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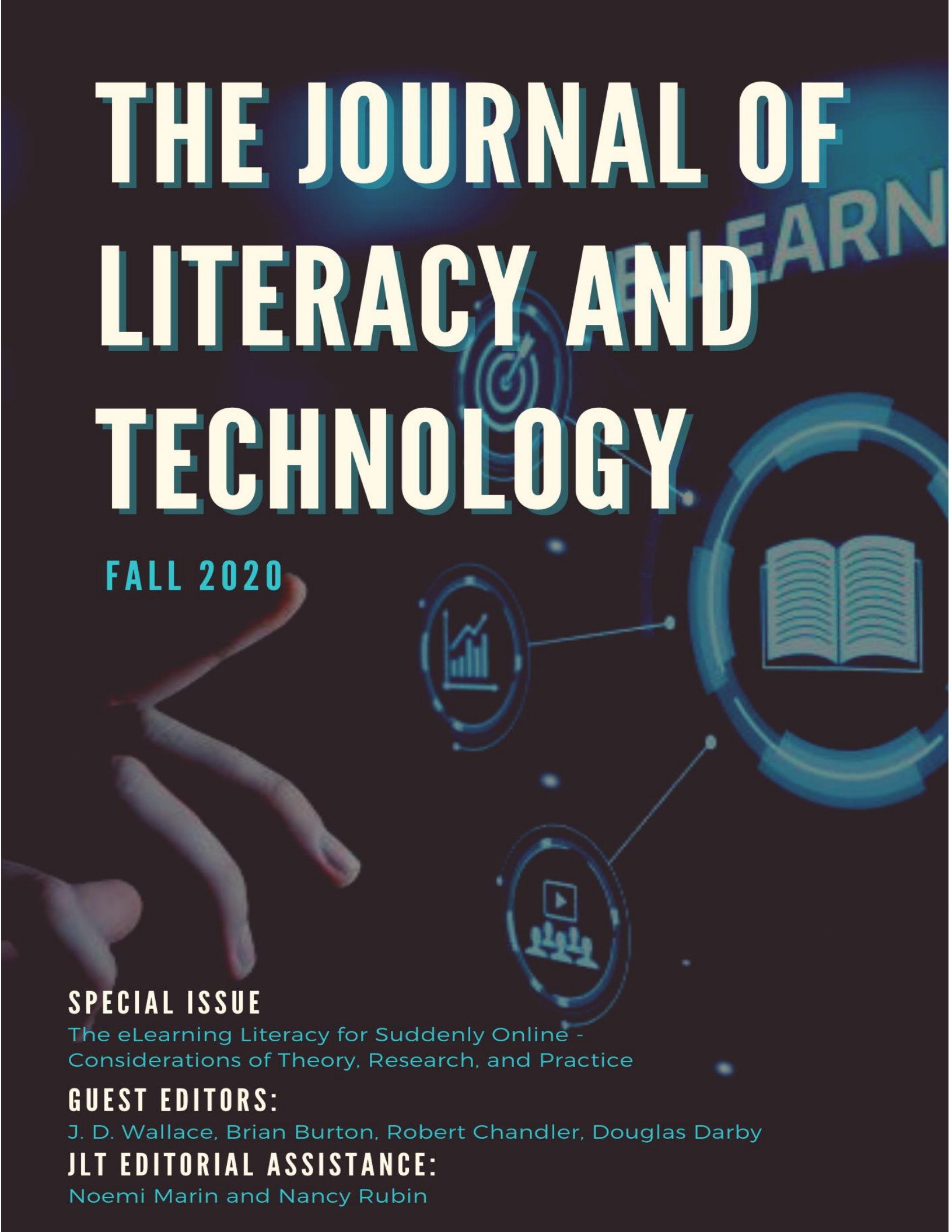

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## SPECIAL ISSUE

The eLearning Literacy for Suddenly Online - Considerations of Theory, Research, and Practice

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# Resilience in the Face of Crisis: Organizational Response to Developing Faculty eLearning Literacy in a Global Pandemic

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**Keywords:** crisis resilience, COVID-19, faculty development, online learning

**Abstract**

The COVID-19 pandemic created a crisis for university faculty. Facing position cuts, including furloughs and layoffs, and complete reorientation of normal operating procedures, faculty members also had to transition fully face-to-face classes into virtual modalities, adjust syllabi on the fly, or re-create lab spaces in a digital context. In the background, a host of faculty development, digital learning, and technological staff labored to support the sudden transition to fully online teaching. They provided training in eLearning literacy at an unprecedented rate, and for previously inconceivable numbers of instructors. Using the lens of disaster resilience, this study investigated the adjustment of such support units to the pandemic crisis in the first round of instructional transition at a large southeastern university.

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The slow and steady growth of distance learning took an exponential leap in the spring of 2020 as a result of the global COVID-19 pandemic. Thousands of faculty in universities across the United States had to transform face-to-face courses into fully online experiences within the space of a few days. They adjusted syllabi on the fly, salvaging what they could of face-to-face learning experiences and assignments, and struggled to recreate lab environments in the digital context. In the background, a host of faculty development, digital learning, and technological staff labored to support faculty members in the sudden transition to fully online classes.

Under normal circumstances, the development of technology or eLearning literacy in faculty is accomplished through a mix of technological and pedagogical training (Ertmer & Ottenbreit-Leftwich, 2010), often via a blended learning approach that combines online and face-to-face elements (Lackey, 2011), and with varying training modes (i.e. workshop, one-on-one consultation, hands-on training; Meyer & Murrell, 2014). The reality, though, is that the most appropriately designed professional development initiatives for online instruction have the benefit of time, experience, and purposeful instruction for the faculty members. The sudden move to online teaching as a result of COVID-19 forced institutions to promote eLearning literacy in faculty members at an unprecedented rate, and in previously inconceivable numbers. Training was invariably drastically different from the well-planned ideal (Hodges, Moore, Lockee, Trust, & Bond, 2020). The purpose of this study was to examine the experiences of these support units at a large southeastern university as they facilitated the movement of faculty "suddenly online" in spring 2020. We used the lens of disaster resilience to identify key practices and characteristics that enabled a relatively smooth transition.

## Crisis Pedagogy and Disaster Resilience

By their nature, crises are non-routine events that create high levels of uncertainty and significant threats to high priorities of goals (Seeger, Sellnow, & Ulmer, 2003). As Weick (1993) observed, "What makes such an episode so shattering is that both the sense of what is occurring and the means to rebuild that sense collapse together" (p. 633). In the case of moving suddenly online due to the COVID-19 pandemic, colleges and universities found themselves rapidly shifting course modalities, thus requiring faculty to use tools with which many were unfamiliar and the effectiveness of which was often unknown. Although universities design crisis management systems for events like terrorist and mass shooter incidents, damage to institutional reputation, major lawsuits, declining enrollment, and natural disasters (Mitroff, Diamond, & Alpaslan, 2006), a global pandemic that completely shut down campuses for months was beyond what most institutions anticipated. All of this took place for faculty and support staff in the context of personal anxiety about their own health and the health of their loved ones in addition to economic concerns, and extended for months without a clear path to resolution.

Literature from a range of fields shows that crises like the sudden emergence of a novel and highly infectious virus can push the cognitive ability of people to the limit, and they may respond with fear, rigidity, and anxiety because sensemaking mechanisms have collapsed (Roux-Dufort & Vidaillet, 2003). In contrast, what is needed

during a crisis is innovation and creative problem solving (Freimuth et al., 2006; Weick, 1993). A substantial literature has, therefore, been devoted to determining what characteristics of communities and organizations are necessary for effective navigation of disaster events.

Our specific interest here is in disaster resilience. The concept of resilience is regularly used in a range of disciplines, from materials sciences and engineering to psychology and sociology. Resilience is associated with both strength and flexibility. In the context of disasters, it can be defined as "coping ability, the ability to bounce back, pull through or adapt to the disruption of a crisis" (Sellnow & Seeger, 2013, p. 123). The focus of organizational resilience is on organizations recovering from crises by dint of their own resources, although those resources can be encouraged via pre-crisis interventions and policies (Cutter, Burton, & Emrich, 2010).

The 4R theory, designed by Bruneau and colleagues (2003) to quantify community resilience following earthquakes, identifies four properties of physical and social resilience: 1) robustness, or the strength of a system to withstand stress; 2) redundancy, that is, the extent to which the system contains backups and substitutes that can be engaged in the event of a disruption; 3) resourcefulness, which is the capability of moving beyond the previous status quo to recognize new problems, set priorities, and marshal resources (material, financial, informational, human); and 4) rapidity, or the means to respond quickly so as to contain losses. They further conceptualize resilience as having technical, organizational, social, and economic dimensions, where the technical dimension refers to the ability of physical systems (e.g. IT systems, phone service) to perform to effectively in the face of threat; the organizational dimension is the capacity of the institution to make decisions and take actions toward mitigating negative outcomes of crisis; the social dimension consists of actions organizations take to alleviate or diminish negative consequences to its members and the community; and the economic dimension is the ability to reduce economic losses resulting from the crisis (p. 738).

Bruneau et al.'s (2003) model was designed to provide a heuristic for developing instruments to measure community earthquake resilience in each of 16 categories. Categories were obtained by crossing the 4Rs with the 4 dimensions identified. We follow Sellnow and Seeger's (2013) use of the model as a framework for analyzing data, in this case about the apparently effective response of the University of Central Florida in supporting its faculty in the sudden transition to remote learning in spring 2020. We sought to answer the question of how robustness, redundancy, resourcefulness, and rapidity were leveraged at the university in the early weeks of the pandemic to bring hundreds of classes online. We adapted Bruneau et al's 16 categories to address organizational support for faculty eLearning literacy early in the pandemic. Our adaptation of the categories is presented in Table 1 below.

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**Table 1**
*Faculty Development Performance Measures*

| | PERFORMANCE CRITERIA | | | |
|---|---|---|---|---|
| | *Means by which Resilience is Improved* | | *Resilience Desired Ends* | |
| PERFORMANCE MEASURES | Resourcefulness | Redundancy | Robustness | Rapidity |
| Technical | Diagnosis of technology needs for remote teaching and support | Backup, duplicate systems, equipment, and supplies | Damage avoidance and continued service provision | Optimizing time to return to pre-event functional levels |
| Organizational | Plans and resources to cope in service units | Backup human resources to sustain operations in service units | Continued ability of service units to carry out designated functions | Minimize time needed to perform key response tasks |
| Social | Plans and resources to meet faculty remote teaching needs | Alternative means of providing for faculty remote teaching needs | Avoidance of disruption to faculty teaching and student learning | Optimizing time to develop faculty eLearning literacy |
| Economic | Stabilizing measures in hiring freeze | Untapped or excess economic capacity | Avoidance of direct and indirect economic losses | Optimizing time to return to pre-event functional levels |

## UCF and the COVID-19 Timeline

To lay the groundwork for our analysis, some information about the context in which these events occurred is important. The University of Central Florida is a public research university located in metropolitan Orlando. With over 68,000 students and 4,000 staff, UCF is the second largest university in the country in terms of student population, and the transition to remote teaching was a massive undertaking. In one week, the university's support teams helped transition nearly 5,000 face-to-face courses and 700 mixed mode sections to be fully online.

Training continued for several weeks afterward, leading to the necessity for a complete reconceptualization of online teaching certification in order to process the number of faculty who needed to be prepared for online teaching in the fall semester. Although evaluation of the process is ongoing, average student evaluation of teaching at the end of the semester was actually higher than the previous year by .2 to 5.8% in face-to-face, mixed mode, fully

online courses. Only in one modality, a specific type of video streaming already being used by the College of Business, did evaluations fall by 5.0% (Provost Update, 2020). Controversy surrounds the value of student evaluations as a measure of student learning (Carpenter et al., 2020; Uttl, White, & Gonzalez, 2017), of course, but this does suggest that students in the aggregate were satisfied with the way the transition went. Additionally, in a university-wide survey of student experience 67% of students reported that faculty had adjusted moderately to extremely well to the situation (Provost Update, 2020).

The principal player in the transition was the Division of Digital Learning, which houses the Center for Digital Learning (CDL), the center of training and certification in online teaching, Information Technology (IT), and the Office of Instructional Resources which includes a Faculty Multimedia Center. The other unit on which this article will focus is the Faculty Center for Teaching and Learning (FCTL), which is housed under the Office of the Provost. Although there is some overlap between CDL's instructional designers and FCTL staff roles, FCTL has a more strictly pedagogical focus and also provides faculty development for teaching in the face-to-face modality.

As in other institutions, information at UCF about COVID-19 response developed rapidly. Figure 1 shows a summarized timeline of COVID-related events at the state/local/university level (light grey bars), UCF teaching-related events and communications (dark grey bars), and the professional development workshops (black bars) offered by CDL in collaboration with OIR and FCTL as a significant part of the university response.

Thus, although at the time we are writing this manuscript the crisis is ongoing, and a second phase of intensive training has been completed for the Fall 2020 semester, the initial adaptation was most intense and key pivotal decisions were made mostly in the first half of the month of March. This is what the crisis and emergency risk communication model (Reynolds & Seeger, 2005) terms the "initial event" phase. It is the onset of a crisis, which requires the dissemination of messages to reduce uncertainty, promote reassurance, and foster self-efficacy among the individuals affected by the crisis. Decisions made in this stage are critical, as they can have long term impact on crisis management in either positive or negative directions (Freimuth, 2006; Murphy, 1996). It is that initial crisis phase that is the focus of our analysis.

## Method

For this case study, we analyzed data from data analytics of initial training in remote teaching conducted by CDL staff, and interviews of key informants in the Division of Digital Learning. Additionally, two of the authors were on staff at the Faculty Center for Teaching and Learning at the time, and were intimately involved in preparing faculty for the mid-semester transition in modalities. Therefore, their personal experiences were also tapped. Approval for human subjects research was obtained from the university institutional review board.

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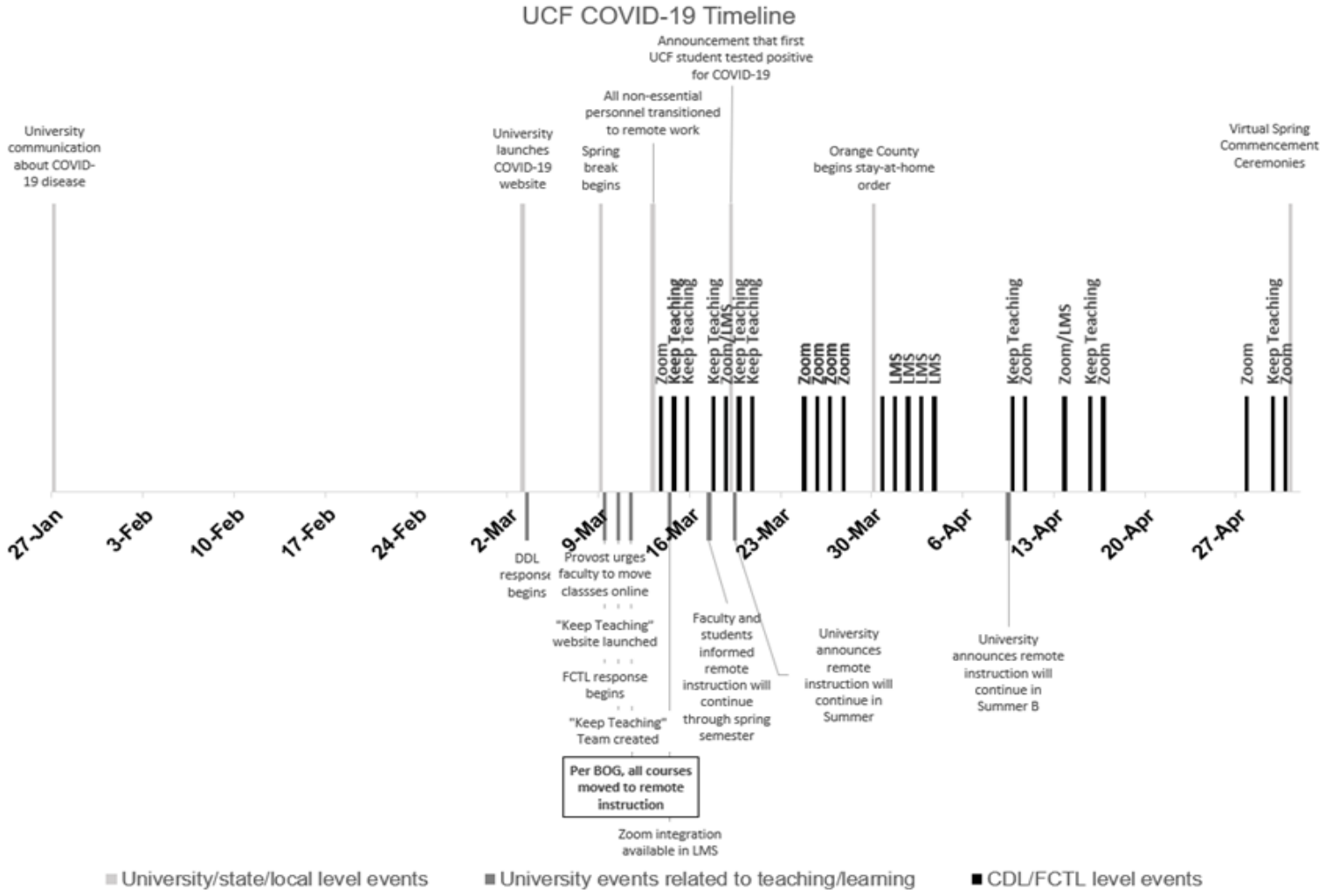


Figure 1. Timeline of UCF response with emphasis on teaching and learning events. Light grey bars - relevant university or local events. Dark grey bars: events that directly impacted teaching and learning. Black bars: workshops developed and facilitated in direct response to the transition, labeled with general topics. "Zoom" workshops included specific themes (e.g. Breakout Rooms, using the whiteboard, recording/publishing recordings, and integrating Zoom with Canvas). LMS workshops mostly covered creating assessments in Canvas. Keep Teaching workshops covered overviews of this information or tutorials on creating, captioning, and publishing recording video lectures. BOG – Board of Governors, which oversees the management and operations of Florida public universities

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### Key Informant Interviews

Interviews were conducted via video conferencing software with two instructional designers, the director of the Faculty Multimedia Center (FMC), the learning content development lead, the interim director of the instructional design team, and the program director of iLab, a program management team in the Center for Distributed learning. The explanation of exempt research and interview guide were sent to interviewees in advance. At the time of the interviews and focus groups, researchers first reminded participants of the purpose of the project, and asked permission to record the interview. Participants were asked what they saw as the biggest challenges in the move to remote teaching, what resources they had for taking up the challenges, what types of assistance requests they received from faculty/type of assistance they requested from whom, and what their concerns were going forward. Interviews lasted about 45 minutes.

Interviews were recorded and transcribed using various transcription software including Zoom transcriptions and Otter. All transcripts were checked against the full recordings for accuracy.

## Data Analytics

Data analytics were obtained from the Division of Digital learning's learning content development team and Faculty Multimedia Center.

### *Analysis*

Transcripts were analyzed in line with categories provided by the 4R theory by one of the researchers. In the first stage, the first author gained familiarity with the data by reading line-by-line transcripts repeatedly. In the second stage, the same author employed the constant comparison method (Glaser & Strauss, 2009) to identify themes, or clusters of words that, when taken together, refer to an underlying, unified idea (Weber, 1990). This was a repetitive process, with the first author going through the transcripts multiple times refining categories, checking for fit, and looking for exceptions (LeCompte & Schensul, 1999). In the third stage, the second author reviewed the analysis in light of the levels specified by the 4R theory.

## Results

The resilience of the organization from a faculty support perspective is evidenced mostly by performance measures in the technical, organizational, and social dimensions of the 4R framework. Here we discuss measures of each of the 4Rs within these dimensions. We begin by presenting evidence of the means by which resilience was improved (resourcefulness and redundancy) and the describe how the organization in this case met the desired ends of resilience (robustness and rapidity).

### Resourcefulness

#### *Technical*

In the technical dimension of Resourcefulness, a resilient organization shows evidence of the capacity to identify problems with some kind of diagnostic technology or methodology. For the Keep Teaching team, the diagnostic methodology that was the most valuable was the constant assessment of types of requests to the various departments that made up the team.

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The communication between teams and team members on this topic led to the development of several "channels" within the Keep Teaching Support Team. One of the first specific channels was used for development and facilitation of the Keep Teaching workshops. Since then, channels have been created that are specifically for Zoom, Remote Proctoring, and Online Assessment questions.

***Organizational***

A major resource that lead to the resilience of the organization during this crisis was the number of faculty already credentialed to teach online at UCF. Of the approximately 1600 instructors of record during Spring 2020, 78% had completed minimal to rigorous training by CDL. The rigorous programs offered by CDL are used to credential UCF faculty to teach online and approximately one third of instructors of record had been through one of these programs.The director of the iLab commented on the significance of this resource to the resilience of the organization:

> *A lot of faculty will go through IDL 6543 [UCF's online certification training course] and they are prepared for how to design an online course. In reality, they may get the credential and only teach one or two online courses a semester and the rest are mixed mode or face-to-face. But they have that core credential and that core training to where they could very quickly scale up and make more of their courses fully online, which is a far more robust experience than quickly moving to remote instruction.*

For faculty without training, or with little experience teaching online, resourcefulness was a product of task forces. The iLab was part of task forces in three colleges and one at the state level that were responsible for creating comprehensive lists of resources that faculty could reference when thinking about how to translate their courses to a remote delivery. These task forces were focused on STEM fields and finding resources for faculty in these disciplines to deliver laboratory and senior design courses remotely.

A task force at the university level was created to develop plans for returning to on-campus instruction. This task force included faculty and representatives of a range of faculty support units across campus and continues now to present possible scenarios for on-campus instruction in the fall.

The support of administration for faculty-facing teams was a significant source of strength for the technical measure of the resourcefulness dimension during the transition. Leaders of the faculty support teams felt that even while administrators were asking them to take on momentous tasks in a short time, they also provided the teams with resources to be successful. The leader of the Instructional Development team said, in response to an inquiry about what made them successful, *"the support of the executive team. It was critical and they asked a lot of us. In return they made sure that we had what we needed to get it done. They kept us informed."*

***Social***

The outcomes of the previously mentioned task forces were, most significantly, virtual repositories of resources for remote instruction. For example, the College of Engineering and Computer Sciences published a report from their task force that included evaluations of virtual lab resources and recommendations

to both the instructors and college leadership for rapidly developing quality online lab courses.

More broadly, the Keep Teaching webpage was launched on March 9 and within about one week there were 1500-page views. This page served as a living repository for resources related to the transition to remote instruction. Main sections on the Keep Teaching page included announcements about upcoming workshops, resources for using the LMS, tutorials and resources for creating videos, and contact information for faculty support.

Another contribution to the strength of this measure was faculty themselves. CDL and FCTL had existing and extensive networks of faculty who were frequent participants of programming and, thus, considered to be resources by both the faculty support team members and faculty themselves. CDL calls such faculty "webvets". These faculty volunteered or were asked to help their peers who had less experience teaching online, using Canvas, or navigating the technology that was now a necessity. In fact, one faculty member took it upon herself to create short video tutorials about specific features in Zoom. Although this study did not gather data about the proportion of faculty who were assisted by their peers, an internal survey of faculty at the institution indicated it was substantial.

### *Economic*

The initial response by the organization to stabilize itself economically were hiring, travel, and large purchase freezes. Of the two, the hiring freeze had a more significant impact on the faculty support team. The hiring freeze left the Faculty Center down by 25% of their program staff. The leader of the Instructional Development team said, "*What do my teams need now? Some more people that provide support. With a hiring freeze. That's really hard.*" However, she noted that exceptions to the hiring freeze had been made for the hiring of instructional designers, and she had hopes that requests for additional personnel in her own unit would eventually be honored. Under the equipment freeze, requests under $10,000 were still permissible. At least for our interviewees, requests for extra equipment to enable staff to work remotely had been filled.

## Redundancy

### *Technical*

The technical dimension considered, for one, the simple fact that staff had equipment they needed to work from home allowed them to continue to carry out their functions. In some cases, when equipment was not already available, it was easily and quickly obtained.

A second measure of Redundancy in the technical dimension was the duplicate and alternative systems made available to faculty who were in a rush to create content before campus closed, and in a panic to create content after campus closed. Typically, the FMC is a space that houses equipment for creating online content. FMC staff work alongside faculty to tutor them in use of technology. A popular tool in the FMC is the Lightboard - a pane of glass on which the instructor can write out notes and record "lectures" that can be used in the learning management system (LMS). The announcement that UCF would transition to remote instruction came seven days before campus closed. Several faculty members made recurring appointments to use tools like the Lightboard to record lectures for their newly remote courses. The increased demand for this tool led to the acquisition of

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a backup Lightboard during the frantic week before campus closure. These backup Lightboards existed because UCF recently opened a new Downtown Campus and additional Lightboards were purchased for that location. This excess capacity for content development in the FMC proved to be useful as faculty prepared for the transition.

After campus closed, some faculty members contacted the FMC wondering how they were to create content without these tools. FMC staff were able to help by having Wacom tablets from the library checked-out to faculty to take home and recommending tools and software that might already be available to faculty remotely (e.g. iPads). The husband of one staff member, an engineer, realized how critical the Lightboard was to STEM faculty in particular:

> *So he built four of them and then they delivered them to the faculty and they're using them, like in their garages or in their house and spare bedrooms to actually work at home, but with the light board.*

Like almost every other industry during this time, software tools made it possible for communication and instruction to continue, although redundancy in that area became a problem. Microsoft Teams, Skype, Slack, and Basecamp were all tools used by members of the faculty support team prior to the transition. Zoom was also introduced in days prior to the transition. In fact, the number of available tools became a problem to be solved. A team lead described the process:

> *We struggled with finding a way. We ended up going with Teams because we needed to have one place that we could, we could work with instead of six different places. Which is kind of where we were before. We were using Skype. We were using Zoom. We were on Teams. We were using Slack. We had all these places to communicate and it was, it got really tough trying to keep up with. We had to as a unit say, "Okay let's focus our efforts on one place. Let's start just working on Teams." Everything we needed to do, we could do on Teams. And once we started funneling information in one place really helped. It was really in the beginning because of the volume of information that was coming at us. Trying to make it more manageable for people.*

Finally, in order to support faculty in delivering their courses, students needed support. For example, for faculty wishing to continue to conduct synchronous exams, proctoring of exams was the subject of many inquiries. Many tools used to proctor online exams require webcams, to which not all students had access. Instructional design teams had to find alternatives for students so they could continue taking their courses.

> *Equipment started disappearing. Kind of like toilet paper. Everything started just disappearing and you could get it, but it wouldn't come for, you know, another month or something. They were looking for innovative ways to do that. And they found a couple of solutions that students could use that wouldn't require a webcam. And we put a page up for what alternative students could use instead of a webcam.*

Because the transition to remote learning was announced over Spring Break, many students did not have their textbooks

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at home with them. UCF very quickly made digital textbooks available to faculty and students via an online resource so that they could access the texts without the physical books.

***Organizational***

The units involved in supporting the Keep Teaching effort had a great deal of built-in overlap. A number of employees had been drawn from the ranks of student workers in other units and were therefore effectively already cross-trained in a range of tasks. This overlap allowed alternative means for providing support. Some teams were experiencing higher than normal volumes of requests while others were experiencing fewer requests. The webcourses support team lead explained:

> *The [webcourses] support team supports everybody in Canvas [the LMS], but obviously not everyone has been using [the webcourses support team]. They've been avoiding using it and now they're suddenly forced to use it. We and the [webcourses] support team handled some of that, but because we were concerned about the volume they were getting hit with, the IT team volunteered to help. Staff on these teams were also willing to work outside of their normal roles.*

Administrative and office staff who weren't as busy as usual volunteered to take on projects to support the Keep Teaching Team.

> *One admin [was] not as busy as she was when we were on campus. And so she volunteered to manage our records processing or at least do them for a period of time. That was really nice. We can reach out to other members on the team who aren't quite as busy and get their help. That's been awesome.*

Outside of the official faculty support offices, some colleges and departments constituted committees and task forces who also provided some of the support faculty needed.

The existing and developing relationships between the units in the Keep Teaching team were critical to the strength of the organizational strength in the redundancy dimension. These units, especially within CDL, had a long history of collaboration. However, the geographic proximity of FCTL to the FMC had promoted collegial visits and hallway conversations. CDL, FCTL, and the FMC also already regularly collaborated on programming, workshops, and open office hours during conferences and new faculty orientations. Reciprocal participation on search committees was a norm between units. One instructional designer explained:

> *We just kind of formed these really tight-knit relationships where we were working like 16 hours together to make sure we were collecting all those questions from you know the [Microsoft Teams] feed. You know, "Hey, I have this problem. Hey, I'm seeing this problem. I saw that too!" And making sure that we were developing those workshops. But none of this would have been successful if we didn't have those elements of support along the way. And those relationships, it would have been impossible. If it was just the Instructional Design team, we would have failed. If it was just Support, they would have failed. And the same thing across the board. It*

> *was that connection piece between the entire division that really kind of made a cohesive response team."*

Another instructional designer confirmed the value of relationships developed during the crisis:

> *So, maintaining those relationships with the faculty that I was already working with and then jumping into action with identifying the immediate needs and training for the use of Zoom. Which kind of led to building on to those existing relationships with folks within the division of digital learning over at the FMC. That kind of grew into a workshop series that we started focusing on.*

### *Social*

Redundancy was also evident within departments and teams as they worked together to meet faculty needs. Much of this happened within the Teams feed. An instructional designer recalled:

> *It became a collective effort honestly. We started using Teams. The moment that we went remote Teams came into a daily part of our lives. And there was a news feed that I'm sure you [the researcher] could see and we would basically reach out to one another in this news feed and say, "Hey, I have a faculty member really concerned with, and she wants. For example, she wants to host a Zoom session. But while she is hosting a Zoom session. She wants to also do this or do that; how do we make this work?"* Or, *"Have a faculty member that's really concerned with how they're going to do an assessment of their presentations. Does anybody have any tips or tricks to do that?"*

### *Economic*

Other than the aforementioned backup Lightboards and tablets, economic redundancy was not mentioned by interviewees.

## Robustness

### *Technical*

UCF Faculty support offices were seemingly able to continue offering services in large part due to the large number of people on the "Keep Teaching" team. CDL has an extensive staff, with over 20 instructional designers, 12 staff working in LMS support, 16 members of the learning content development team, and 20 web app developers, tech rangers, and data science engineers on the learning systems and technology team. Other offices that provided significant support in the Keep Teaching workshops--the Faculty Multimedia Center and the Faculty Center for Teaching and Learning--are much smaller, but were able to contribute expertise in technologies and pedagogies and extensive faculty volunteer networks that helped support the transition. The total team, including leadership, consisted of more than 100 staff members.

Nevertheless, members of the leadership for this team recognized that, in anticipation of remote instruction continuing into the fall semester, as large as the number of personnel was, it would not be enough to sustain the support. Typically, instructional designers and the instructional development team provide support to 40 to 50 of faculty each, but as we continue to experience the repercussions of COVID-19, it appears that the increase in demand for support will continue in the long-term. For example, the learning content development team lead responded, *"What do my teams need now? Some more people that provide support."*

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The director of the instructional design team lamented, *"There's no way the instructional design team can take on 400 new people here. They just, theres's not enough manpower. And I don't see any money in the budget to hire enough people to do that."*

***Organizational***

This strength of the organization measure of the robustness dimension was directly impacted by the strength of the technical measure of the resourcefulness dimension. Faculty support teams were able to continue to carry out their functions for two main reasons. First, most staff already had laptops and other necessary equipment that could be easily moved out of the office into their home or remote working environment. One team lead explained:

> *One of the things that helped us is that everybody. And this is going to sound silly, but the fact that everyone on my team had a laptop. And so, going remote was a fairly painless process. So, we packed up our things; we made arrangements. Everybody had the resources they needed to work from home. Those of us who had dual monitors took our dual monitors home so we could pretty much replicate our work environment at home. That that I think was that was key to being productive.*

Second, the administration was hugely supportive of these teams and their need for duplicate or back up equipment. Teams that typically make graphics and videos in conjunction with faculty for online courses had equipment that was not easily moved to a different location. However, when they requested equipment they needed in order to carry out their functions, they were able to get it quickly.

> *If we've needed some software to make something happen, we've gotten it. . . . [For example,] their biggest struggle was their drives. They were having a real problem with that because what they work with is huge. Their videos are huge. And we requested five portable drives to the tune of about 1500 dollars. Which was approved and purchased because they just couldn't be productive without it. They just didn't have the connectivity. They didn't have the equipment that they were working with. They didn't do what they needed to do and so we got that for them quickly so they could be productive. Things like that. Whenever we've asked for something that keeps us productive, we've gotten it.*

***Social***

Contributing to the robustness of the organization was the flexibility and commitment of the staff members. Many staff members devoted more than the typical 40-hour week in the days leading up to and immediately following the announcement that a transition to remote instruction was mandatory. Some teams worked into the middle of the night and on weekends to provide support, develop workshops, and finish projects. In this way, the "Keep Teaching" team facilitated workshops registered 1100 attendees over the three weeks following the announcement that courses would transition to remote instruction.

While this characteristic of staff is a huge support for resilience in the short-term, this particular crisis is expected to last at least through the end of the calendar year. The leadership quickly recognized that this

was not a sustainable approach to faculty support. Staff felt "burned out" after the first few weeks of working this way. For most of the team, this was remedied with more flexibility in the following weeks. One team lead explained:

> *When they put in all this time when everybody works all these hours. Then, when we get a break, they may not put in 40 hours, right? They may goof off a little bit. And that's encouraged of them, at least from my direct supervisor. He acknowledges that, you know, there are times when I need a little downtime. And I passed it on to my folks.*

However, the combined stress of the increased workload, transition to remote work and classes, and changes in personal lives due to the pandemic was too much stress for some. One staff member disappeared from their supervisor's radar and never returned to work. After weeks of trying to get in touch with the student worker, the supervisor found out that they had fallen into a depression and begun using drugs to cope with the stress of the pandemic and classes and work transitioning to remote modes.

### *Economic*

Given that our interviews took place just past the peak of the crisis, interviewees were unable to conjecture what the economic implications of the crisis for robustness would be.

## Rapidity

### *Technical*

The strength in the rapidity of the response to the effect on instruction due to COVID-19 at UCF was the preventative measures taken by the faculty support offices. For example, the Keep Teaching Support team was created *before* the announcement that UCF would be moving to remote instruction, or even before the option to move to remote instruction was made available to faculty. Keep Teaching workshops were also in development and announced *before* this announcement. Because of preventative measures like these, the faculty support staff never lost functionality. While functions may have changed, functional levels arguably never dropped below what they were pre-crisis.

This may be a result of the familiarity with response to natural disasters in Florida. Fall semesters begin during the height of hurricane season, and 3 of the past 4 years UCF and other universities in the state have closed campus for various periods of time while students, staff, and faculty reorganize their lives after the events. The response to COVID-19 was different, in that faculty and students could, for the most part, be assumed to have electricity and thus be able to work from home. Nevertheless, faculty have become accustomed to changing syllabi to accommodate new schedules on short notice. Thus, the audience for the training efforts was, in some measure, already adept at rapid adaptation.

### *Organizational*

UCF faculty support staff continued to offer services and minimized the time needed to provide services directly related to the transition to remote instructions. Events planned in response to the transition were developed before tools were even available for staff to familiarize themselves with.

> *He kept saying we need training on Zoom but we didn't have a license yet, so we didn't know how it works. Writing training for something that*

> *we didn't have yet was a challenge. Time was of the essence. And we appreciate and understood that need. But it was a real challenge.*

Initial "Keep Teaching" workshops consisted of content that would help faculty understand, at a very basic level, both the Learning Management System (Canvas) and Zoom and would be facilitated over the next seven days. The first Zoom workshop was offered on March 13, but the integration with Canvas wasn't available until the following day. After these general workshops, facilitators were able to identify, based on questions raised by participants, specific topics that could be covered in additional workshops. Since using Zoom seemed to be the most pressing question, between March 24 and 27, 13 workshops were offered that covered specific of using Zoom (i.e. Getting Started with Zoom, Accessing Zoom with a Mobile Device, Accessing Zoom with SSO). Between March 30 and April 4, 6 workshops were held focusing on conducting assessments in the LMS. During the remainder of April, 8 more workshops focused on Zoom were offered including: How to use the Zoom Whiteboard, Zoom breakout rooms, and Auto-transcribing recordings in Zoom.

### *Social*

The rapidity of the response to the sudden transition to remote teaching was a result of the existing and rapid development of faculty eLearning literacy. A significant number of faculty were already credentialed to teach online and, as is shown in Figure 1, numerous training opportunities were offered in the days leading up to and weeks immediately following the transition. Additionally, in order to prepare faculty to continue teaching either remotely or online, a "bootcamp" version of the established credentialing program was offered over the summer semester. The only "lapse" in services (i.e. instruction) was the cancellation of classes the first two days following Spring Break. UCF cancelled classes during these two days to give faculty time to prepare for the transition to remote instruction. The announcement that classes would be conducted remotely for at least two weeks was made on March 11 and nearly 5000 mixed mode and face-to-face courses were transitioned by March 18.

### *Economic*

Although there were undoubtedly economic implications of the rapid scale up to provide faculty training, at the time of our interviews it was too soon for interviewees to determine what those would be.

## Discussion

Our focus in this case study was on the properties that enabled these latter units to prepare hundreds of faculty for a drastic shift in pedagogy with about one week's notice.

Broadly speaking, our findings echo a well-known fact in crisis management, that individuals affected by crises are often more resilient than they are given credit for, and are usually the true first responders (Drabek & McIntire, 2003). By the descriptions of our interviewees, the bulk of staff and faculty alike threw themselves into making the transition to remote learning as smooth as possible for students.

We found evidence of all four Rs from the 4R theory (Bruneau et al., 2003) operating in the Keep Teaching team. The University of Central Florida may not have been typical in its Resources, with an existing institutional focus on online

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teaching. Clearly, the number of faculty already credentialed to teach online through a range of faculty development programming opportunities was a valuable resource. Connections between Keep Teaching team members and academic colleges also contributed the Resourcefulness of the organization, resulting in resources that could be used by faculty to continue instruction. Furthermore, extensive experience with disaster management experience because of nearly annual adjustments to hurricanes and tropical storms on the Florida peninsula enabled the university to move quickly to address the new challenge of COVID-19. Timely communication from administration to team leads strengthened the Rapidity of the response. Dedicated staff and prioritization by university administration of faculty support resulted in Robustness across a range of issues.

The R that clearly came out most strongly among our interviewees, however, as well as in the experience of the authors was Redundancy. Much of this redundancy was already in existence at the time the crisis hit, including existing software tools, overlapping roles and experiences of different support offices and staff. Existing personal relationships between offices strengthened Redundancy, making it possible for faculty to get information from multiple outlets. Some of the redundancy, however, was purposefully created in response to the pandemic, such as multiple resources for students and faculty. The role flexibility of staff, an element that is often pinpointed as critical in crisis response literature (Freimuth, 2006; Weick & Sutcliffe, 2011), was key during this time, to the point that even staff pitched in across departments and units to assist with training.

With respect to lessons learned for crisis preparedness in faculty development, then, we suggest that support teams purposefully develop redundancy in functions by regularly collaborating within and across unit and departmental boundaries toward common goals. This has the added benefit of establishing strong relationships which then contributing to a more robust response. Furthermore, redundancy needs to be built into crisis response at the initial event. This requires a willingness to shed previously defined roles and deference in the university setting of higher level administrators to expertise on the ground (Weick & Sutcliffe, 2011).

We used Bruneau et al.'s (2003) model atypically, as a guideline for qualitative data collection and analysis, not as inspiration for development of instrumentation for measure of characteristics of crisis. Furthermore, we applied all categories to faculty support systems within a single organization, rather than using it as a framework for evaluating the effectiveness of multiple agencies on community earthquake resilience. Overall, the matrix provided by the model was a useful tool. However, aspects of our project focus meant the fit was not exact. For example, given the short time frame of our focus—the one month immediately following a massive crisis event—the economic dimension was of only limited applicability.

More importantly, the intra-organizational nature of our analysis meant that the *organizational* category ended out being something of a catch-all. It encompassed policies, procedures, and relationships. We categorized data about communication channels and practices there, but in retrospect we suspect that including questions about communication patterns in

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the interviews would have elicited richer data regarding not only supporting team communication among each other and with faculty, but communication with upper administration. Communication becomes the means by which the resourcefulness, redundancy, robustness, and rapidity are enabled.

Complex systems such as large universities, by their very nature, are systematically vulnerable to disorganization during crises (Sellnow & Seeger, 2013). When these breakdowns happen, there is natural self-organization in which patterns re-emerge out of the chaos, often from the ground up. The grassroots handling of the COVID-19 teaching crisis at UCF involved individuals who took it upon themselves to develop or locate resources for departmental colleagues, departments who identified liaisons to link to broader resources, and especially dozens of staff in the Division of Digital Learning and the Faculty Center for Teaching and Learning who developed university-wide training and resources. The transition for faculty in spring 2020 to teaching suddenly and exclusively online depended to a great extent on the flexibility and determination of faculty members themselves, but it would have been impossible at large scale without the resources, redundancy, robustness, and rapidity of response from faculty support units at the institution.

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