in early 2021. The county health department asked the university to support two large-scale vaccination clinics in our partner communities. With less than a week to plan, the network of campus-community partnerships was tapped to lead the initiative, with the university providing additional capacity. CCC volunteers were brought in, and within 24-hours, they made calls and helped sign up 2,000 residents to receive their first vaccine 24-36 hours later. The CCC volunteers also reached out to everyone vaccinated at the clinics, sometimes multiple times. In addition, they set up a vaccination hotline to take some of the burden off our partners for callbacks. Our partnership resulted in 1,800 of the original 2,000 people receiving their second shot. CCC Partners continued to be involved in vaccination and other outreach, with the support of over 200 university volunteers making over 6,000 calls.

The CCC university and community partners were particularly attuned to the disparities facing the people being called. In most cases, these were individuals who had experienced poverty and racism, along with the adverse effects of COVID-19. Therefore, more than connections to resources were needed to address the longstanding issues exacerbated by the pandemic. The relationships needed to inform a larger response were in place and were activated in ways that marshaled collective decision-making and problem-solving. During weekly meetings, community partners raised issues consistently brought up in their calls with residents, particularly around food and housing. We discussed ways we could engage in advocacy around these issues and developed an analysis of local, state, and federal policies, including how local and national organizations were advocating to enhance/expand current policies. Speakers were brought in to provide information and feedback to community partners on potential advocacy pathways and to share data related to food, housing, health, and other inequities exacerbated by the pandemic, including comparing the impact of the pandemic on the mostly African American and low-income communities our partners worked in to more affluent and white communities. Relationships between university and community partners were built and strengthened through these Zoom meetings, resulting in genuine public problem-solving. The CCC partners continued to meet to discuss how to further advocate for policy change through the summer of 2021. The advocacy efforts of the CCC were recognized by The Pittsburgh Study (TPS, n.d.), which is a "community-partnered research initiative to find out what works to help children and youth thrive." The lead social work faculty member on the CCC is also a co-lead of the TPS Policy and Place Committee, whose role is to examine the impact of policies on child thriving through community-partnered and equity-focused policy analysis and outreach, including policies related to similar issues around housing and food insecurity that the CCC was addressing during the

pandemic. Community partners from the CCC have been invited to join the TPS Policy and Place Committee to continue their advocacy work around the issues exacerbated by the pandemic. This level of engagement with community partners will continue to strengthen as we work together to address the larger social and systemic issues facing the most vulnerable groups during and after the pandemic.

University and Community Engagement During a Pandemic: Lessons Learned

The COVID-19 pandemic challenged universities to be more vigilant in adhering to and practicing community engagement principles and engaging with partners in a public problem-solving approach. The university responded to the pandemic with a collaborative, community-driven approach. The Pandemic Service Initiative and the Care and Connection Caller program illustrate the community engagement principles of democratic engagement, reciprocity, mutual benefit, collaboration, and shared leadership. The university did not approach communities armed with lists of resources or services it was willing to donate from a distance at the height of the pandemic. Instead, the university paused and listened to its existing network of campus-community partnerships to jointly expand avenues of assistance and collaboration during an incredibly uncertain and unprecedented public health crisis. This was possible because of the university's existing relationships with partners through ongoing community engagement efforts that embrace a culture of genuine civic participation.

In many ways, the ability to quickly activate faculty and staff across schools and units represented an internal reliance and valuation of the abundant social capital and goodwill built over time, cultivating relationships with grassroots, organizational, and elected leaders across our community. This was due, in large part, to institutional resources being used to capture, catalog, and celebrate the engaged research, courses, projects, and programs that made the Carnegie classification attainable. While within the context of the COVID-19 pandemic, our efforts were concentrated on place-based engagements with key partners, a university of our size and scope understands that community configuration extends to identity, ideology, ability, and other defining characteristics.

Mutual benefit and reciprocity were also illustrated throughout the PSI and CCC. The university benefitted because its people and resources were targeted in ways that built upon its strengths and expertise. The communities benefitted because the initiatives were built upon their strengths and knowledge and on-the-ground analysis of their communities' needs. The communities further benefited by selectively enlisting the resources of a large institution with considerable social and political capital to address the key issues they faced during the pandemic. Solutions were also developed collaboratively through honest and open dialogue about inequities and inequality (Collins and Guidry, 2018), resulting in shared leadership among university and community partners. One university staff person noted that new resources were also developed in response to community needs, such as providing laptops for kids who had to learn remotely, as well providing basic supplies such as cleaning and disinfecting products that were scarce during the pandemic.

The pandemic was also occurring as the country's longstanding structural racism became more visible due to protests following the murder of George Floyd (Blake, 2020; Dreyer et al., 2020).

These issues were front and center for our community partners who are and/or serve people of color, particularly within the African American community. We began to discuss these issues in our weekly calls with the CCC and other partners the university collaborated with on the Pandemic Service Initiative who were fighting health and racial injustice. Community engagement requires that even large institutions like universities alter their direction in response to community needs. Thus, the university and community partners reframed the initiative to develop a program to educate university volunteers and students about the importance of civic action around issues exacerbated during the pandemic. Civic Action Week was established during the pandemic but will continue each year in collaboration with community partners.

Our collaborative efforts during the pandemic also illustrate the importance of institutionalized versus individualized partnerships. Namely, the effective coordination of university assets and resources needed to meet community needs under such unique circumstances resulted in a significant impact because it was supported by individuals connected to a community/university partnership infrastructure. The Pandemic Service Initiative was able to link community partners to resources throughout the university, bringing different departments together to provide support. Partnerships were not occurring in silos, thus enabling collaborations best suited to community needs and social, economic, racial, and health issues. This also prevented duplicating efforts or overwhelming organizations with requests for partnerships. In a tough time, when silos could have built up due to isolation, partnerships between the university and community blossomed, growing stronger than before, laying the ground for mutually beneficial relationships now and in the future. Community engagement principles undergirded all this work and provided the foundation for genuine partnerships. These are not only lessons for transforming what we do during a pandemic but can serve as inspiration to ignite and orient more faculty to the possibility of community engagement principles to translate their research, passion, and a sense of community responsibility into solutions that improve community outcomes during “normal” times as well.

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Empowering Those Who Seek to End Hunger through Collaboration and Innovation

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Abstract

Feeding America Eastern Wisconsin (FAEW) distributed 84% more food to community members in need during the COVID-19 pandemic than in the prior year. Though systems were in place to manage food receipt and distribution data, social distancing requirements and technological barriers revealed inefficiencies in utilizing this data. In pursuit of data-driven decision-making and in the context of a global pandemic, FAEW partnered with Marquette University data scientists through an industry-supported grant. Applying newly learned skills in Business Intelligence, students produced detailed reports of data cleanliness in FAEW's source systems to improve underlying data quality and better support analytic efforts. Additionally, students synchronized human-centered design thinking and visual analytics to produce an interactive application to optimize inventory management, storage availability, and product distribution. Finally, students are utilizing business analytics techniques such as supervised and unsupervised data mining to provide new insights about food receipt and distribution patterns that will have a sustainable impact on FAEW operations. This unique partnership offers students experiential

learning opportunities, tangible data science solutions that FAEW will use to ensure best practices, and real-world solutions to collaboratively end hunger in our communities.

Keywords: COVID-19, Data Science, Business Intelligence, Data Analytics, Food Distribution, Community engagement

Introduction

Thirteen million U.S. households face food insecurity (>10% of all households nationwide), representing uncertainty in having, or inability to acquire, enough food to meet the needs of household members due to insufficient money or other resources (U. S. Department of Agriculture, 2021). Feeding America Eastern Wisconsin (FAEW) served more than 400,000 people in 35 Wisconsin counties (10.2% of the population) before January 2020; however, in the subsequent one month period, the U. S. Bureau of Labor Statistics (2021) reported an increase of 10,000 unemployed people (approximately quadrupling the number of unemployed). This dramatic spike in unemployment exaggerated underlying disparities in our community, forcing many additional families to rely on the public service FAEW provides to receive healthy and nutritious food. Between February and April of 2020, FAEW saw a 67% increase in food distribution compared to the same timeframe in 2019. Much of FAEW's food is donated by wholesalers, retailers, and manufacturers, leaving most of the donated food received near the end of its shelf-life. Effectively managing this increase indefinitely required innovation and resources that FAEW did not have.

Marquette University's (2021) prestigious President's Challenge award supports innovative, interdisciplinary, and collaborative work that addresses critical issues and opportunities facing the City of Milwaukee. Marquette University faculty and students formed a unique alliance with FAEW leadership that brings together the field of data science and the mission to end hunger. Through experiential learning, faculty-mentored students developed the business intelligence, business analytics, and visual analytics tools FAEW needs to end hunger more effectively in our communities, which is illustrated in Table 1. Students (a) optimized current visual analytics practices using licensed software, (b) performed high-level data interrogation on legacy information within FAEW's database, (c) created an entirely de novo interactive application to support business decisions, (d) attempted to utilize historical information to identify determinants of food purchases, and (e) transformed a tabular hunger needs formula into an interactive application to support ongoing funding efforts. This complex project empowered students to utilize cutting-edge data science techniques to address meaningful and contemporary real-world challenges in an environment where the highest levels of corporate leadership are highly engaged and directly impacted by the accordant results.

Table 1. A list of data science initiatives supported through this collaborative, interdisciplinary, and innovative partnership. Each project was led by one student or groups of students based on their interests.

Challenge	Data Science Solution	Description
Optimizing Dashboard Functionality	Business Intelligence	Elevation of the level of report automation to save time spent creating Tableau dashboards.
Legacy Data Cleaning	Business Analytics	The inspection and correction of inaccurate or missing values within a dataset to improve data quality, and therefore the overall productivity for analytic purposes.
Interaction with Company-Wide Data	Visual Analytics	Interactive web application designed to give users the ability to glean meaningful insights in previously specified areas of interest within FAEW.
Purchased Product Optimization	Business Analytics	Supervised and unsupervised data mining designed to reveal patterns in the data, leading to the optimization of purchased products.
Hunger Needs Formula	Visual Analytics	Interactive application giving users the ability to manipulate variable values to estimate Total Ask and Total Estimated Pounds.

Novel Experiential Learning Pipeline

Learning data science techniques requires data, and often, students seeking training in data science have data sets available to them through work, research, or other avenues. Some students, however, wish to gain access to new data sets that support their learning. Two leading faculty members and one student had a first formal meeting with leaders from FAEW and toured the warehouse at FAEW shortly before the COVID-19 pandemic. To end hunger, especially during the COVID-19 pandemic, faculty and leaders at FAEW proposed this collaboration project. In this case, students were invited to express their interest in participating in a research team seeking to aid FAEW. Students selected for participation in the program could concisely articulate their interests and qualifications. Selected students (n = 5) executed non-disclosure agreements with FAEW, and created a secure data portal to exchange data between Marquette University and FAEW. In addition to receiving hourly pay, students could submit qualifying work for course credit in Marquette University's Data Science curriculum with instructor approval. Students, key leaders at FAEW, and faculty advisors met monthly to review the

progression of student work, and ad hoc meetings were held between students and FAEW partners as needed to achieve individual goals. Total project time was twelve months **(**July 2020 to June 2021), as stipulated in the President's Challenge award opportunity.

Business Intelligence to Optimize Dashboarding

The volume of data amassed at FAEW over four decades of service to the community contains the essential information needed to support daily, weekly, monthly, and annual decisions that ensure those in need of food are served. Examination of these data in their stored form, or even in a spreadsheet, limited practical value to those leaders needing to make rapid decisions about food acquisition, storage, and distribution activities. Software companies identified this need and created robust platforms for organizations like FAEW to import their data and create visuals, dashboards, and applications. FAEW had a pre-existing license with Tableau; however, this plug-and-play solution has some less obvious embedded functionality that presents data to leaders who wish to utilize their data to gain knowledge. After building a business case with FAEW leadership, students assessed readiness, created a business intelligence roadmap, developed scope, and obtained approvals to optimize current practice.

The main goal of enhancing Tableau practices was to automate reports and save time spent creating dashboards. Historically, FAEW users would export data from Primarius (a food-bank-oriented database management solution) to Excel, replace data sources in Tableau, and perform validation. Students observed visual analytics users at FAEW and found that approximately two hours were spent per day creating these reports. Students then created dashboard templates within Tableau to reduce the time spent repeating these creation steps. The visual component of most of the dashboards did not change; however, the underlying processes were changed to elevate the level of automation as new data were provided. The first two phases allow the newly created workbooks to serve as templates in which only data sources need to be replaced to create new reports. Documentation of changes to the underlying dashboards were documented in one-page guides provided to FAEW containing summary features and narrative text. FAEW representatives with subject matter expertise reviewed and validated all changes. The applications designed by data scientists in training (Marquette students) have been tested and approved by key staff and leaders at FAEW. Subsequent observation of users generating the dashboards revealed that no more than ten minutes were required to generate the same information, corresponding to an estimated 458 hours saved in person-hours per year.

Legacy Data Cleaning with Business Analytics

Preparing clean and well-structured data sets is a prerequisite for reliable and insightful data analytics. FAEW accumulated a large amount of data during its nearly 40 years of operation, providing abundant resources for data analytics. However, raw data usually require cleaning before analytics can be conducted with high reliability and accuracy. Common data aberrancies include incorrect, incomplete, duplicated, or improperly formatted values. The central data components in FAEW's network include (a) agencies (or members), who receive foods from FAEW and distribute them to people in need; (b) donors or vendors, who provide foods or products to FAEW; and (c) products or foods, which flow from donors/vendors to agencies and then to people in hunger, as illustrated in Table 2. The key entities in FAEW's relational database management system (i.e., Primarius) map those major components in their network. Therefore, data cleaning was conducted on data sets for agency, donor/vendor, and product. The fact that FAEW staff were already deeply familiar with data stored within Primarius achieved two goals: FAEW could provide subject matter expertise for data elements and tables to Marquette University students, and there were no barriers to technology adoption.

The data cleaning process included three major steps: data extraction, data analysis, and reporting. Raw data sets were first extracted from Primarius and then imported into RStudio (an Integrated Development Environment for R) for data analytics. Using various R packages (e.g., tidyverse, DT, and knitr), the quality of the raw data sets were examined, and aberrant values (such as missing, incorrect, and redundant values) in the data sets were identified and summarized in reports with visualizations (i.e., charts and tables). Reports were prepared using RMarkdown, which combined texts, codes, and visualizations and improved consistency and reproducibility. The data cleaning process was iterative. After FAEW improved the data quality in Primarius based on the findings in the reports, new data were extracted and sent to the Marquette University team to check the data quality using the same cleaning process, ensuring aberrant data values were fixed. A secure electronic pipeline was explicitly created for this project, and accordant non-disclosure agreements were executed to preserve the confidentiality of FAEW's data. Three data sets (for agency, donor/vendor, and products, respectively) were processed for data cleaning. As anticipated for any large organization with decades worth of data, the agency data set included over 500 aberrant values, involving variables such as agency reference number, agency name, zip code, state, and city. Having clean data subsequently supported the data transformation, visualization, and modeling in other aspects of this project. In addition, the data cleaning process helped FAEW improve the quality of data in Primarius and increase their productivity for various reporting tasks on a daily, weekly, monthly, or annual basis to stakeholders.

Table 2. The number and types of aberrant records, by table, found in FAEW's source data

Table	Number of Aberrant Records	Examples of Variables Impacted
Agencies	560	Agency Ref, Agency Name, City, State, Zip, Contact
Donors and Vendors	962	Donor Ref, Donor Name, City
Products	1,446	Product Ref, Name, Storage

Interacting with Company-Wide Data

Clean data served as the foundation of our team's efforts to extend FAEW's ability to derive meaningful insights and make informed decisions about their food acquisition and distribution practices. An assessment of reports that FAEW leadership created periodically revealed a scarcity of visuals that aggregated data in meaningful ways. Thus, students were assigned to nested groups within FAEW's leadership team to explore the needs of leaders to manage their inventory effectively, interrogate the duration of which products had been stored in two central warehouses, and called-out opportunities to store large, unanticipated food donations rapidly. In addition, students employed human-centered design thinking to support user-driven innovation and technical solutions. Design thinking is taught as part of Marquette University's Visual Analytics course (Department of Computer Science). It follows loosely the framework developed by Stanford University as published in their Design Thinking Bootleg guidebook. A three-page interactive application was subsequently programmed using RShiny, a web application framework for R.

Inventory and Threshold

The inventory and threshold page gave power to the user to investigate quickly and accurately the inventory of specific warehouses through quick-read widgets and a comprehensive data table. The widgets allowed the user to determine the number of on-hand items less than 20 pounds by weight or fewer than five cases, indicating low inventory. Coupled with the widgets was a gauge readout to inform users of a percentage of all inventory items that Wisconsin partner agencies cannot order online. The table allowed the user to search the uploaded data for any insights drawn up outside the widgets and gauge.

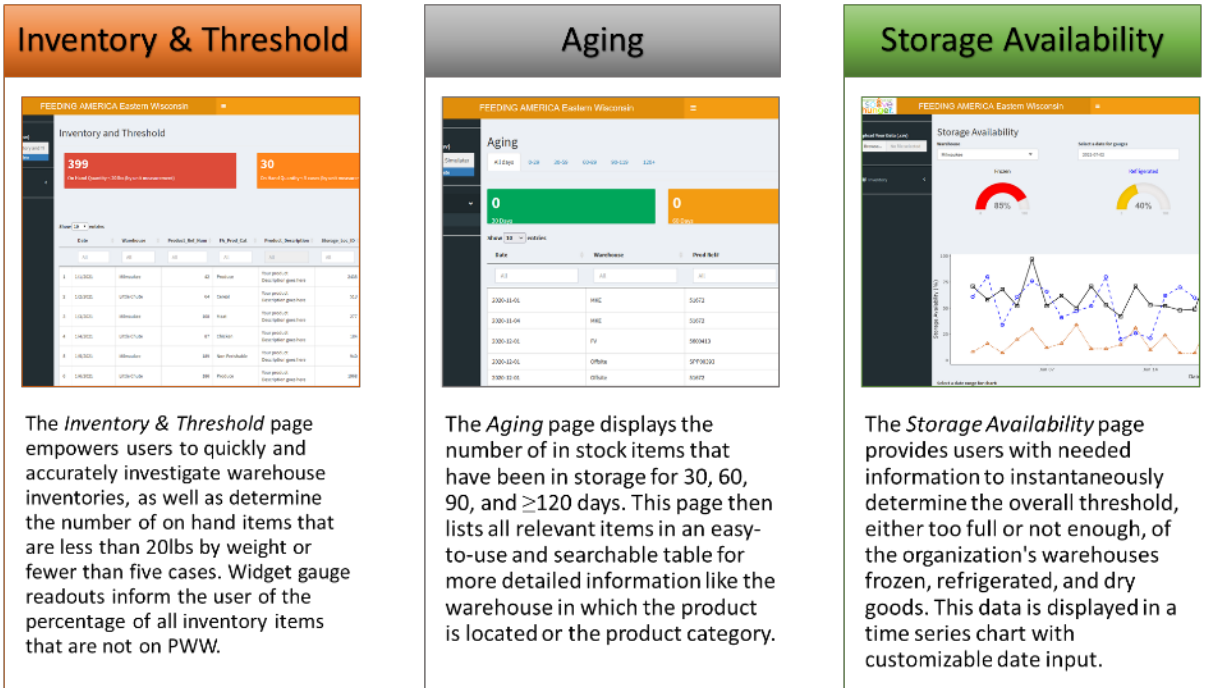
Aging

The aging page gave the investigator quick readouts with widgets of how many items in stock had been in storage for 30, 60, 90, and 120 or more days. This page then listed all relevant items in an easy-to-use searchable table format for more detailed information, such as the warehouse it is in or the product category. This type of information gave agency to the user to make more informed decisions and prioritize tasks and resources to make the most efficient impact on the region's inventory based on time in storage.

Storage Availability

The storage availability page gave the end-user the needed information to instantaneously determine the overall threshold, either too full or not enough, of the organization's warehouses frozen, refrigerated, and dry goods. Three color-coded gauges displayed this information, with < 40% representing green, 40 – 80% representing yellow, and ≥ 80% representing red. This data was also displayed in a time series chart with customizable date and warehouse input. Specifically, the user saw specific moments in time, defined by the user, of the frozen, refrigerated, and dry inventory. This type of information empowered users to see trends in inventory, such as seasonality, that previously might not have been noticed.

Figure 1. Screenshots and brief descriptions of three pages of the interactive web application.



This tailored, interactive application is available privately to defined users at FAEW through an online web portal. Students created a short vignette of instructions for users to extract, load, and transform a data set from FAEW's source system that consumes fewer than a few minutes. That document was then uploaded into the hosted environment and fed the application with all relevant data. Analysis of improvements in key performance indicators resulting from this application was ongoing.

Attempts to Optimize Purchased Products

As there were gaps between donated food and the food items needed in the community, not all food distributed by FAEW was donated. Therefore, students also attempted to employ predictive analytic techniques, specifically supervised data mining, to aid FAEW in understanding the determinants of purchased products. Possible techniques were evaluated. The Naïve Bayes method for supervised data mining was selected since purchased was a binary outcome variable. Though naïve bayes was efficient and straightforward in terms of computational load, it required categorical predictor variables and made the underlying assumption that all predictor variables were independent. Thus, students interrogated FAEW data (e.g., warehouse, storage, weight, etc.) using classic techniques to confirm variable independence and binned (i.e., grouped) numeric variables as appropriate. More than 20 models were built and interrogated for combined sensitivity and specificity (i.e., if the model is able to predict whether or not a product will be purchased in the future). Unfortunately, even with several environmental variables not contained within the data set itself (e.g., seasonality, region, etc.), model outputs simply lacked the specificity needed by FAEW to make robust predictions about product purchases. Therefore, students are currently partnering with FAEW leadership to conceptualize additional data elements to collect to support more robust analytics.

Transforming a Hunger Needs Formula

Finally, and perhaps one of the more subjective positive outcomes of this collaborative research effort, FAEW leadership was exposed to the skills and talents of data science students. This, combined with FAEW's deep subject matter expertise and wealth of experience in providing food to those in need, created an unanticipated opportunity requested by FAEW leadership. Through a combination of business intelligence, business analytics, and visual analytics, students developed an interactive application that transformed a rudimentary, albeit effective, spreadsheet formula into an interactive, easy-to-use application that allowed FAEW members to input values, such as the number of people in need, the number of meals, the cost per meal, etc., to derive the total number of pounds of food and dollars needed to support a projected increase in need. This fully autonomous application provided FAEW with a sustained tool to ensure that they continue to end hunger in our communities.

Conclusions and Future Directions

Whereas food insecurity decreased in metropolitan areas, food insecurity is increasing in non-metropolitan and rural areas (Nord, 2002). In part due to the SARS-CoV-2 pandemic, it is estimated that food insecurity will affect 1-in-7 Wisconsinites in rural counties during 2021 (Feeding America Eastern Wisconsin, 2021). Unique dietary needs of rural populations and underlying disparities by race, ethnicity, age, and socioeconomic status exacerbate challenges associated with providing quality food to those in need in these rural communities (Jernigan et al., 2017). Foremost among the barriers to feeding food-insecure members of rural communities is a paucity of information about these communities' unique needs and infrastructures. We are in the process of proposing a project that addresses food insecurity in rural places using three phases:

- conduct thorough market research and identify existing data sets to inform strategies to treat food insecurity in rural places, supplementing with data collection as needed,
- utilize statistical modeling, supervised and unsupervised data mining, and forecasting techniques to reveal new insights into the determinants of successful food provision in rural communities, and
- design and implement natural experiments within FAEW's broad food distribution network to test hypotheses that will inform best practices in food distribution across all rural communities.

Lessons learned by students, FAEW leaders, and faculty included an adjustment to entirely remote collaboration due to SARS-CoV-2, the importance of compensating FAEW leaders for buy-out time to divert from daily operations to collaborate with students, an expansion of faculty' office hours to support the development of data-scientists-in-training carefully, and adapting to health and wellness needs during a global pandemic. Setting clear expectations, both program-wide and for each project, helped achieve critical objectives within the short timeline available for funding. In addition, leveraging key personnel's robust project management experience helped address unanticipated challenges with grace. The authors acknowledge that these features may not be routinely available in all academic-community partnerships and encourage a resource assessment before launching such efforts. Much effort focused on bridging the gap between what our community partner needed and what could be achieved by higher education institutions and data scientists in training through various discussions on identifying needs, designing prototypes, using simulated data sets, and testing the applications from users' perspectives. Communication is the key to the success of this collaboration project. Deepening this proven collaborative relationship between Marquette University and Feeding America Eastern Wisconsin will transform work thus far into a larger project with a broader scope to produce meaningful and institutionalized translational research opportunities for years to come.

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