How Department Culture Influences Innovation in Online Teaching for "Pandemic Laggards"

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Introduction

Institutions of Higher Education (IHEs) are focusing on online programs as a way to innovate (Magda & Buban, 2018), but faculty buy-in is a major barrier (Walker et al., 2018). Due to the COVID-19 pandemic in Spring 2020, many higher education faculty were forced to teach online for the first time (Means & Neisler, 2020). Rogers' (2003) Diffusion of Innovations (DOI) theory suggests that the adoption of an innovation, such as online teaching, takes place over time, and the last group to adopt are known as laggards. They adopt an innovation often when there is no other choice. In this study, the term "pandemic laggards" will be used to describe faculty who started online teaching due to the pandemic.

Individuals undergo a process in deciding to adopt (or not adopt) an innovation, which is influenced by multiple factors (Rogers, 2003). However, two factors are particularly relevant to this study. The first, "re-invention" is changing or modifying an innovation in the process of implementing it (Rogers, 2003). Higher degrees of reinvention tend to speed adoption and lead to longer use (Rogers, 2003). The second factor is organizational culture (OC) or the "system of beliefs, values, and behavioral norms that come to be taken for granted" (Schein & Schein, 2016, p. 6). With regard to technology use, aspects of OC have been shown to be influential among faculty (Boichuk & Fast, 2017; Reid, 2017) and in implementing online (Zhu, 2015; Zhu & Engels, 2014) and blended learning (Porter & Graham, 2016).

The pandemic provided an opportunity to explore the relationship between OC and online teaching adoption among a unique group of faculty adopters. The purpose of this sequential explanatory mixed methods study was to explore how pandemic laggards' willingness to adopt new online teaching strategies were related to their views of their departmental culture.

Conceptual Framework

The conceptual framework for this study combined Rogers' (2003) DOI to categorize faculty adopters, and Cameron and Quinn's (2006) Competing Values Framework (CVF) to describe OC. The CVF and its diagnostic component, the Organizational Culture Assessment Instrument (OCAI), was designed to capture participants' views of their current and desired culture into one of four culture orientations (Figure 1): clan, adhocracy, market and hierarchy (Cameron & Quinn, 2006). The OCAI is organized in six dimensions: Dominant Characteristics, Organizational Leadership, Management of Employees, Organizational Glue, Strategic Emphases and Criteria for Success.

Figure 1

Competing Values Framework
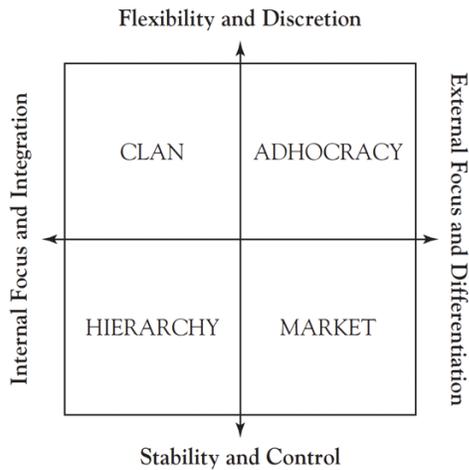
Note. Reprinted from *Diagnosing and Changing Organizational Culture* (p. 35), by K. Cameron and R. Quinn, 2006. Jossey-Bass. 2006 by John Wiley & Sons, Inc.

Clan organizations engender loyalty through shared values, consensus decision making, and practices that empower employees (Cameron & Quinn, 2006). Hierarchy organizations foster stability and efficiency and value clear lines of leadership, standardization of processes, and employee accountability (Cameron & Quinn, 2006). Organizations with a Market culture focus on the external environment, with the constant goal of gaining a competitive advantage (Cameron & Quinn, 2006). Adhocracy organizations have a decentralized structure that values individuality, experimentation and future-oriented thinking (Cameron & Quinn, 2006).

Context & Design

This study took place in Spring 2021 at a flagship campus of a large public research university, which typically offers approximately 500 courses via distance education per semester. In Spring 2020 prior to the pandemic, about 15% of courses were taught via distance. In Fall 2020, 81.6% of courses were taught online, 12.9% were hybrid (combination of in-person and online) and just 5.5% were face-to-face (Bruno, 2020).

Email surveys were sent in February 2021 to faculty who taught online that semester (n=1281), which asked about participants' online teaching background and departmental culture based on the OCAI. Of the 184 usable responses, 61% of faculty (n=113) reported being new to teaching online due to the pandemic.

Additional data were collected via seven follow-up interviews with selected survey respondents who identified themselves as new to teaching online due to the pandemic, and who characterized their department with varying OC orientations. Interviews were analyzed using thematic coding (Ary et al., 2019) to obtain codes, categories, and final themes.

Quantitative

The quantitative portion of this study sought to answer, what is the relationship between pandemic laggards' current and desired OC and their plan to teach online once the pandemic is over?

Current & Desired Cultures

Of the 113 self-identified pandemic laggards, 45% (n=51) described their current departmental culture as a Clan type, 35% (n=40) as Hierarchy, 9% (n=10) as Market type and 5% (n=6) as an Adhocracy. In addition, 5% (n=6) described their culture as a mixture of multiple types with four of those describing their OC as a mixture of Clan and Hierarchy.

As for participants' desired culture, 66% (n=74) desired a Clan culture, 14% (n=16) an Adhocracy, 10% (n=11) a hierarchy, and 3% (n=3) a market culture (Figure 2). Seven percent (n=9) desired a mixed culture, with eight preferring a mixture that included the clan culture and six including the hierarchy culture.

Figure 2
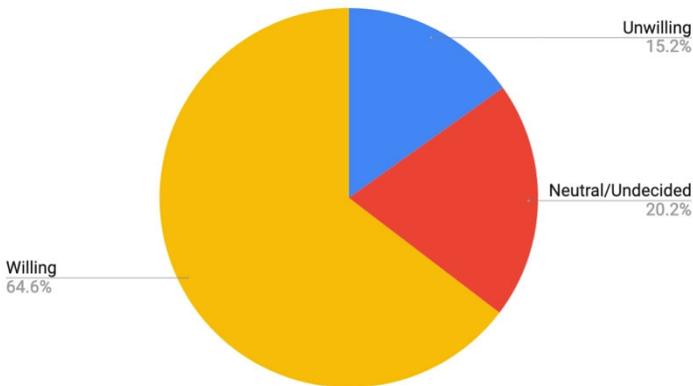*Pandemic Laggards' Current and Desired Cultures*
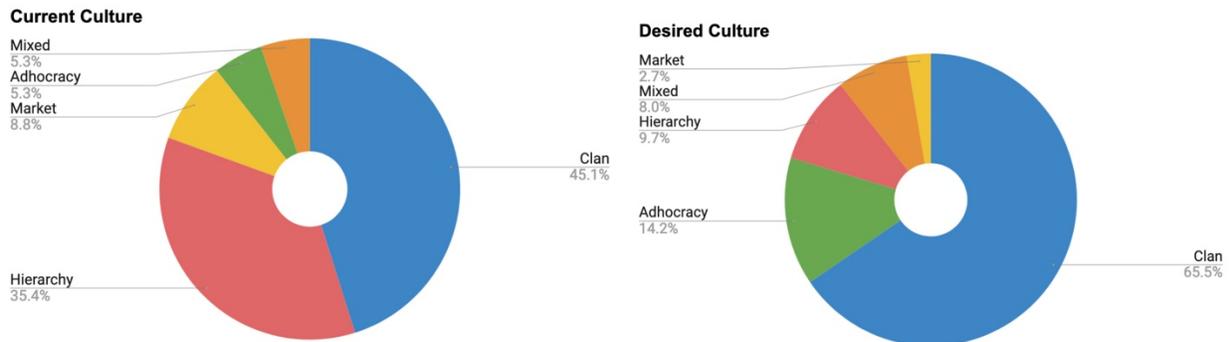
Post-pandemic teaching plans

Of the 104 participants who responded to this question, sixty-two percent were willing to teach online after the pandemic was over (n=64), while 19% (n=20) were undecided or neutral, and 19% (n=20) were unwilling to teach online (Figure 3).

Figure 3
Plans to teach online post-pandemic

No significant relationships were found between participants' current and desired cultures and their plans to teach online post-pandemic. A chi-square test found no significant association between current culture and pandemic online teaching plans X^2 (8, $N = 104$) = 9.91, $p = .271$ ando no significant association between desired culture and pandemic online teaching plans X^2 (8, $N = 104$) = 8.80, $p = .360$.

Qualitative
The qualitative portion of this study explored how pandemic laggards described the influence their OC had on their willingness to adopt new online teaching strategies and their plans to teach online after the pandemic. Pseudonyms are used for interviewees.

Willingness to adopt new online teaching strategies
There were generally two levels of faculty willingness to adopt new online teaching strategies, 1) transformational and 2) minor modifications. Four interviewees made transformational changes, taking advantage of a number of online tools and/or strategies. Examples of these changes include opting for an asynchronous delivery mode, and creating an online set of modules to accompany a course. Three interviewees only made minor modifications, delivering their courses largely lecture-based using web conferencing tools such as Zoom. These faculty made only minor modifications to how they teach in person. The OCAI's six dimensions were used to organize the emergent themes.

      Dominant Characteristics. Dominant characteristics describe the overall characteristics of an organization's culture. The interviewees described their department cultures in different ways, see Table 1. One important theme that emerged was individualistic, as the faculty interviewed were primarily from departments in which collaboration around teaching and research was not the norm. Participants were split when describing their departments with three describing their department's culture in mostly positive terms, and four describing their culture in critical terms or as less than ideal. For the three who were generally positive, they used terms like collegial, supportive and personal. Two out of three were from clan cultures, and all three chose clan as their desired culture. For the four who were critical, they used terms like inefficient, dysfunctional or transitional, and three out of four desired cultures that were different from their current culture.

Table 1

Interviewees' cultures

Interviewee	Positive or Critical	Current Culture	Desired Culture	Descriptors of Culture
Beau	Positive	Hierarchy	Clan	Individual with shared decision making
Nathan	Positive	Clan	Clan	Performance focus, mixed personal connection
Cory	Positive	Clan	Clan	Collegial and supportive
Patricia	Critical	Market	Clan	Supportive leadership, but stressful due to many changes
Fiona	Critical	Hierarchy	Adhocracy	Dysfunctional, conflicting personalities and values
Ethan	Critical	Clan	Adhocracy	Inefficient, Culture of Poverty
Martin	Critical	Hierarchy	Hierarchy	Highly individual, divided by personal agendas

Leadership Style. Leadership style is the approach to leadership within the department. In this area, two themes emerged. The first theme was that of responsive leadership, particularly in regard to instructional issues. Examples of positive or responsive leadership included providing teaching and learning assistants to help faculty with the increased workload, advocating to unit or campus-level administration about instructional needs, emotional support when faculty came to them with issues, and providing online teaching resources such as training or materials. Examples of negative leadership included being too closely aligned with administration-level politics or being too focused on short-term financial gain versus capacity building, both seen as detrimental to an increase in online teaching with one interviewee stating, "Well, I mean given that there's really... a culture of not having any extra resources or ability or investment in pedagogy, that doesn't really make me want to try out a lot of stuff."

Another theme that emerged was faculty autonomy. Most interviewees described their department's leadership as fairly hands off in terms of how faculty taught their courses. According to a number of interviewees, a high degree of faculty autonomy contributed to their willingness to try new online teaching strategies, as they felt free to make changes according to their preferences or student needs. One interviewee mentioned that prior to the pandemic her course enrollments were closely scrutinized and her courses often closed due to low student numbers. During the pandemic, she noticed less oversight, which contributed to her feeling more freedom to implement new online teaching strategies. Some interviewees mentioned that because of a high degree of autonomy, they did not think culture impacted their willingness to adopt new online teaching strategies.

Management of Faculty and Staff. This dimension encompasses how employees are treated and looks at the working environment. In this dimension, two themes emerged. The first is efficient administrative support. Several interviewees expressed being stretched thin during the pandemic, impacted by both a pandemic hiring freeze and increased demands of pivoting to online learning. One faculty member mentioned that it took weeks to handle simple purchasing with grant funds, inefficiencies that took up time that could have been spent on teaching practices.

The second theme was targeted instructional support. Several interviewees mentioned utilizing campus or unit-level support in their transition to online teaching. However, existing services did not meet all interviewees' needs. One interviewee desired personal support saying, "I didn't have the time or the energy to explore all the technical possibilities and exchange five letters with ITS [campus IT services]. If there was somebody here... it would help." In addition, there were particular issues faced by interviewees who taught large classes, such as giving exams, grading and preventing cheating. Two interviewees mentioned the importance of discipline-specific online teaching support. Beyond technical or instructional support, two interviewees mentioned other practical needs. One lacked a proper space at home to conduct Zoom sessions, and another interviewee was not able to be reimbursed for teaching software due to campus rules on reimbursements.

Organizational Glue. Organizational glue is what bonds an organization together. In this area, three themes emerged. The first was students, as stated by one interviewee, "Organizational glue that binds our department together, really that's our students because everyone cares about our students quite a lot." All interviewees talked about how students' feedback and course outcomes influenced their practices.

The second theme was peer support. Two interviewees spoke about influential peers in their departments who served as a hub for online teaching and resources or helped other faculty. Another interviewee shared that she herself provided peer support, giving demos on using Zoom and sharing with her colleagues a list of online teaching resources she had collected. She desired for peer support to become an established norm, stating, "I think, ideally, it would be nice...if we need something from each other, I feel comfortable picking up the phone or shooting you an email, you should feel the same way."

The third theme was collaboration. As mentioned, the interviewees primarily came from individualistic departments, but faculty described ways collaboration could influence their online teaching practices. Several interviewees pointed out that they felt more disconnected from fellow faculty due to social distancing. Co-teaching was a potential form of collaboration mentioned with excitement by one interviewee who stated, "That could work if we have somebody that's taught the course once and then they're bringing on additional people to help bring them up to speed using tools, but then also to bring in new ideas." Collaboration also had the potential to negatively impact efficiency according to one interviewee who stated, "It makes no sense to coordinate with anybody else, that's only extra work in terms of the teaching."

Strategic Emphasis. Strategic emphases are areas of emphasis that direct the department's strategy. In this area, one major theme emerged, the alignment to shared values and goals. One important shared value among all of the interviewees was student success. Other shared values and goals discussed were that of staying accredited, serving students in a culturally appropriate manner, reaching underserved communities and raising funds. Some interviewees discussed that an important shared value was to do what is best for the group or department over the individual. One interviewee mentioned that during the pandemic, he had been willing to take on additional class sections to benefit the department.

Criteria of Success. Criteria of success is how success is defined and what gets rewarded and celebrated in the department. Two themes emerged in this area. The first was research, and the fact that it often is considered more important than teaching in faculty evaluation processes. Research was also discussed in terms of the amount of time it takes to apply for grants, publish in journals and supervise graduate students.

The next theme was departmental survival. Some interviewees described their departments as struggling due to financial strains or external pressures. In light of these issues, anything that promoted departmental survival was to be celebrated. One interviewee said, "Definitely student retention gets rewarded, and really anything positive that can put a positive light on our department."

Post-pandemic plans to teach online
Regarding plans to teach online post-pandemic, there were two main themes.

Face-to-face is primary. First was that face-to-face teaching should remain the primary delivery mode, but could include online elements. All interviewees wanted to move back to face-to-face teaching, however, six out of seven wanted to retain some online elements. Interviewees felt their asynchronous teaching materials such as online learning modules and discussion boards offered greater efficiency and could be reused in their courses post-pandemic. Three interviewees mentioned wanting to teach in the future using hybrid delivery methods, with a mixture of online and face-to-face sessions, or "Here-or-there" sessions in which students have the option to attend face-to-face or online. Two interviewees were strongly considering keeping some of their courses online, despite wanting to move back to face-to-face delivery. Having gone through the experience of teaching online due to a crisis, all faculty expressed willingness to teach online again if absolutely necessary.

While there was openness to hybrid online delivery among the faculty, most of the departments represented in this study did not have plans in place to offer new online courses or programs long term. One interviewee shared that his department was open to online courses and programs as a way to support more students, but the department needed help with developing guidelines, expectations and procedures. One interviewee shared that once his department decided to move to all online classes, faculty worked independently thereafter and never reconvened to discuss strategies or outcomes.

Lessons learned. The second theme was lessons learned. Some of the interviewees were surprised by the effectiveness of online teaching. One interviewee remarked that in his asynchronous class discussions, he saw a greater depth of discussion than in any of his classes prior. Another interviewee experienced remarkable improvement in her students using the flipped classroom model, "My students are speaking, they're speaking the target language, like it's phenomenal...I have not seen this kind of progress."

Many of these "pandemic laggards" were also feeling more confident in their online teaching. One interviewee described it this way, "...having spent the time learning more about this in a crisis situation, you know, now I know a lot more...I could apply that in a much more intentional way." Interviewees described multiple strategies they had used to address online teaching obstacles. For example, one interviewee shared that to address challenges of time management and increased enrollments, he implemented a series of short papers throughout the semester as opposed to one large term paper he previously assigned. Others focused on student differentiation strategies that could be employed online to address differing student needs, for example, employing Universal Design for Learning principles. Faculty also learned overall lessons about teaching that can apply in all situations. One interviewee described it this way, "...I've again, taught for 15 years, and I've learned more about teaching in this past year, then maybe most of the years prior."

Discussion

This study explored pandemic laggards' adoption of online teaching at one institution through the lens of OC. The majority of respondents described their departments as a clan culture and many also preferred this culture. This is consistent with findings from other higher education institutions (Obendhain & Johnson, 2004) which also tended toward clan culture. Perception of culture (culture orientations) did not have a statistically significant relationship to willingness to teach online post-pandemic. Due to social distancing related to COVID-19, faculty expressed feeling more disconnected from their peers and not aware of what each other were doing. Because OC is a shared phenomenon (Groysberg et al., 2018), it may have had less influence due to the effects of the pandemic.

Among the seven interviewees' culture orientations, there did not appear to be a clear relationship between current and desired cultures and levels of re-invention or modification of courses. Two interviewees believed their culture did not influence their online teaching practices due to the autonomy faculty have in their departments. This may suggest that in terms of online teaching adoption in higher education, that individual differences are more influential than departmental culture. This would align with the finding that individual innovativeness, or the desire to try new things, has been shown to be related to acceptance of instructional technology (Akgün, 2017). Some transformational faculty, those who made major modifications to their courses, were indeed more willing to try new things in terms of their teaching. Another individual difference possibly influencing the results is help seeking, particularly the willingness to engage in professional development activities such as training or peer support. Daumiller et al. (2021) found that faculty who were motivated by gaining personal competence, had a more positive attitude to the shift to pandemic-related online teaching.

The qualitative data, however, showed that aspects of culture also influenced willingness to adopt new online teaching strategies and willingness to teach online post-pandemic. While faculty were typically autonomous in how and what they taught, there were cultural factors of departments that influenced their teaching practices. Faculty were extremely busy during the pandemic (Giovannella & Passarelli, 2020), and factors that promoted efficiencies such as responsive leadership, and administrative, technical and peer support had an impact. Faculty also cared deeply about their students' success and were willing to integrate new strategies that supported student success. Because a primary evaluation criteria for many of the faculty in this study was research, the time and resources they were able to devote to teaching was limited. These findings highlight a critical discrepancy between faculty evaluation criteria and institutional goals to grow online offerings and support instructional approaches that increase student success. Reid (2014) also identified rewards and incentives as a barrier to faculty adoption of instructional technologies. Addressing this discrepancy may be key to long term adoption of online teaching. Faculty are often willing to start new initiatives, but IHEs cannot sustain the effort without aligning the desired activity to reward systems (Farmer, 1999).

Hodges et. al, (2020) assert that in Spring 2020 when the pandemic began, faculty were engaged in "emergency remote teaching," characterized by less time for planning and quality assurance, and teaching with a one-size-fits-all approach. Means and Neisler (2020) projected by Fall 2020, with the proper supports in place, faculty would move toward optimal online teaching, which is characterized by effective planning, use of a developed instructional design process, integration of community and engagement, more time and support for quality assurance, and ensuring equity and personalization. This study found that some faculty new to teaching online

have begun to make the transition to optimal online teaching. While many felt stressed during the onset of the pandemic, several have integrated community, engagement and personalization and look forward to more time for planning. Continuous innovation, or the process of re-invention (Rogers, 2003), did in fact take place for nearly all faculty in this study. Faculty made various levels of modifications in their online courses in response to student needs, and many learned valuable lessons through the process.

While nearly all interviewees wanted to keep teaching online or use elements of online delivery, they were excited to go back to face-to-face teaching. Faculty in a 2019 study expressed similar preferences, with only 9% preferring fully online teaching, and 51% favoring hybrid approaches (Galanek & Gierdowski, 2019). Now that many more faculty have been forced to teach online, these numbers are likely higher. Trialability, or the ability to try a new innovation, is a factor that impacts the rate of adoption (Rogers, 2003).

It is important to note that all the interviewees were willing to teach online if needed, although it was not their preferred mode. The pandemic appears to have taught faculty that despite previous experience, they are capable of teaching online, and could do it again. Because of the experience of teaching online in response to a crisis, faculty appear to feel a sense of duty toward teaching online. This could be a fruitful area of future research. IHEs may experience more faculty buy-in if online teaching supported growth or survival, such as raising funding or increasing student access. Another potential area of future research could focus on the impact of departmental culture on the offering of online programs, versus faculty's individual adoption of online teaching. Interviewees mentioned that within their departments online programs had been discussed but not implemented due in part to cultural influences such as conflicting values between administrators and faculty. Students want to keep taking fully online and hybrid courses post-pandemic (McKenzie, 2021). Now that faculty are open to teaching online or hybrid, it behooves departments to design course offerings that align with student preferences.

Limitations

This study was conducted during the COVID-19 pandemic, therefore results may not be generalizable to other periods. While OC has been shown to have a positive relationship to technology-enhanced and online learning, factors outside of OC frameworks could influence the results (Zhu & Engels, 2014). Also limiting generalizability is that adoption research is often based on self-reporting and reliant on participants' memories (Rogers, 2003). In addition, because this research took place at one institution in a unique geographic and cultural context, results may not be transferable. The researcher is an employee at the institution under study and thus may also be prone to bias.

Conclusion

Higher education innovation experts assert that the lessons learned during the pandemic may lead long term to increased adoption, lowered costs and improvements in online teaching quality (Arum & Stevens, 2020). To take advantage of this transition, Fox et al., (2020) recommends IHEs, "use the momentum of this watershed moment to elevate your approach to online and hybrid instruction" (p. 4). This study has shown that faculty worked hard to transform their online instruction and look forward to making continuous improvements. It also revealed how aspects of OC, a key driver of innovation, can support this process now and into the future.

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