



“I Don’t Think the System Will Ever Be the Same”: Distance Education Leaders’ Predictions and Recommendations for the Use of Online Learning in Community Colleges Post-COVID

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While the COVID-19 pandemic necessitated the short-term use of online courses, colleges’ experiences with COVID-era online course delivery may also affect the way that they offer and approach online courses going forward. We draw on interviews with 35 distance education leaders from the California Community Colleges system to provide insights into how the use of online education may change in the system going forward. Leaders predicted that post-pandemic, colleges would increase their online course offerings, and that many instructional innovations to online courses from the pandemic—such as the use of synchronous courses—would persist. They hoped that a more prominent position for online education within the system would be matched by more resources to provide supports for online learning.

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Abstract

While the COVID-19 pandemic necessitated the short-term use of online courses, colleges’ experiences with COVID-era online course delivery may also affect the way that they offer and approach online courses going forward. We draw on interviews with 35 distance education leaders from the California Community Colleges system to provide insights into how the use of online education may change in the system going forward. Leaders predicted that post-pandemic, colleges would increase their online course offerings, and that many instructional innovations to online courses from the pandemic—such as the use of synchronous courses—would persist. They hoped that a more prominent position for online education within the system would be matched by more resources to provide supports for online learning.

Keywords: Online learning, distance education, COVID-19, diffusion of innovation

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During the first two decades of the 21st century, the use of online education expanded rapidly in institutions of higher education. In the 2016-2017 academic year, 76% of degree-granting institutions offered online courses, an increase of about 6 percentage points compared to 2012 (Xu & Xu, 2019). While the share of institutions offering online courses has risen, the growth in online course-taking rates among students has been even more pronounced. Between 2012 and 2016, the number of students taking any online course increased by about a million students, representing a growth rate of roughly 19% (Xu & Xu, 2019). This trend was especially pronounced in broad access institutions. While only 19% of students in the most-selective colleges took at least one online course during the 2016-17 academic year, 39% of students were enrolled in online courses at non-selective institutions (Xu & Xu, 2019).

The COVID-19 pandemic necessitated an explosive expansion of remote instruction on an emergency basis for nearly all colleges and universities. Institutions nationwide shifted administrative and academic operations entirely online in Spring 2020. As a result, roughly 85% of undergraduate students reported that their schooling was disrupted because their classes moved wholly or partly online in Spring 2020 (Cameron et al., 2021), and about half remained fully-online through the 2020-21 school year (Felson & Adamczyk, 2021). As public health officials have suggested that COVID-19 is likely to become endemic—continuing to generate new infections, but no longer dominating daily life in the same way that it has since spring 2020—institutions will need to consider how to plan for education in a post-COVID world. Given this shift, a particularly salient question moving forward is likely to be how colleges should reconsider the position of online education on campus.

In this paper, we draw on interviews with college distance education leaders from the California Community Colleges system to consider what changes experts foresee for online education in broad-access institutions going forward post-pandemic. Overall, leaders raised three main changes that they

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anticipated would occur in the wake of COVID. First, they predicted that many faculty and students who were new to online education may be more open to online courses in the future, leading to a considerable increase in demand for online learning, as well as an expansion of online course offerings that will create new avenues for online courses to contribute to the competitive positioning of colleges. In addition, college distance education leaders identified multiple instructional innovations that they anticipated would persist to affect post-COVID course offerings, including innovations that allowed new courses to be moved online for the first time, new approaches to improve engagement in existing online courses (particularly through the use of synchronous tools for engagement), sustained use of technology in face-to-face courses, and changes in assessment. Finally, they identified institutional supports that would be needed in light of the anticipated new role of online education, including the use of professional development and forming consensus around promising practices to ensure high-quality online instruction, expanded staff to support online instruction, and funding support for online infrastructure.

To our knowledge, this is the first study drawing on the insights of those who had pre-pandemic leadership roles in distance education to consider how the position of online education in postsecondary institutions may change post-pandemic, filling an important gap in the literature. Moreover, although this study collects data from leaders from California community colleges, it is likely that other state community college systems and four-year institutions may begin to contemplate policies regarding distance learning in the post-pandemic era. Accordingly, the insights from institutions in this study will have broad implications for online course offering and relevant policies nationwide.

Background and Literature

Online learning was well established in the California Community College (CCC) system prior to COVID-19. However, the rapid and abrupt transition to fully-online operations in March 2020 brought an abundance of critical changes to overall college operations including administrative functions, student services, and instruction that impacted nearly 1.8 million students across the CCC system. Changes to operations necessitated changes in the position of online learning within colleges, and raised the potential for longer-term changes in the use of online and remote learning in community colleges. To contextualize

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the changes in institutional and individual perspectives related to online teaching and learning across the CCC system, we highlight theoretical literature on diffusion of innovations. We then review the pre-COVID state of online education and current literature around COVID-19 in higher education, including gaps in that literature, to ground our study of projected changes to online education going forward.

Diffusion of Innovation Theory

Our analysis draws on Rogers’s (1962; 2003) theory of diffusion of innovation, which posits that diffusion of a given innovation depends on its communication from one individual to another within the same social system, with the innovation process unfolding over time (p. 11). Diffusion of innovation theory has been applied extensively in higher education organizational change literature, including among a number of studies that explicitly explore faculty adoption of education technology in their courses (e.g., Bennett & Bennett, 2003; Hixon et al., 2012; Medlin, 2001; Pereira & Wahi, 2017; Shea et al., 2005; Soffer et al., 2010; for a review of this literature, see Sahin, 2006).

Rogers (2003) theorizes that people pass through a predictable set of stages as they consider whether to adopt a given innovation. In particular, adoption processes begin with individuals’ burgeoning awareness of the innovation, which they hear about from another actor in a social system in which they are embedded (the *knowledge* stage). Potential adopters then gather information and form opinions about whether the innovation may be desirable in their particular situation (the *persuasion* stage). Interested adopters progress to a trial (or *decision*) stage in which they may try out the innovation (*implementation* stage) but are not necessarily fully committed to adopting it long-term. The implementation stage also generally involves innovation in its own right, as new adopters modify and reinvent the original innovation to fit their particular circumstances (Rogers, 2003, p. 180; Sahin, 2006). In the *confirmation* stage, the

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individual may then either adopt the innovation, or discontinue its use if the individual does not find it valuable (Rogers, 2003, p. 18-19).

Rogers (2003) outlines several conditions that help determine whether individuals will find innovations sufficiently valuable to adopt. In particular, he argues that potential adopters weigh the *relative advantages* that innovations offer over past practices; the *compatibility* of the innovation with the needs, values, and beliefs that individuals hold; the *trialability* of the innovation, or whether individuals can try out new innovations in order to determine whether the innovation works for them; and the *observability* of the innovation, or the ease with which they can obtain understandable information about how the innovation works. They may be discouraged from adoption if the *complexity* of the innovation is too high.

Individuals go through the process of adopting innovations at different times. Rogers classifies individuals into five groups based on when they adopt new innovations (Rogers, 2003, p. 282-285). *Innovators* search out new techniques and ideas pro-actively, while *early adopters* have antennae tuned to promising new innovations and tend to be trusted sources of information for peers considering whether to adopt new techniques. As they hear positive feedback on new innovations, individuals in the *early majority* and *late majority* groups adopt new innovations, with late majority adopters generally being more skeptical towards new innovations. A final category, called *laggards*, may resist new innovations absent strong incentives to adopt.

While our study traces how leaders believe the pandemic will ultimately contribute to the diffusion of the innovation of online teaching in the California Community College system, we turn now to a review of how of online teaching had been expanding in the system pre-pandemic.

Pre-COVID State of Online Education

Prior to COVID-19, online courses were common in the California Community College system, making up roughly 24% of course offerings (Cooper et al., 2020). Online courses were primarily

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asynchronous, without time-based meeting requirements (CCCCO, 2011). These courses generally required students and faculty to be proficient in the use of Canvas, the platform adopted as a common learning management for the CCC system (CCCCO, 2018), and required students to have a high degree of autonomy and self-motivation in order to succeed in the course (Kalman, et al., 2020; Lewis et al., 2014; Vanslambrouck, et al., 2019). While many faculty members who taught primarily traditional, face-to-face classes needed only limited technology proficiency in their campus learning management system, the level of proficiency, training, and interest in using technology to enhance instruction varied (Hart et al., 2021a; Lloyd-Smith, 2010).

Because online learning requires a different set of student proficiencies than traditional face-to-face learning—including digital literacy (Bambara et al., 2009; Jaggars, 2011; Xu & Jaggars, 2014) and self-regulation (Quintana et al., 2018)—and poses some challenges associated with achieving high quality interaction in the virtual environment, faculty and institutional attitudes towards online education have been mixed (Betts, 2014; Ciabocchi et al., 2016; Wickersham & McElhany, 2010). Prior to the COVID-19 pandemic, a survey of faculty governance leaders found widespread skepticism that online courses could be an appropriate substitute for face-to-face learning (Ciabocchi et al., 2016). Faculty governing leaders consistently expressed concerns about poorer student learning outcomes, subpar teaching, insufficient faculty training, limited time and compensation to develop courses, overreliance on adjunct faculty, and general poor academic quality in online classes (Ciabocchi et al., 2016). However, a few studies also point to some key advantages of online learning flagged by faculty and administrators, including flexibility for students who have demanding schedules and the opportunity to explore courses offered outside of their community that would have been inaccessible otherwise (Dumford & Miller, 2018; Picciano, et al., 2010). These mixed attitudes—with faculty and administrators expressing both skepticism about online education and recognition for its potential benefits—may have fostered an environment primed for a potential shift in willingness to uptake online education as a new innovation in the face of a sea change such as that posed by COVID-19.

COVID-19 Literature on Online Learning and Current Gaps

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The literature documenting the impact of community college transitions to online learning during COVID-19 focuses heavily on student, faculty and administrative perspectives. Many articles shed light on the intense challenges that community college students, especially those from marginalized communities, faced related to the digital divide, social isolation, social and racial tension, unemployment, lack of basic needs, and mental and physical health concerns (e.g. Bartlett & Braman, 2021; D’Amico et al., 2021; Floyd et al., 2022; Kimble-Hill et al., 2020; Schudde et al., 2022). Other studies confirm the negative impacts of the pandemic in terms of student performance or enrollment (Aucejo et al., 2020; Bailey et al., 2021; Bulman & Fairlie, 2021). Studies surveying and interviewing faculty highlight the challenges that faculty faced in piloting new and unfamiliar online teaching techniques; managing their isolation and stress; and coping with a perceived lack of support and overwhelming requests from administration (Casacchia et al., 2021; Deutschman et al., 2021; Mazur et al., 2021; Tang & Servin, 2020). Finally, a handful of studies capturing administrative perspectives emphasize challenges in maintaining enrollment, as well as the lessons learned around communicating with college stakeholders, mobilizing support around students' basic needs, and getting students connected to technology (McCarthy & Ferreira, 2021; Strayhorn, 2021; Ison et al., 2021).

While these papers are critical to contextualizing the full scope of impact that this abrupt move online had, there are relatively few studies documenting how lessons learned from the pandemic may continue to shape education going forward. An exception is in a handful of studies that highlight innovative instructional methods leveraged among disciplines—such as science, technology, engineering, arts, and mathematics—that historically had limited representation online (Bartlett & Braman, 2021; Kolack et al., 2020; Simamora, 2020; Vasquez, 2020; Washburn & Bragg, 2021). One review also synthesizes evidence from multiple studies from before and during COVID to provide recommendations around instructional changes that may apply post-COVID-19 (Schrenk et al., 2021).

However, there is limited understanding regarding the broad picture of how the position of online instruction is likely to change in the post-COVID era, including both instructional innovations and the broader positioning of online education in institutions. To our knowledge, our study is the first to answer

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this question drawing on the insights of those who had distance education leadership roles even prior to the pandemic. Established DE leaders may be especially qualified to provide insight on this question, given their personal experiences observing and navigating changes in attitudes towards distance education among their colleagues pre-pandemic. Given that public college systems in other states also face similar situation regarding distance education, research drawing on the insight of distance education leaders in California is also relevant to community college and other systems of higher education across the country.

Methods

To shed light on the likely position of distance education in broad access institutions post-pandemic, we drew on interviews with distance education leaders across the California Community Colleges system. Between July and December 2020, we used purposeful sampling to invite leaders from 114 California Community Colleges operating on physical campuses as of spring 2020 to participate in interviews or small focus groups. We excluded Calbright College, a fully-online campus launched in Fall 2019, and Madera Community College, launched in July 2020.

Because the structure of distance education departments varies across colleges—ranging from lacking dedicated distance education departments to having dedicated deans overseeing departments in charge of online education—we targeted a role that existed at most campuses: distance education (DE) coordinators. DE coordinators generally help to promote course quality, e.g., through keeping abreast of state guidelines around requirements like maintaining regular effective contact and ensuring that faculty implement legal requirements and best practices through mechanisms like offering professional development around online pedagogy. When colleges lacked DE coordinators or we could not identify someone in that role, we contacted leaders in other, related roles such as deans of online instruction, faculty leaders on college committees focused on online education, or instructional designers. In some cases, leaders that we initially contacted suggested that we also include colleagues in other roles—such as student services leaders, instructional leaders, or leaders in faculty senates—in interviews as well. For simplicity, we refer to our sample collectively as “distance education leaders”.

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We interviewed 35 distance education leaders across 27 unique colleges. Most interviews (18) were individual, but in some interviews—particularly when the participants were from the same college—participants were in pairs (7) or a group of three (1).¹ As Table 1 shows, colleges that participants represented had similar characteristics to the California Community College system as a whole, based on data from the Integrated Postsecondary Education Data System survey; there were no statistically significant differences in mean characteristics of our sample compared to colleges in the CCC system overall. Among our sample, 74% were distance education coordinators or held other job titles directly related to online education (e.g., online education coordinator, instructional designer, dean of distance learning). The remaining 26% were faculty leaders or administrators whose primary roles were not necessarily in distance education (e.g., deans of instruction, instructional faculty who also served as leaders in the academic senate, instructional faculty who also served leaders on faculty committees on distance education). Because the individual characteristics of respondents were not a primary focus of this study, and because we wanted to avoid identifying details to the greatest extent possible given the limited pool of distance education coordinators, we did not collect data on respondents’ demographic characteristics. For similar reasons, we assigned respondents gender-neutral pseudonyms to mask characteristics that could identify respondents.

Interviews generally lasted 45 to 90 minutes, and were conducted over Zoom by the first author (a White, mid-career female academic). Per our IRB agreements (UC Davis #1542511), a consent form was circulated and signed prior to the interviews, and we confirmed receipt of consent documents before recording. Interviews were conducted leveraging a general semi-structured interview approach, ensuring that similar questions were asked to interviewees about their experiences, while allowing freedom and adaptability in probing for more specific and detailed information (Kallio et al., 2016; Turner, 2010). Interviews were recorded and we obtained Zoom transcripts, which we reviewed against the original

¹ Participants were asked whether they preferred to participate individually or with a partner. When contacted participants suggested that we include colleagues from the same college, we generally scheduled those interviews as paired/group interviews.

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audio and edited for accuracy. Field memos were written up after each interview, generally the same day, to capture major ideas discussed during each conversation. We emailed field memos to respondents to allow them to respond or correct any misimpressions.

Analyses were conducted using constructivist grounded theory approaches (Charmaz, 2014). We conducted two cycles of inductive coding, using Dedoose software. In the first cycle, the first and third authors conducted initial coding (Charmaz, 2014; Saldaña, 2016) to establish initial patterns in the data. For instance, we identified a set of codes related to “predicting the future”, in which respondents predicted phenomena such as “changes in attitudes” towards online learning and “changes in resources” devoted to online learning. This initial coding overlapped with our data collection period, and patterns that began to emerge from coding allowed us to refine our interviews to probe patterns of interest (Charmaz, 2014). The first author generated an initial codebook by coding roughly half of the transcripts, and then trained the third author in the codebook. Reliability of coding was established by both authors co-coding an overlapping set of transcripts and resolving discrepancies to come to common understanding in the meaning of the codes.

For this paper, we focused on analyzing a set of codes that were future-oriented (e.g., “predicting changes in attitudes towards online courses”); that described successes that could bear replicating (e.g., “instructional successes”); and that identified on-going challenges (e.g., “challenging subjects to move online”, “ensuring accessibility”). All authors participated in writing an initial round of analytical memos based on the first-round coded excerpts to explore emerging major themes (Charmaz, 2014). For instance, one memo focused on synthesizing insights from excerpts discussing benefits of synchronous vs. asynchronous courses, reflecting anticipated instructional changes.

The team discussed how to refine our codes based on these initial memos, and the first author conducted a second round of focused coding (Charmaz, 2014; Saldaña, 2016). Using this second set of codes, we revised and recombined the set of emergent themes to identify a final set of themes and sub-themes detailed below. While we allowed themes to arise from the data inductively, the themes mapped

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cleanly onto several aspects of diffusion of innovation theory, and so we connect our data with that organizing theory as well.

In presenting quotes below, we edit lightly to eliminate repetitive words (e.g., “to see, to see if...”) or filler words (“like”, “um”, “you know”, etc.). Editing was done carefully in order to preserve the meaning of quotes.

Trustworthiness and Credibility

We implemented several steps to ensure that our analysis was trustworthy. First, as noted above, we sent memos recounting major interview themes to participants after each interview and incorporated corrections that they made. We also drew on prior personal experience in the CCC system among our team members. For instance, two of our team members (the second and third authors) had pre-COVID experience teaching online and in-person in the CCC system. They brought with them personal experience with community-college teaching, as well as relationships with colleagues who navigated the transition under COVID as faculty members and distance education leaders. Finally, we also asked several outside readers with connections to distance education in the CCC system to read early drafts of this paper. While all errors are of course ours, their feedback helped us to further hone our themes.

Results

Three main themes emerged from interviews with the distance education leaders. First, the interview participants foresee continued growth in the use of online education going forward, driven by faculty interest, student demand, and a need to maintain a competitive edge relative to other colleges and sectors. Second, the distance education leaders pointed out several instructional innovations that they anticipate will remain going forward, including innovations that allow new types of courses to move online; the use of new techniques to improve engagement in online classes, including the adoption of synchronous online instruction to

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complement traditional asynchronous delivery; the incorporation of new technologies into primarily face-to-face classes; and possible changes to assessments. Finally, in response to these changes, the distance education leaders point out the need for institutions to commit resources and support for the new role online education plays in higher education going forward. Below we detail each of these three themes.

Theme 1. “Demand for Online Seems to Be Growing”: New Position of Online Education on Campus Going Forward

DE leaders predicted substantial growth in the use of online education on campuses post-pandemic. These predictions were driven by a sense of increased respect for and openness to online teaching among faculty, by a belief that a growing number of students experienced the convenience of online learning and saw online courses as a setting where they could thrive, and by a recognition that a rise in student demand for online courses heightened the importance of offering high-quality online courses for colleges concerned about competing for student enrollments.

“Not Just Eating Bonbons”: Increased Awareness and Respect for Online Teaching

In a post-pandemic world, DE leaders anticipate an increased role for online education due, in part, to a shift in beliefs about the efficacy and accessibility of online instruction. To a large extent, this reflected DE leader impressions that some faculty who were previously resistant to online learning may become more receptive post-COVID. DE leaders reported that some faculty who held negative feelings about online instruction found that they enjoyed teaching in an online environment more than expected. One participant noted:

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[T]here are faculty who have discovered that online teaching is not as hard as they thought it was going to be, and I don't mean hard in a workload [sense]. I mean hard as in “I didn't think I would be able to connect with my students online”...Those are anecdotes about how, “Oh, yeah, I thought this [teaching online] was great.” (Cameron)

Another participant echoed this impression, noting that faculty found online instruction more appealing than they had anticipated: “I hear a lot of things from faculty saying, ‘I can't believe that this works so well. I can't believe that I was able to meaningfully facilitate learning in this environment’ ” (Avery). These quotes exemplified comments from numerous distance education leaders that faculty without prior online experience were surprised that meaningful interaction was possible in an online setting. These comments echo diffusion of innovation theory (Rogers, 2003) in that distance education leaders believe that online education may expand post-pandemic partly because faculty members found online instruction more *compatible* with their instructional goals than they had assumed it would be before teaching online.

Faculty’s pre-COVID attitudes may have also have reflected beliefs that online learning was less rigorous or that online instructors were putting less effort in to teach their classes than faculty in traditional face-to-face classes. However, after moving their courses online, some of these reluctant adopters began to realize that online instruction required a substantial amount of work and committed time from the faculty and could be delivered with a high level of rigor. One participant recounted colleagues saying they “had no idea how much work was involved” in online teaching, adding that these admissions were “refreshing” because online educators had faced skepticism pre-COVID that they were “really working when they're teaching online” (Lee).

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This shift in faculty attitudes may result in both an increased acceptance of online courses in academic departments, as well as an increased willingness in previously-resistant faculty to voluntarily accept new online teaching assignments. One participant reported encountering many faculty colleagues who were “absolutely scared to death to teach online” that now “have this confidence [and] want to go ahead and pursue teaching online in the future, whereas they never, ever would have voluntarily done that on their own” pre-COVID (Sidney). In this college, as in many others, DE leaders observed that online teaching experiences improved faculty confidence related to online instruction and made them more willing to consider online assignments. In Roger’s (2003) parlance, COVID-19 effectively pushed faculty past the *knowledge* and *persuasion* stages and increased the *trialability* of online instruction as an educational approach by making its use mandatory during the pandemic. The exposure to online education that faculty received during this trial may have made them more receptive to future use.

This was a relief to some DE leaders who expressed that prior to the pandemic, institution-level culture undervalued distance education. For instance, one leader reflected, “...I think the college now understands what it is to be an online teacher, that we're not just sitting around eating bonbons and ...playing tennis: that it does involve teaching. So, I think all those misconceptions have been washed away” (Riley). This sentiment was echoed by another participant, who described a college culture where distance education “was always looked down on for years and years... I do think that has changed currently. I hope it stays in memory, in institutional memory, once we get out of this” (Auden). This shift in faculty interest in online teaching may help institutions to adapt more readily to shifts in instructional needs as the pandemic progresses or if students begin demanding more online options post-pandemic.

"Oh, This Really Works for Me": Predicted Changes in Student Demand for Online Courses

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In addition to faculty becoming more comfortable with online teaching, DE leaders believed that students have become more comfortable with online learning, and they anticipated growing demand for online class options. Some participants predicted attitude changes on the part of students who “maybe were afraid to take online and never had, and then they were forced to and they're realizing, ‘Oh, this really works for me’ ” (Jess). In other words, as with faculty, students may be finding online learning more compatible with their needs than anticipated.

In addition to increased comfort with learning online, students’ impressions of the convenience of online classes may contribute to increases in demand as students, particularly those with demanding work and family schedules, become aware of the flexibility that online learning offers “without putting all the rest of [their] life on hold” (Terry). Post-pandemic, students may still value the ability to take classes at home, avoiding challenges with commuting, childcare, and scheduling that come with taking courses face-to-face, especially if more courses that were only offered in person pre-pandemic become available online. Prior research has suggested that students tend to choose online classes for reasons of convenience, even if they feel that online instruction might be associated with some compromise in learning outcomes (Jaggars, 2014; Hill, 2019). Accordingly, as students have experienced the convenience of online learning during the pandemic, some students who were reluctant to take online classes pre-pandemic may now see them as a viable option both in terms of the learning experience and convenience.

Indeed, some DE leaders reported that they have already seen heightened demand for online classes as a result of the comfort and convenience factors. As one leader reflected:

The student demand [for online] seems to be growing. I mean, I teach a couple of classes that within the second day of registration for spring, they were already full, with a full waitlist. So the students...I think, are going to demand more and demand a variety, not

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just the core stuff...but more variety, so they can get their ADT [Associate Degree for Transfer] degrees...mostly online. (Bailey)

Previously-discussed shifts in faculty and institutional attitudes may enable colleges to more rapidly scale-up online course offerings to meet increased student demand, particularly given that many faculty were trained in online teaching as part of the pandemic transition and that some institutions made significant investments in technology infrastructure and support (Hart et al., 2021b).

“Smart Shoppers and Smart Consumers”: Increased Competition for Online Students

Some DE leaders suggested that anticipated increases in student demand for online courses could result in competition for student enrollments both within the CCC system and with other public and private universities. One participant predicted that students would become savvy consumers, shopping for online classes across multiple colleges based on course quality:

[As] students become more and more smart shoppers—smart consumers — they're going to have less tolerance for a shoddy online class and they're not stuck because the next campus is 50 miles away [like for a physical campus]. The next campus is one click away. (Terry)

Other leaders agreed that colleges may increasingly begin competing for online students. For instance, Alex, whose college faced likely cuts in courses due to financial pressures, predicted, "at some point, we are going to be offering [online courses] in which students from other colleges will be able to enroll in [our] online courses, and students from our college will be able to enroll in theirs." Alex stressed that the college should be preparing for this development by continuing to improve course offerings.

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These pressures—and opportunities—may be heightened due to tools like the Online Course Exchange through the California Virtual College-Online Education Initiative (CVC-OEI). The Course Exchange shows open online courses systemwide and gives students an opportunity to enroll in online classes at other colleges. As one participant points out, if “...a student wants an online class, and can't get it at [our college], they may go to the Exchange” (Devon). Many leaders believed that colleges would need to continue to increase the quality and variety of “local” online course offerings to avoid losing students to colleges with a more robust set of course offerings or to colleges that have made larger investments in online course design and instructional quality. This suggests that online offerings may expand if programs and colleges believe online education provides *relative advantages* in attracting and retaining students.

Theme 2. “I Don’t Think the System Will Ever Be the Same”: Anticipated Instructional Changes

At the same time that DE leaders anticipated that online courses would serve a growing share of students, they also anticipated that the structure of courses would change in the wake of COVID-19. DE leaders shared a number of success stories around new instructional techniques for online learning. In some cases, this involved techniques that allowed faculty to convert classes online that had never before been taught online, opening the potential for classes to be taught in a broader array of subjects than previously. In others, this involved discovering or honing techniques to improve student engagement or course assessment practices that could be applied to improve any class—either newly-online or legacy-online—going forward. Leaders also anticipated that changes could affect face-to-face classes and other domains like assessments post-pandemic. In each of these cases, our leaders’ insights reflect *re-inventions* and

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modifications (Rogers, 2003) of online course delivery that occurred during the rapid implementation of pandemic-era online instruction that may increase the likelihood that individual instructors or programs more broadly continue to use online education post-pandemic.

“Creative Solutions”: Developing Instructional Approaches for Classes Newly Online

One major theme was that different disciplines within colleges found new ways to teach material that hadn’t previously been taught online. Many subjects, especially those involving face-to-face demonstrations of different physical techniques, had relatively little online presence pre-COVID, so the crisis forced these disciplines to develop entirely new approaches to teaching. One participant recounted that prior to the pandemic, many colleges had challenges offering classes often required for two-year degrees: “Figuring out how to get a fully-online degree without having an online lab [science] class has been an obstacle for everybody; doing a fully online speech [public speaking] class...is always a tricky one. And those are all requirements for the associate degree” (Lane). In addition to lab-based science classes and public speaking classes, other participants named subjects like childcare classes, career-technical education, or art-based classes as posing particular challenges to move online.

During the pandemic, however, DE leaders reported that different departments developed new techniques that could be used to expand online offerings in these fields going forward. Several DE leaders described efforts by their science departments to deploy lab kits to students to enable them to provide instruction that was comparable to that provided by traditional in-person education. One participant recalled an effort by biology faculty to create low-cost kits that they could then check out for free to students, allowing them to mitigate costs for their students: “They actually created lab kits by going to the Dollar Store and building them all...And then they did a drive-through check-out to the students. So creative solutions like that are...

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really cool to see.” (Devon). Devon went on to tie those efforts to attempts to encourage open educational resources to minimize the costs imposed on students to improve online course access.

Innovations in instruction occurred in other fields as well. One participant described a colleague’s adaptations to automobile repair instruction that allows students an arguably better view of demonstrations than in-class demonstrations had:

What [this instructor] does is he puts a GoPro camera on his head and he says, “Okay, guys, we’re going to try and we’re going to try and fix this engine”. And he’s not sitting in an office with a Logitech camera or whatever; he’s actually under the hood. And the students get a better view of what he’s doing there than they did with all the slides and PowerPoint stuff he had. DE actually brings them into entirely new laboratory experiences. (Terry)

DE leaders related that the pandemic forced colleges to find approaches to enable them to offer some classes online that had been considered difficult to convert previously. This suggests that one lasting instructional effect of the pandemic may be online course offerings in a broader array of subject areas.

“A Game-Changer”: New Techniques to Improve Engagement in Online Courses

In addition to pushing some courses to move online for the first time, the pandemic also forced the development of new techniques that can be applied more broadly to improve experiences in classes that had long been offered online. For instance, some participants discussed finding new ways during the crisis to communicate with students and ensure that they maintained engagement; many of these techniques could easily carry over into post-COVID online education. One participant, Avery, described using student surveys at the start of a class

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to allow students to indicate their preferred methods of communications—including texts—and using those methods to reach out to struggling students to a greater degree than pre-COVID.

While the pandemic gave instructors a clear reason to check in on students, Avery argued that the resulting improvement in communication with students suggested that instructors should use such outreach going forward even in a post-pandemic world: “It’s something that we should have been doing all along in our online classes. And [that] is more important in our online classes than in our face-to-face classes, and I didn’t realize that until I had this experience [teaching during COVID].”

An even larger innovation was the surge in the use of synchronous online instruction. Pre-COVID, very few online classes in the CCC system—fewer than 5% in Fall 2019—were offered synchronously (CCCCO Data Mart, n.d.). Asynchronous meetings were generally preferred because one major argument in favor of online education had been that it freed students from the strictures of attending a class at a set time and place. In other words, there was no expectation that students and instructors would meet in real-time to deliver or discuss material. During the pandemic, however, leaders reported a tremendous surge in the use of synchronous courses being held through platforms like Zoom.

Many leaders came to conclude that live sessions could improve engagement for some students who depended on regular contact to keep motivated. One participant noted that some students “just want to have an instructor in front of them, whether it’s in person or Zooming with them one-on-one all the time” (Ari). Ari advocated for offering more synchronous sessions of introductory classes to provide a structured way to keep those students engaged, noting “I think there’s a lot of students out there that really want to have the [assurance that] ‘Okay. On Tuesday, Thursday at noon I get to see my instructor and she’s going to tell me what to do.’ ”

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Casey agreed, touting Zoom as a “game-changer” that added a more human element to classes and explaining:

Maybe it's the perfectionist in me, but I guess I would like to—not perfect it [my online teaching]—but just get to the point where I could say “I'm really doing DE well, and I can hold my head proud and say my students are being just as well served on my online classes [as] they are face-to-face.” Because a few years ago if you went into my subconscious, I'd say, “I think I'm kind of short-changing my [online students]. I do my best. But [the online and face-to-face classes are] not really the same.” And I do all the things I'm supposed to [in asynchronous online instruction], but there's...not as much of a human element... [With Zoom], [a] lot of it was a comparable class and they were getting the material, they were getting the content, they were getting the interaction. (Casey)

Even as long-time online instructors, many leaders in our sample identified new practices, such as the use of synchronous tools, that they adopted in response to the pandemic but planned to incorporate to improve engagement going forward.

DE leaders noted that both faculty and students had given positive feedback on new synchronous forms. For instance, Logan recounted observing a student panel where students had shared “that synchronous was actually probably the best option for them.” Faculty likewise expressed appreciation for the greater engagement with their students that synchronous instruction offered, for multiple reasons. One participant noted that synchronous instruction appealed to faculty “who want to see the students. They want to make sure it is the student and ...they're concerned about cheating, and just overall participation” (Drew). These leaders pointed out that live sessions enabled instructors to monitor the learning process more closely.

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Many DE leaders mentioned the potential benefits of combining synchronous and asynchronous approaches in order to optimize the instruction. Jamie experimented with adding a non-mandatory synchronous meeting to a technically-asynchronous class to support students who preferred a consistent meeting time, and found that this approach helped students “feel like ‘Okay, this is this is [a regular] class every single week’ ...I’ve seen my students thrive in those cases.” Similarly, Casey, who had several years of experience teaching asynchronous online classes prior to COVID shared a “happy medium” approach of incorporating optional live components into technically-asynchronous courses to avoid requiring students to engage over Zoom at any particular time: “I have a weekly meeting, and I move it. It’s a floating meeting throughout the week to catch different people’s schedules.” Casey recorded the meetings and required students who did not attend live “to watch the recording, and then participate in the discussion board. And I think that’s worked really, really well. So it’s asynchronous, but it still has that human element that you would find in a synchronous course.” Such careful design approaches may enable courses to maintain the flexibility of asynchronous instruction while bringing a human element to the learning process. As we discuss further below, promoting effective practices in new course designs remains an important challenge at an institutional level.

“Thou Shalt Use Canvas”: Sustained Use of Technology in Face-to-Face Courses

While many leaders predicted changes in the delivery of online courses going forward, they also predicted that use of new techniques would alter the delivery of primarily face-to-face classes as well. Leaders noted that the crisis had prompted a massive increase in the use of Canvas. One leader described a campus requirement that was instituted for instructors to sign a memorandum of understanding codifying the use of Canvas for course delivery: “And that MOU said ‘Thou shalt use Canvas.’ Regardless of whether you use Zoom, regardless of what you’re

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doing, you still need to teach your class through Canvas” (Loren). Many other campuses similarly pressed instructors to move onto Canvas.

Leaders thought that the standardization of course presentation through Canvas was a positive move that instructors would want to preserve even if they moved back to face-to-face instruction. One leader speaks of college conversations suggesting that going forward:

...the learning management system isn't just [used] for distance education. It is a tool to utilize for student success. If all of our students know where to access their syllabus....[if we have] standard templates for [use in all] courses... we can create some systems for students so they know what to expect... If they're [instructors are] using the Canvas gradebook, we know that that directly correlates with student success, students know how they are doing in the class. If teachers are updating that regularly, students are more likely to get the help they need when they need it and they're more likely to complete the class... Whether we're teaching face-to-face, hybrid, or fully online, I think that is shifting completely how we do higher education. (Eli)

The prediction that Canvas would be more universally used, including in face-to-face classes, was a common one in our interviews. Ali estimated that “We’re still going to be supporting, I would assume, 70 to 80% of faculty [through Canvas] even once we go back in the classroom.”

Other respondents noted that new software or techniques that instructors adopted during the pandemic would likely be sustained going forward to create more tech-enhanced face-to-face courses. One participant shared that, “Our speech department now has gotten used to certain software [adopted during the pandemic], and they like it, and then it works for them. And they even said, ‘Even when we’re back on campus, we think this is a really good tool for our classes’ ” (Cary). This suggests that in addition to possibly opening up the

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movement of new subjects online, the time investments that faculty have made to innovate new techniques may also support continued use of technology-enhanced instruction even among courses that are primarily delivered face-to-face.

***“Effective and Credible Assessments”*: New Forms of Assessment in Online Classes**

Assessing students in online courses has been a long-standing issue, partly because the lack of physical presence opens up new avenues for students to potentially cheat on exams without being detected. DE leaders acknowledged the concerns of many of their colleagues that online courses may be more vulnerable to cheating, particularly with the emergence of sites like Course Hero that post instructors’ assessment materials online. One leader acknowledged, “I do think about the cheating websites where [students] possibly can be sharing their questions and, you know, I have colleagues around the world who are monitoring those cheating websites and searching for their questions on there and following up with students” (Avery). Another participant linked this point to concerns about the credibility of credentials granted by online courses. Even though some instructors may prefer not to police students’ academic integrity, Terry pointed out that community colleges “offer certification, and that certification needs to be credible, so we need to develop more effective and credible online assessments.”

Leaders in our sample articulated several different approaches to discouraging cheating in online courses. Many recounted emphasizing to students that if they cheated on exams, they were ultimately undercutting themselves. Avery proposes a different approach instead of the monitoring approach described above: “[I say to students]: ‘Hey, you don’t want to *not* know this stuff. This is helpful for your future...If you cheat, you’re cheating you; you’re not cheating me.’ ...I just put that back on them.” Another participant talked about conveying this perspective to a colleague who taught in the nursing program:

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[The nursing program does] a fair bit of multiple-choice testing. [My colleague] was concerned about cheating, but for nursing, the only thing that really matters is if they pass their boards, right? The point I made—and that was a really “a-ha” moment for the instructor—was, "Why don't you use this as an opportunity to discuss ethics?" which is a really important part of nursing as well. Rather than focusing on, "How do we get [the web-based proctoring service] Proctorio to lock down their browsers and do all of this [monitoring]?" You can tell the students, "This is multiple choice. You shouldn't look answers up, but let's also talk about what does it mean that you're at home and you can look answers up? What does that mean for you when you're taking your boards? What does that mean on an ethical perspective?" (Ashley)

In this case, the argument that students are undercutting themselves if they cheat may be especially effective since students must pass an externally-administered test to be licensed.

Other leaders noted that the pandemic had encouraged faculty to think about how they had been assessing students and to consider new techniques, some of which may help address concerns about cheating. Pre-pandemic, Terry had online students take final exams face-to-face through a proctoring network that allowed students to take exams at a proctoring site near their homes. This approach was not workable given closures during the pandemic. But Terry described a new approach that arguably improved upon the old practice:

What I started doing is developing something that I call “Bumblebee tests.”

Bumblebee—it was a character from the Transformers: “More than meets the eye.” And so the tests that I create on a weekly basis...have ten topics. And within those topics, there are three different questions that have...variable parameters to it. If you look at all

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the variations of that test, there are 58,000 variations for each one of those quizzes. That means a student can take it at 8 am and another student can take it at 9 pm on the same day, and there is no chance they're sharing information...[That] also means I can reuse those tests many times without worrying about cheating or [the website] Course Hero or something like that. So there are ways to achieve and couple that with Proctorio so I can say, yeah, Bill took my test. I saw Bill take it... (Terry)

With this approach, Terry further noted that instructors may actually have more confidence in the identity of online students than when students are in large face-to-face classes.

While software like Proctorio offered instructors confidence that their students were actually taking the exams they turned in, some leaders noted concerns on their campus around privacy and inequity. For instance, Avery noted that requiring the use of Proctorio could be “stressful” for students that “don't have a space that facilitates...not being interrupted.” Such interruptions could prompt a student being erroneously flagged for violations of academic integrity.

Some forms of alternate exams potentially skirted such concerns. For instance, Ola suggested that colleagues consider new approaches to having students demonstrate knowledge in online courses, including oral exams over Zoom, suggesting to colleagues: “What about having Zoom final exams where you ask them to walk you through the process? Wouldn't you get the same information that they know how to do the steps?” (Ola)

Ola argued that such oral, Zoom-based exams could alleviate concerns about academic integrity while allowing students to demonstrate their knowledge.

DE leaders also raised new ways that instructors could assess participation in online classes. Devon described a colleague’s approach to running discussions, which historically have

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been one of the primary ways for students to demonstrate engagement and participation in online courses. This colleague provides students with three ways to demonstrate participation via weekly metacognitive questions to students about their performance:

Each week, they have to answer [these questions], and then she gives them three ways to do it. They can either talk on a discussion asynchronously, come synchronously and speak with her and whoever joins, or they can write a journal about it. So she gives them three ways to do this check-in every week, and it's flexible, but it allows the students that want that one-on-one [engagement] live time to meet with her without excluding all the rest of the students. So I think that, to me, is the ideal approach. It takes some creative thinking. (Devon)

These flexible approaches may avoid issues with privacy that DE leaders reported emerged on campus with respect to both class participation and exam proctoring.

Attempts to develop new forms of assessment may be more challenging if paired with an influx of new faculty online, when those faculty are already on a steep learning curve of how to implement online learning. Quinn noted that any movement of more faculty online will have to contend with new ways to consider assessment in online courses:

I think there's no possible way that in this quick pivot that faculty have really reconsidered deeply their pedagogy around assessment to make sense online, and that's a huge [issue], especially in disciplines where your assessment may have been very...multiple choice-heavy... if you're going online, [you] really have to rethink that. And that's something that takes time, and even high-quality faculty that dig into the literature and dig into their training opportunities, it's something they iterate over several semesters to really get right. So I think that's a big difficult one. (Quinn)

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Though not always agreeing on the exact impact, across different domains of instruction, many DE leaders echoed an over-riding sentiment expressed by one participant that the pandemic “pushed everybody on-board to what the possibilities [in online education] were...So it's just totally opened the floodgates for us. And I don't think we'll ever be the same. I don't think the system will ever be the same, even when we go back to face-to-face teaching” (Lane).

Theme 3. “An Investment that Will Pay Back Dividends”: Institutional Steps to Promote Success

DE leaders raised several institutional measures that they believed helped promote successful online teaching; these steps related to both the COVID-19 crisis and to supporting the maintenance of wide-spread online course offerings that they expected to endure after the pandemic. In particular, they mentioned the need to train faculty in online pedagogy and develop promising practices to new instructional approaches, as well as the need to invest in infrastructure—including both staff and digital tools—to support online teaching.

Professional Development and Best Practices: Learning to Teach “On the Bottom of the Ocean”

DE leaders contended that providing high-quality professional development to ensure a well-trained cadre of new online teachers would be especially important in light of the growth in enrollments in online courses that they anticipate going forward. Terry, for instance, argues that most instructors have historically had little idea of what makes a good online course: “Teaching online, it's like teaching on the bottom of the ocean or teaching on Mars, unless you have—in addition to the content expertise...—the expertise to navigate and to operate in this alternative environment that is the online world. That's a much steeper learning curve.” In order to create

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supportive online experiences for students, leaders argued that institutions need to provide effective professional development for teachers. Particularly if students increasingly demand high-quality online courses or seek out alternatives that will provide them from other colleges, Terry maintained, “If you want your college to survive, you got to train your people.”

DE leaders also addressed new topics in professional development that would have to be considered as new instructional techniques from the pandemic become a normal part of post-pandemic online education. For instance, at the same time that many instructors appreciated the structure of synchronous courses, participants identified potential drawbacks as well. One participant recounted having initially attempted to offer a synchronous course, only to determine that since many students were parents, they could not consistently participate in real-time given their family demands. “It was causing a lot of stress for them, trying to find dedicated times that they could be on camera doing their assignments” (Glenn); this participant switched the class to a primarily asynchronous mode to accommodate these students. Others described how required on-camera time could make students uncomfortable by foregrounding their living conditions:

[Some students] don't have anywhere private to Zoom in their house. They're Zooming out of the bathroom. You see shower curtains a lot, they're in the garage...It's harder to hide your own poverty, your own issues, when you're Zooming, and suddenly your house is part of the class in a way that you never anticipated...” (Lane)

As Lane goes on to note, these concerns are unique to online classes with on-camera requirements.

Recognizing such concerns, many colleges began to develop recommendations for synchronous instruction as part of professional development trainings to help instructors better

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understand how to incorporate live sessions and cautions around using them. For instance, Reese’s college counseled instructors to not “require cameras if [students] don’t want to put them on” to avoid privacy violations, and to make attendance at live sessions optional, with recordings posted for students who could not attend. Other leaders emphasized limiting the amount of time students were expected to engage synchronously to combat Zoom fatigue. As one leader pointed out, Zoom options may be especially exhausting for participants in night classes: “Can you imagine sitting in a Zoom class from six to nine [pm]? So we’re saying, well, maybe you meet for an hour and a half, and then create some assignments, independent work to make up for the other...time” (Riley). Thoughtful inquiry to further develop and refine best practices for synchronous online education will be an important task going forward if live online sessions become a more prominent feature of online education.

As synchronous sessions become an accepted option for online education, institutions will need to consider the appropriate blend between asynchronous and synchronous instruction. DE leaders still emphasized that asynchronous instruction can be very effective and equitable depending on specific design features. For example, Devon pointed out that when carefully designed based on evidence-based practices (see Pacansky-Brock et al., 2020), even an exclusively asynchronous class could provide a humanized learning experience to students:

...a lot of people felt like [asynchronous instruction] was worse than fully synchronous because they’re not interacting...but they didn’t really know a lot about [asynchronous online] course design... so I think that that’s been helping people understand, no, you can still have a highly connected humanized class with mostly asynchronous [instruction]. And that’s actually more equitable. That was just a constant conversation. (Devon)

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Leaders particularly argued that asynchronous courses were more equitable for students with unpredictable work or family schedules, who could not guarantee that they would be available at a given time for course meetings.

These discussions suggest that moving forward, asynchronous instruction is likely to remain the primary delivery mode for online instruction at community colleges in view of the critical importance of flexibility and accessibility for a large proportion of the community population. Yet, live sessions will be increasingly integrated as a key component of online courses. More conversations will likely be needed around identifying specific instructional practices and course design features that could better address the challenges associated with online learning and improve its effectiveness.

Staffing and Software Needs Post-Pandemic: “You Have to Have These Tools”

DE leaders also emphasized the importance of staffing a team to meet future distance education needs. While many thought this was especially important in the event of crisis situations, they expressed this as a need that extended beyond a crisis management response and was essential to meeting online educational needs in normal times as well. Casey, who was not personally a DE coordinator, became convinced after a “nightmare” pre-COVID period where their college lacked a DE coordinator that every college “should have a full time DE coordinator position...[Across the system, there is] all these levels of funding for their salary...it needs to be a serious, fully-funded position...It’s an investment that will pay back in dividends.” Casey also touted the benefits of having a “[faculty DE] committee like ours...Having both of those is essential.” Casey argued for a structure that has both single points of deep experience in online education—a DE coordinator—as well as support from a broad network of personnel more

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loosely immersed in online education but widely distributed across the college—a faculty committee for distance education.

Other participants emphasized the importance of staffing permanent members of DE teams in other roles, such as instructional design or accessibility specialists. For instance, Reese notes that going forward, “I think that we need more permanent people, like...[an] instructional designer. We desperately need that that role filled. We are trying to get another associate dean position of online learning...we just need more permanent people [dedicated to DE]”. Others emphasized the need for more staff devoted to accessibility, especially as synchronous courses posed new challenges in requiring captioning of a higher volume of video-recorded lectures. One leader, Ray, related a conversation with a colleague teaching via Zoom who “has a student who’s hard of hearing...He said ‘[Ray], I have a one-hour lecture I record and it takes me four hours to clean up the captions on it.’” Ray noted that this was a “serious challenge” faced by multiple instructors.

DE leaders emphasized that in addition to new staff, improved DE going forward would benefit from investment in digital infrastructure, such as maintaining digital tools to help promote accessibility in classes, or to enable high-quality video content. One leader argued:

...there needs to be a lot more money invested into these structural pieces so that you have a really robust online platform. Because Canvas is great, but you can't just have a learning management system; you have to have these tools that go with that learning management system for accessibility, for [instructors to meet] the regular and effective contact [requirements], for producing quality videos quality content for classes. (Eli)

Many leaders specifically identified tools to improve accessibility of online courses as particularly valuable new additions to the DE toolkit. Several mentioned Blackboard Ally,

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which identifies when a particular piece of instructional material does not meet accessibility standards, and “re-formats it in various options. It will read it so you can download a MP3 file to hear the document, you can download it in another format so it can be machine read. You can download it into a format that is more accessible on your mobile device, and so that was really cool to get that [Ally] integrated.” (Hayden). Others touted the value of captioning software that helped mitigate the work load in making video lectures accessible to hearing-disabled students.

Student Supports Post-Pandemic: “One Broken Screen Away from Dropping out”

While most DE leaders in our interview sample were focused primarily on supporting faculty in online courses (rather than student services or support), our participants also highlighted a number of student supports that helped students during the crisis and could translate into future improvements for online students. Many colleges provided Chromebooks and laptops with corresponding technical support to students during the pandemic (Cooper et al., 2020; Hart et al., 2021a), which may have enabled students who felt they lacked the necessary technology and/or skills to participate online.

While these were emergency measures, some leaders noted that these efforts addressed pre-existing issues that the pandemic had simply exacerbated, and that these issues would require sustained attention in the future. In order to address persistent “equity gaps in the online environment,” Taylor argued that institutions would need to “beef up the way that we help our students with Chromebooks, with laptops, with broadband access, or else those gaps are going to be exacerbated.” Taylor argued that while having face-to-face resources on campus has historically mitigated some of these access issues, they perhaps papered over the problems of students’ tenuous access to online courses such that institutions were not fully aware of the strain on students:

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...so many students are one broken computer or one broken screen away from dropping out, and they have been for a long time. However, when you have brick and mortar resources available, when students can come to campus, that information gets hidden somewhat, right?...I think when this all is said and done, we're going to notice...who our current education system is really leaving out and why. (Taylor)

Many DE leaders hoped that the pandemic would lead to broader conversations about how to address inequity in online education across a host of issues, from gaps in technology access to racial inequities in online student success.

One innovation that leaders touted as having been helpful for students was the integration of more fully-online student services. Some leaders noted that their institutions were relatively well-positioned to serve students during COVID due to their recent adoption of online student support hubs in Canvas that had centralized online student services in one virtual location (described more thoroughly in Hart et al., 2021b). In developing the hubs, student service offices often were motivated to create processes to make more of their functions executable fully online. As Loren recounts of a pre-pandemic effort to establish a hub at one college:

We worked with about 16 departments to launch this hub, and by virtue of working on the hub, some departments chose to move their services online. So that was an unexpected positive byproduct. In sitting down and talking to financial aid and saying, “Oh, you still require people to come in and sign a paper...and submit a piece of paper through your [physical] receipt box. Can you move that online? Is there a way to do that?” (Loren)

Institutions that did have hubs in place pre-pandemic also described a rapid movement of student services online during the pandemic, opening new ways for students to meet with counselors

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virtually or use fillable .pdfs to streamline record-keeping. Continued innovations along these lines, which make it easier for students to accomplish tasks without going into the physical campus, will likely help minimize burdens on online students going forward.

Institutional Funding of Online Education Post-Pandemic: “That Has to Change”

In addition to shifts in faculty and student attitudes and beliefs related to distance education, some DE leaders indicated that the pandemic had resulted in an influx of resources to their departments. As Ali recounted:

One of the miracles, the bright side, the silver lining to all of this is that we were able to petition for and receive more funding and more support as a department. So we were able to expand. So this fall, we've been going through a hiring process and we will now come spring will have three instructional designers, will have two accessibility and media coordinators, we'll hire a second Canvas administrator and we will rehire into a coder position. (Ali)

Many other leaders similarly noted that aside from new staffing, other potential expansions of efforts in professional development for online instruction, or in provision of software would require sustained investment in online education. Terry, for instance, argued that colleges would need to invest in training if they wanted to expand high-quality online instructors: “...you need large-scale support of instructors, and it's going to cost you a chunk of change. There's no question about it.”

DE leaders hoped that the increased acceptance of distance education—and the anticipated rise in the importance of DE courses—would result in increased funding in the long term. Cary, who discussed above the new software tools that many instructors had come to depend on, reflected that funding, particularly for software, may become more readily available:

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...colleges like ours generally don't have much...of an instructional software budget and I'm hoping that will change. [I'm] pushing really hard at my college to get people to understand that instructional software is a thing [worth investing in]... you have to give them [faculty] the tools that they want and need. And right now, a lot of funding sources don't allow for funding of software...for example bonds are often written to include only hardware and not software. So you might have \$40 million to spend, but you can't spend a dime of it on software. So that has to change... (Cary)

Importantly, Cary identifies changes in the restrictions on bond funds that would provide more flexibility for colleges to provide the software infrastructure needed to support a growing slate of online courses.

While leaders were mindful that California’s budget situation would dictate the availability of resources available to invest in community colleges generally, including in online education, they agreed that a sustained effort to improve availability of online course offerings would likely demand more funding going forward. By contrast, if funding is not sustained post-pandemic, leaders were not as confident that dedication to providing online courses at the same level would be maintained either.

Discussion and Conclusion

While the swift shift to remote instruction in the wake of the COVID-19 presented many challenges to both institutions and students, it also led to new opportunities in online course offerings and instructional innovation. Drawing on interviews with college distance education (DE) leaders from the California Community Colleges system, this paper identified three key changes experts foresaw in online education in broad-access institutions going forward post-pandemic: a further *expansion* of online course offerings as a result of the online resources and

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coursework created during the pandemic; *instructional innovations* that incorporate lessons learned during the pandemic; and finally, an increasing need for *institutional supports* and resource allocation in response to the new role of online education.

These themes echoed several aspects of Roger’s (2003) diffusion of innovation theory. In particular, predictions around expanded use of online courses partly reflected notions that the pandemic effectively forced a trial of a new innovation on many instructors and students who may otherwise have been late adopters (or who may never have adopted) online instruction. While some instructors and programmatic leaders may opt to discontinue use of online modalities post-pandemic, many others found online courses more compatible with their instructional goals than originally anticipated, and identified relative advantages (such as the ability to compete for students who may increasingly demand online education) that may prompt them to maintain online offerings.

Similarly, discussions around innovations within the system highlighted areas of creative redefinition and re-invention (such as new approaches to engagement and assessment) that instructors pioneered to help online instruction become compatible with their instructional goals. As mandates to offer classes online recede and faculty members enter a confirmation stage where they decide whether to maintain or discontinue their use of online instruction, these changes may increase the likelihood that online education expands post-pandemic. However, leaders cautioned that without sustained supports, the use of online education may become less palatable to students and instructors; this suggests a need for organizational structures to adapt to the increased use of online courses (such as the implementation of new funding, faculty training or student support practices that ease the use of online courses).

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To cope with these changes, institutions will need to attend to a number of issues around online teaching and learning in the post-pandemic era, which highlights the urgent need for more research on these topics. First, an important theme that emerged from our interviews is that online courses present unique challenges to teaching and learning, such as the need for stronger self-directed learning skills, and challenges in structuring courses to promote engagement. Since students’ backgrounds may be related to their preparation for online coursework, whether an online course is designed and taught in a way that sufficiently addresses these challenges will have immediate implications for performance disparity among subgroups of students. Yet, there is neither consensus among DE leaders nor sufficient empirical evidence from the current literature on the best ways to resolve these issues.

Taking the debate around synchronous versus asynchronous instruction as an example, DE leaders have pointed out several pros and cons associated with each of the two delivery modes. Accordingly, a consensus around the most promising ways to engage in synchronous versus asynchronous instruction in online courses is unlikely to be reached until the field accumulates more empirical evidence about their impacts on student learning experiences and outcomes. All of this highlights the pressing need for institutions and researchers to collect systematic data on instructional practices in online courses to identify evidence-based practices that instructors and colleges can use to continuously improve student online learning, reduce equity gaps, and establish a benchmark system of online course quality.

In addition, considering that both the demand for online learning opportunities and the challenges associated with delivering effective online instruction vary by fields of study, colleges may wish to consider both demand and quality to plan online course and program offerings in a strategic way. These decisions will benefit from more field-specific research that delineates ways

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to design and deliver high quality online courses and programs and address student needs in a given field, as well as institutional resources necessary to support these efforts.

Lastly, our results revealed broad agreement on the critical importance of institutional resources for online teaching learning, including investment in digital infrastructure to help promote accessibility and content delivery, permanent personnel with deep experience in online education, opportunities for professional development training and ongoing support to current and future online course instructors, and comprehensive support to online learners ranging from technology access to fully-online student services. These resources and supports require sustained funding and continued institutional commitment in investment in online education, as well as strong institutional commitment to the expansion of online learning.

This study has a number of important limitations. Though early signs indicate there may be shifts in the uptake of online education as an innovation as a result of the pandemic, it is too early to know whether the changes in beliefs and perceptions of online learning will remain over the long-term. Our interviews were conducted in summer through fall 2020; enthusiasm for online learning may have either waxed or waned in the intervening months as the pandemic has worn on. Moreover, we study an important but unique population of educators who may have different views of online education compared to the general population of faculty. Other faculty may be less enthused about the prospects for expanding online education going forward. In that case, online education could revert to its pre-pandemic position on campuses rather than undergoing a major shift in its long-term importance. Future research should explore how attitudes towards and offerings of online courses continue to change going forward to determine whether the predictions made by the leaders in this study are borne out in practice.

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If the predictions of the distance education leaders in our sample are correct, the way that colleges offer online education in the future may differ markedly from the structure of past offerings. Continued innovations around online course delivery—including the use of synchronous education, increased use of techniques to increase engagement, and new approaches to assessment—will necessitate additional research to determine how these approaches are associated with student outcomes. In particular, it is possible that the relationship between online course-taking and student success may be different in classes that use these new pedagogical tools than in historical online classes. The predictions of leaders in this study provide an important guideline to topics that may require such attention going forward.

Notes

1. While the first author was most visible to participants, we also note the other authors' personal backgrounds. The second author is a White, early-career academic with experience as a CCC student and as a CCC instructor. The third author is a female, second-generation, Cuban-American former CCC student and current PhD student. The fourth author is a female, Asian, midcareer academic.

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Table 1.

Comparison of Pre-COVID Institutional Characteristics: Full CCC System vs. Institutions Represented in Interviews

	Full System (mean)	Interview Sample (mean)
<i>Pre-COVID Institutional Characteristics</i>		
% Students URM	59.24	54.78
% Pell	46.60	46.26
Instructional Expense/FTE (\$1000s)	5.78	5.93
Undup. Head Count (1000s)	19.24	18.74
Rural	0.11	0.11
Urban	0.43	0.41
OEI	0.49	0.56
<i>Pre-COVID Online Learning Resources</i>		
% Students Fully Online	14.96	13.81
% Students Partly Online	18.61	19.48
Observations	114	27

Source: Authors’ calculations from Integrated Postsecondary Data System.

Notes: Estimates are unweighted. URM=Under-represented minorities, and includes students classified as American Indian/Native Alaskan; Black/African American; Hispanic/Latino; multi-racial; or of unknown race. Pell receipt captures share of first-time undergraduates using Pell.