

Purpose, place, and people: How the pandemic helped foster open and inclusive course design

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Abstract

In the spring of 2020, many institutions of higher education rapidly adopted new models of course delivery to support the ongoing need for instructional flexibility in response to the SARS-CoV-2 pandemic. This article discusses how the transition to a flexible instructional model at Furman University created space for faculty to consider the value of intentional learning environment design to meet students where they are both literally and figuratively. Reporting on a course planning framework focused on the alignment of learning outcomes, learning space, and considerations of student engagement and accessibility, this article reviews data from a faculty survey on pedagogical adaptations to highlight how the pandemic provided an opportunity to expand notions of educational architecture in course design efforts by reimagining how, where, and through which mediums teaching and learning occur. The results presented underscore the need for sustained attention to open educational architecture as a part of course and curriculum development beyond the period of pandemic teaching and reveal important considerations for educational developers working to support inclusive pedagogy in the 21st century.

Keywords: course design, learning environment, educational architecture, learning spaces, instructional technology, inclusive pedagogy

The SARS-CoV2 pandemic emptied built classroom spaces across the nation, leaving campus facilities to sit dormant for weeks that turned into months. After initial shutdowns in 2020 gave way to a gradual return of people to campuses, many institutions embraced hybrid, flexible learning models (HyFlex or BlendFlex) to return, at least in part, to connections with campus learning environments. Amid ever-changing public health requirements, HyFlex learning models provided hope that such approaches would allow maximum instructional flexibility to adapt to changing needs (Lederman, 2020; Maloney & Kim, 2020). Our own community at Furman University (a small, private, residential arts and sciences university in Greenville, South Carolina) adopted such an approach, encouraging a “FurmanFlex” course model in preparation for our phased return to campus in the fall of 2020. In the FurmanFlex model, a hybrid learning environment encompassed both the physical classroom with co-present others and the virtual meeting space with remote others, all meeting synchronously. As one critical aspect of this work, and in an effort to make classrooms as flexible as possible, our Instructional Technology Services colleagues and technology vendors, with much tenacity and commitment, invested nearly 4,000 hours into installing “remote-ready” technology in 172 classrooms and eight portable remote systems for non-traditional learning spaces on incredibly brief timelines.

Newly modified spaces of learning equipped with live-casting and Zoom-ready technologies created a demonstrable need for instructional training and caused us to renew our focus on the intersections between learning space and pedagogy. Like many educational developers, the problem we faced was the need to orchestrate a systemic course redesign effort that included the use of new and sometimes intimidating hybrid teaching spaces, untested pedagogical techniques, and unfamiliar technologies and learning management systems. To aid instructors in this liminal space, we developed a planning framework and subsequent course redesign effort grounded in an educational architecture process that is values based, student centered, and designed for multi-modal and multi-spatial learning. The pandemic

allowed us to focus our attention on the one thing made most visible at the time—perhaps in part because we took it for granted in pre-pandemic teaching—the learning space and its design.

This case study reports on one university’s attempt to hybridize its learning environments, with the unexpected result of renewing our attention to the physical space, to an expansion of our conception of the classroom, and to inequitable access to it. The result has forced consideration of the places where learning occurs out of the subconscious into more conscious aspects of course design.

By assessing responses to three qualitative survey questions about the experience of teaching during the pandemic, as well as exploring the nature of faculty consultations on instructional redesign during this time, we evaluated how instructors embraced the development of novel learning configurations and technologies as they imagined hybridized learning environments beyond the face-to-face classroom. The sudden pivot to HyFlex learning environments provided a significant opportunity to employ the learning environment as an active partner in the development of instructional practice rather than a passive container for housing instruction. Although forced into uncharted waters without warning, the reconceptualization of the learning environment that followed created greater potential for multi-modal, multi-temporal classroom interaction. In the process, preexisting inequities among learner preparation, access to and accessibility of learning materials and activities, and the ability to thrive in discrete and confined pre-pandemic learning spaces became glaringly obvious.

Results from this case study provide insights and guidance for educational developers as we collectively reflect on HyFlex learning spaces (physical and virtual) that we will continue to inhabit in the years ahead. The SARS-CoV2 pandemic led to the rapid and generative expansion of material and conceptual learning environments. As educational developers, we have a responsibility to take this expansion into consideration as we support course design and curriculum development. This article argues that an open and malleable educational architecture process is required for this task, involving sustained

consideration of where and how our students learn, the values and desired outcomes of that process, and the modifications to pedagogy and instructional technology required to shape learning environments that connect people, place, and purpose.

Designing Spaces: Learning Environments in the 21st Century

Fifty years ago, environmental psychologist Robert Sommer (1969) wrote, “Teachers are hindered by their insensitivity to and fatalistic acceptance of the classroom environment” (p. 119). And yet, the influence of that classroom environment has come into clearer focus since that time. Volumes of research explore the varied impacts of learning spaces on teacher behavior and student learning in both face-to-face and online environments (Brooks, 2011, 2012; Byers et al., 2018). For instance, in a pilot study at the University of Minnesota, researchers found that students learned less when instructors lectured in a classroom designed for active learning than when instructors lectured in an environment configured like a traditional lecture hall (Walker et al., 2011).

Originally used to describe the physical design and development of spaces dedicated to education (Baker, 2012), the concept of educational architecture has evolved today to include both the traditional material focus as well as the design of the education process itself (Caldwell, 1993; Nixon, 2006). Although immersive, experiential, and place-based learning has long been established within First Nation and Indigenous communities (Johnson, 2012), the significant interplay between the physical architecture of educational spaces, the design of activities within those spaces, and the outcomes of the learning process have also been recognized within scholarship on educational design (Jamieson et al., 2005; Tanner, 2000). As an outgrowth of much of this evidence, approaches to open-space learning (OSL) emerged from concerns about the purported negative effects of closed, hierarchical,

and fixed learning environments on creativity, problem-solving, and the free exchange of ideas (Rands & Gansemer-Topf, 2017). Instead, OSL prioritizes free-flowing, self-directed, open-concept learning environments that, according to the pedagogy, foster more transactional, collaborative, and transdisciplinary learning (Chappell & Craft, 2011; Deed & Lesko, 2015; Monk et al., 2011). As such, the use of open space is harnessed in such a way that more fluid, integrated, and productive places of learning can develop.

Even still, ideas about optimal learning environments have long been complicated by distance learning, online learning, and hybridized learning experiences. During the pandemic, many institutions rapidly turned to relatively new platforms that allowed large group, synchronous gathering with breakout room options such as those available in Zoom. Early research on these platforms has demonstrated that synchronous learning environments present teachers and learners with unexpected challenges related to hybridized spaces of learning, including “Zoom fatigue” (Bailenson, 2021); nonverbal dilemmas of repetition, animation, reciprocation, and self-monitoring (McArthur, 2022); and unmet interpersonal, psychological, and social needs (Hall et al., 2021). This rapid shift in the learning environment resulted in a renewed interest in the relationship between built space, digital technology, and pedagogy.

Although there is debate about which spatial configurations offer the best learning environments, on the whole, evidence suggests that when instructors align their teaching approaches with their learning spaces, student learning is improved (Brooks, 2011; Brooks & Solheim, 2014; McArthur, 2015). This article’s study underscores that notion.

Hybrid Flexible Design: Toward New Technologies, Learning Spaces, and Forms of Access

One example of this digital-physical pedagogical model is Hybrid Flexible (HyFlex) learning. With flexibility for in-person gathering as well as

online participation, the HyFlex instructional model proved a prudent strategy for a global pandemic, all while fostering new spatial configurations for learning. Most iterations of the HyFlex approach include a combination of synchronous seated and online interactions between instructors and students, which some research suggests promotes a more favorable learning experience for students (Binnewies & Wang, 2019; Hodge et al., 2004). HyFlex courses rely on alignment of course goals and content, community development and learner engagement, and the integration of physical and virtual spaces through instructional technology to support the four pillars of the modality: provide learner choice, facilitate equivalent learning outcomes across modality, rely on reusable learning objectives between modes of instruction, and foster equitable access (Beatty, 2019).

Especially for the small liberal arts college, the HyFlex model troubles the supremacy of the face-to-face classroom while forcing new considerations of how learning space is defined and assembled to form a productive community of learners. Transitioning from a remote learning model (teacher and participants learn each in a different location and join synchronously on a video conference platform) to a later HyFlex model (some participants in a classroom, some join synchronously virtually) during the pandemic further troubled traditional mental models of where learning happens and how space shapes the learning process.

Such a shift has necessary ramifications for access, accessibility, inclusion, and equity. In the pre-pandemic time, at small, primary teaching liberal arts institutions, the primary mechanism for course access involved students being present in a physical class: if they showed up to class, they had access. A large body of literature suggests this simplistic view of access belies less visible or systemic barriers to learning in that access is not the same as accessibility (Glater, 2017; Hurtado et al., 1997; Page & Scott-Clayton, 2016). However, physical presence has remained a primary indicator of access to learning, even while many institutions offer robust support to ensure learning in these spaces is accessible for those with physical, intellectual, and sensory disabilities. As many more

students struggled to access course materials, external resources, or virtual sessions upon the abrupt virtual pivot at the beginning of the pandemic, lack of stable internet connections, challenging personal living situations, and work and caregiving needs were made more visible. Many instructors began to recognize the exclusive nature of an approach to student engagement that primarily relies on the physical presence of the student in a rigid space and time structure for that student to access the learning environment and ensure that learning materials and activities are accessible. At the same time, forced to use new methods and mediums to assess student learning, instructors were, in many cases, delighted to discover that learning outcomes can be demonstrated and evaluated in a rich diversity of ways, far beyond the fixed and uni-modal or uni-spatial expectations of the past. Thus, HyFlex implementation highlights anew the need for an intentional match between pedagogy, learning space configuration, and learner characteristics.

Due to the fundamental goals of improving access and multi-modal student engagement in HyFlex pedagogy, commentary on HyFlex has frequently noted that the instructional approach requires more than simply transferring a set of existing in-person practices to an online environment (Gannon, 2020)—a feat that requires significant time and effort. If we think about this within the context of instructional technology, which serves as the critical medium through which virtual engagement and learning occurs, the SAMR model of instructional technology (Puentedura, 2014) suggests that instructors most often use instructional technology components in blended learning models to *substitute* for aspects of face-to-face learning and need more guidance and experimentation in harnessing the potential of online or hybrid instructional technology to *augment*, *modify*, or even *redefine* a learning opportunity to make the most of the novel learning spaces available. Exploring the use of instructional technology within this framework provides one way to consider the degree to which instructor ideas about where and how learning occurs have changed and how (or if) that might increase a focus on student choice, access, and accessibility. For example, in the rapid shift to remote teaching

in the spring of 2020, many *substituted* the Zoom room for the physical classroom environment, especially colleagues who favor lecture techniques. Some people used the enhanced capabilities of Zoom to *augment* their pedagogy around student engagement, using the chat feature as a group response device where students could weigh in, ask questions, or add links to references. One way to *modify* instructional practice involves using the Zoom polling feature to embed mini-quiz questions during class to help enhance metacognition and further amplify student engagement. Going even further, some colleagues *redefined* their pedagogy using Zoom to incorporate more intentional use of breakout rooms to bolster student attention and learning and fundamentally reorganize the learning process previously employed.

Given the nature of HyFlex instruction, assessments of the varied and multi-modal learning spaces and technologies available to support and facilitate learning are a necessary first step in instructional design. Alignment concerns are a hallmark of course design, which typically *begins* with an analysis of predetermined situational factors (course time, level, content type, characteristics of students and instructor) and the identification of core goals and learning outcomes (Fink & Fink, 2009; Lei, 2010). In HyFlex course planning, during this self-evaluation phase, an equal emphasis on the design and development of the *learning environment* itself is critical, highlighting the importance of an unfixed and open educational architecture. Such a process requires a reconceptualization of where learning happens from classrooms to “places of learning” (Leijon & Lundgren, 2019).

Educational architecture in the age of pandemic teaching thus complicates a traditional understanding of the classroom as something contained within four physical walls only accessible to those who show up (Jamieson et al., 2000). This broader contextualization of educational architecture forces an often neglected consideration in the course design process: *How do my pedagogical values inform specific use of learning space(s) and the activities that typically happen there? And how will my students access and co-create that space to develop environments for productive and universally accessible learning?*

Re-centering Learning Space to Expand the Landscape of Course and Curricular Design: A Case Study

To openly engage a sense of fatalism among instructors about their brave new learning space landscape, our work through our institution's Strategic Academic Redesign Team (akin to a pandemic pedagogical support council) was focused on intentionally aligning considerations of pedagogy with a deliberate survey of the learning spaces available. We emphasized the physical arrangement of a learning environment, the relative malleability of that setting for varied approaches to learning, and multi-spatial teacher and learner affordances across pedagogy and infrastructure type. Multi-spatial educational architecture was central in our efforts to help instructors redesign their courses for hybrid teaching and learning. Like Jamieson (2003), we contend that educational developers can play a central role in facilitating and encouraging open, multi-modal, and multi-spatial learning and teaching practice. We utilized a tripartite Purpose, Place, and People framework (Figure 1) to structure course redesign and consultative efforts.

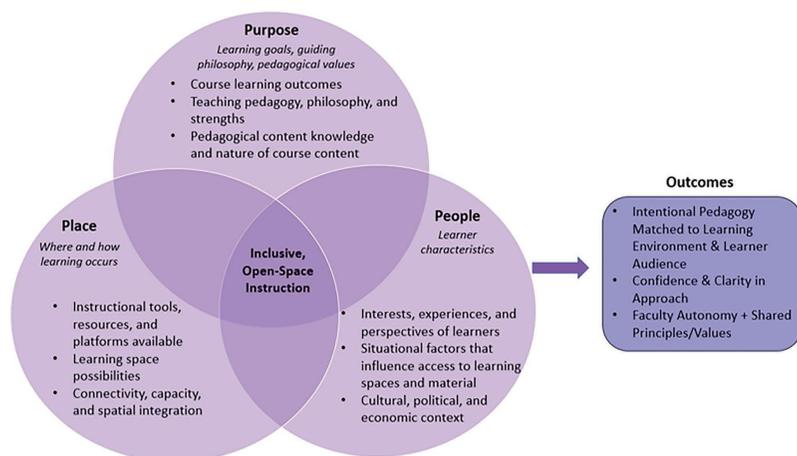


Figure 1. Purpose, Place, and People Course Design Framework

Note. The Purpose, Place, and People Course design framework is designed to foster inclusive, multi-spatial learning.

Understandably, many colleagues felt overwhelmed and lost about where to start following our rapid transition to remote courses.

This basic framework informed the steps and stages involved in our institutional academic redesign process.

We first focused on **Purpose** (in the form of reflection on teaching values and identity) prior to any discussion about format, mode, learning space, or pedagogy. Because remote HyFlex teaching modalities were so new to our faculty, we hypothesized that grounding in to their teaching values and identities using the formula agency + pathways = hope might provide a well-spring of sustainable support for teaching experiments while also helping them reconnect with the joys of lifelong learning (McGowan & Felten, 2021). Participants in our trainings and consultations were asked to respond to a series of prompts regarding their critical learning outcomes, their own motivation to teach, and their individual strengths and resources. Once these were honed or clarified, instructors were asked to link desired course activities and assessments with each outcome, in a process that mirrors backward course design (Wiggins & McTighe, 2005).

Our next step involved helping colleagues envision the open and multi-dimensional learning spaces available to them in order to forge a meaningful **Place** of learning. As defined by noted geographer Yi-Fu Tuan (1977), those locations imbued with meaning become *places*. Within our framework of open educational architecture, the role of an instructor shifts from the development of a centralized learning place to the cultivation of a network of multiple, personalized learning places among the broad and diverse learning space landscape, each tailored to the needs of community members.

We intentionally avoided an initial immersion into online learning strategies and instructional technologies at this step because we wanted to avoid a message that there was a one-size-fits-all way to create a multi-spatial learning environment. Focusing first on technologies and online strategies could lead to a prescribed, uniform, and formulaic learning environment that would risk limiting student learning potential and instructor vitality. In our formal course redesign

professional development “courses,” this step involved a mapping process whereby instructors consulted their list of course learning outcomes, activities, and assessments (from the Purpose phase) to guide the selection of instructional technology and learning space configuration. This approach recognizes that even courses modeled after the best blueprints of online or blended instruction are much less likely to succeed if the design of the learning environment is not the right “fit.”

Once instructors had taken time to clarify their learning outcomes along with their own teaching strengths and considered the types of learning spaces and technologies through which to facilitate activities and assessments to achieve those outcomes, we guided our colleagues through an examination of the characteristics of the **People** who would inhabit the newly organized places of learning. Although the learner audience is often factored into the initial situational factor analysis of most course design models, in constructing new places of learning, it is essential to analyze learner access and accessibility in the final planning stages as well. By creating flexible, multi-spatial, and multi-modal courses, instructors can inherently enhance the inclusivity of that course (Supiano, 2020), but only if students are able to fully access and engage in those learning spaces in an accessible way. Instructional strategies such as Universal Design for Learning hold adaptable, flexible course design as a hallmark of efforts to increase accessibility and enhance participation of members of our learning community whose needs have historically been overlooked in educational systems (Rose & Meyer, 2002). Though often thought of in relation to people with physical, intellectual, or sensory disabilities, an accessibility audit concerning each component of selected instructional technologies and spaces can benefit all users—making it easier for them to perceive, understand, navigate, interact, and contribute to the information and functionality that give meaning to networked places of learning. In our formal course redesign programs, instructors were asked to analyze each “learning space” they planned to employ through hybrid instruction (e.g., physical classroom, learning management system, Zoom meeting room) to consider potential barriers to

access and accessibility and the resources and tools necessary to help all students overcome those barriers. Instructors were asked to rely on their own previous experience with students in the same or a similar class and student reflections and evaluations from previous iterations of the course or similar courses to plan for students' needs. In addition, resources from several campus partners (Accessibility Resources Office, Academic Success, Mentoring and Advising, Center for Inclusive Communities) were utilized for this step in the planning process.

As a whole, we believe this three-step, educational architecture approach to course design helped our colleagues better align instructor teaching preferences and pedagogy and the learning environment—an emphasis we hope to maintain well beyond the current pandemic.

Outcomes of the Approach

The staff and faculty mentors in our faculty development center consulted with hundreds of instructors throughout the multiple course delivery transitions during the SARS-CoV2 pandemic. Our consultations with instructors became more dynamic over the course of our transitional period. Increasingly, instructors developed completely new mechanisms to connect with students, novel networks through which students could collaborate, and advanced mechanisms for students to demonstrate their learning. We were delighted to find that conversations about learning space design provided a rich proxy for our colleagues to wrestle with important pedagogical questions about student choice, inclusivity, identity, and power in the learning process.

To be clear, these conversations were not easy. Instructors were being asked to rapidly shift the instructional strategies they use and the spaces they most associate with teaching, catalyzing a sometimes uncomfortable reckoning with identity and control. However, by entering such discussions from an educational architecture perspective, they proved less confrontational and more open to opportunity.

In April 2020, we conducted a research project (Furman University IRB approval FU040320) to assess how our colleagues were approaching this shift and to measure if and how our open educational architecture course design approach had any impact on their educational philosophy and approaches to the learning process, course design, and instructional technology. Instructors ($n = 172$) who had participated in a formal consultation or center program (workshop, course, etc.) were provided with multiple (four total) opportunities to respond to a brief online survey during the second half of the semester. In addition to several questions about the use of specific instructional technology and confidence in the impact of that technology on student learning, participants were asked to respond to the following three questions:

1. In just a few sentences, what has your experience teaching [online/hybrid/online and hybrid] courses thus far taught you about yourself as an educator?
2. In just a few sentences, what has your experience teaching [online/hybrid/online and hybrid] courses thus far taught you about your students and their learning process?
3. In what key ways have your methods or teaching practices (pedagogy) changed as a result of your experience teaching [online/hybrid/online and hybrid]? What will you “keep” when we return to fully in-person teaching?

A total of 33 unique faculty (19% response rate) responded to the three questions above alongside questions about the use of instructional technology, some more than once. Qualitative analysis was used to examine written responses to these three open-ended questions. All responses were reviewed by the lead author using an inductive grounded theory approach, with no a priori coding categories utilized. The central focus for each response was translated to an abbreviated theme (e.g., greater awareness of barriers to learning). Once all responses were reviewed, similar responses were combined in like categories while keeping records of the number of respondents who

shared that outcome (e.g., 12 participants focused on greater awareness of barriers to learning out of 33, or 36%). Survey responses and coding categories were reviewed by the other two co-authors for accuracy and face validity.

We were curious whether instructors would use the remote shift and its attendant synchronous and asynchronous educational technology tools as a substitute for strategies they employed in the face-to-face classroom, or if they might augment, modify, or even redefine their instructional practice to create new multi-spatial places of learning. Although we did not ask respondents to characterize their technology use within the four SAMR categories, respondents were invited to share how they were using that technology.

Initially, much of the instructional technology operated as a substitute for traditional face-to-face classroom activities. Nearly 98% of survey respondents used Zoom, and 96% used Moodle (our institutional learning management system) for remote instruction, largely for *delivering course content* (e.g., lecture, sharing recorded videos, demonstrating concepts), *sharing information*, and *facilitating student interaction* (e.g., discussion). Although Moodle was widely used prior to our remote transition, the use of the gradebook feature (a more inclusive “paper gradebook” substitution allowing real-time access to feedback) increased from 68% in 2019 to 92% in the spring of 2020.

Our research also revealed that as remote instruction progressed, instructors started to experiment with other instructional technology, including tools and platforms (e.g., Perusall, Flipgrid) outside the university’s enterprise-supported systems. By the end of the spring semester, 65% of survey respondents utilized a supplemental instructional technology outside enterprise systems. While we did not ask respondents exactly how this supplemental technology was used, this level of exploration and customization suggests that instructors moved through a process of educational architecture alignment by expanding the use of instructional technology beyond mere substitution into areas of augmentation, modification, and redefinition. For example, one instructor noted the use of the platform Flipgrid to completely

modify a group project assignment so that students provided video feedback to one another through the platform. Taken together, these results indicate that instructors experimented with various technologies and learning space configurations to find those that cultivated the most effective learning environments for their courses. Such experimentation demonstrates a process of multi-spatial place-making aligned with learning purpose and particularly sensitive to the integration, access, and accessibility of content for the people involved.

More critically, we wondered how teaching during a period of spatial disconnection and separation might influence the educational philosophy, pedagogical approaches, and instructional strategies of faculty and how that was impacted by experimentation with instructional approaches beyond the “confines” of the physical classroom. For each of the three survey questions highlighted above, the sections below outline the top three most frequently submitted responses. All but one of the responses included below were shared by at least 20% of survey respondents. Anonymous quotations from survey respondents are included in-line as appropriate.

Survey respondents indicated that shifting to a virtual learning environment yielded insight about **students and the learning process**, in particular the significance of instructional variety, collaborative learning, and self-directed learning (Figure 2).

1. *Instructional Variety*. Several respondents indicated that they had to “work much harder to keep students’ attention in the virtual environment.” One respondent said they needed to “shift things up” every couple of weeks, relying on virtual breakout rooms for a bit, then shifting to shared recorded videos through a phone application, then to a process where students used FaceTime in pairs. Shifting the learning environment beyond the confines of the classroom allowed respondents to utilize new modes and mediums of engagement that fostered variety in the learning process. In so doing, they reinforced the value of instructional variety that fosters learning in more open and multi-modal learning environments.



Figure 2. Student and Learning Process Insight

Note. Top three most frequent responses shared by 33 faculty and instructional staff to the question “What has your experience teaching online courses thus far taught you about your students and their learning process?”

2. *Collaborative Success*. Survey responses revealed that the inability to “turn to your three closest neighbors” in the physical classroom for collaborative group discussions or activities made more apparent substantial differences among students—with respect to varied levels of preparedness, personality traits, and access to support resources. Respondents also noted that students quickly expressed their dissatisfaction with a lack of opportunities to collaborate with peers in the early days of virtual instruction. Instructors indicated subsequent experimentation with synchronous and asynchronous mechanisms to foster more collaboration (e.g., Zoom breakout rooms, discussion forums), a process that reinforced the need to provide multiple and diverse opportunities for ongoing collaborative learning in their courses.

3. *Ownership and Pride.* Almost half of respondents indicated that a shift to virtual learning highlighted anew that students are “resilient, adaptable, and able to overcome challenges.” Others noted that the shift “forced some [students] to take more ownership of their learning” and that the result was that students have realized they “have a great capacity to teach themselves more than they thought they could.” This is not to suggest that respondents believe they suddenly became absolved from playing a significant role in student learning upon the virtual shift, but does indicate that such a realization forced them to think again about the primacy of what happens “inside the classroom.” Realizing that appropriately structured, scaffolded, and resourced assignments and activities “outside” of the classroom can foster rich self-directed learning that students can take ownership of allowed instructors to design anew their course activities to expand learning into novel spaces and configurations.

Survey respondents indicated that shifting to a virtual learning environment provided opportunities to reflect on **personal educational philosophy and values**, in particular the significance of relational learning, the value of learner-centered flexibility, and the need to carefully monitor course content volume (Figure 3).

1. *Less Is More.* Several respondents noted that the shift to virtual instruction “forced a rethink of course objectives and goals—especially around long-term use/application vs short-term recall.” Because learners were not co-located in the same space, it became much more difficult to “test their knowledge” or recall on the spot without the ability to monitor their use of course resources (notes, textbook, slides). Accordingly, respondents indicated a shift toward more experiential and applied in-class activities that required students to go beyond mere recall and apply their learning to a new circumstance. Furthermore, respondents suggested that they spent more time focused on “comprehension checks” to work through tricky material as a full learning community. Because many of these

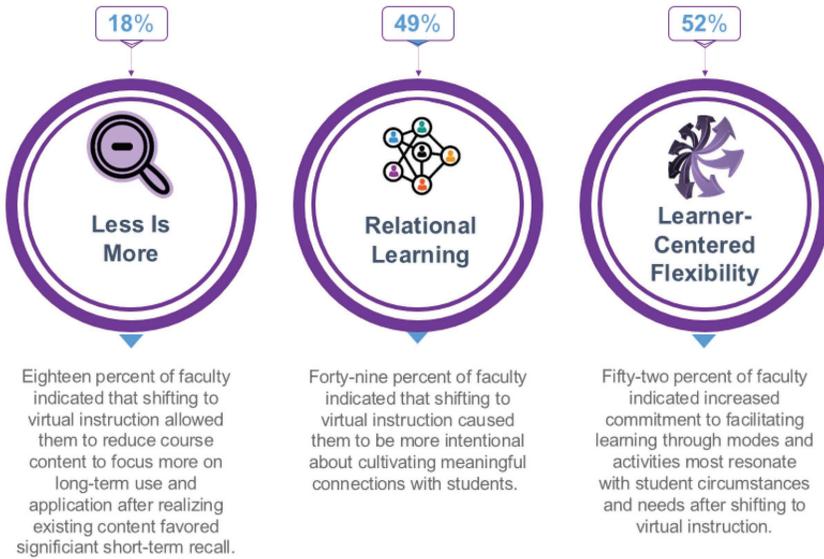


Figure 3. Educational Philosophy and Values Insight

Note. Top three most frequent responses shared by 33 faculty and instructional staff to the question "What has your experience teaching online courses thus far taught you about yourself as an educator?"

experiential processes were time-intensive, respondents were forced to reduce some of their course content to focus only on those aspects they deemed most essential. One respondent noted that the biggest lesson from this process was that "reducing content is OK."

2. *Relational Learning*. Nearly half of respondents indicated a renewed belief in the value of relationship-rich educational processes (Felten & Lambert, 2020). In part because of feelings of disconnect and disengagement upon the initial switch to virtual engagement, respondents became even more convinced that cultivating connection, trust, and sincerity with students was paramount to the learning process. One respondent noted that the process underscored that "two-way relational interaction is essential and has to be more intentional in a virtual format." However, the initial discomfort that

came with physical distance gave way to the use of novel forms of connection (e.g., chat in Microsoft Teams, audio recordings for assignment feedback), which eventually both reinforced the value of connection (“this has affirmed my belief in compassionate teaching”) but also expanded the means and spaces through which that connection could occur.

3. *Learner-Centered Flexibility.* Over half of respondents emphasized a renewed interest and commitment to flexible, learner-centered education. Although respondents candidly indicated the difficulty of the flexibility required to teach during a pandemic—“teaching under these conditions is like using one’s non-dominant hand for writing . . . in a foreign language”—they also frequently cited the positive outcomes they witnessed as a result of such flexibility. Using words such as *adaptable*, *creative*, and *malleable* to describe how the shift to virtual learning impacted their teaching values, respondents suggested that the experience reinforced their “deep commitment to deliver the best instruction and facilitate learning as best as possible” to “ensure learning regardless of circumstance.” Respondents consistently referenced the opportunities presented by the pandemic to expand the methods of engagement and choices that could be offered to students in the learning process. For many respondents the experience engrained a commitment to “allow many paths for students to master learning objectives” going forward.

Finally, the shift to a virtual learning environment prompted survey respondents to reevaluate their **teaching methods and overall pedagogy**, in particular by shifting approaches to student feedback, utilizing more applied assessment, and cultivating more student choice (Figure 4).

1. *Student Feedback.* Because the sudden shift to virtual instruction created a sense of disconnect (due to lack of physical proximity) and thrust instructors into uncharted instructional territory, many

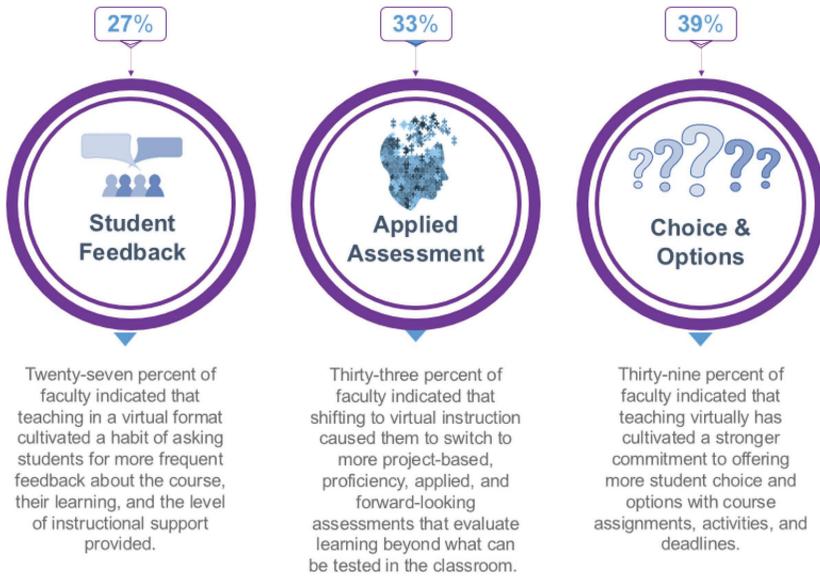


Figure 4. Teaching Methods and Pedagogy Insight

Note. Top three most frequent responses shared by 33 faculty and instructional staff to the question “In what key ways have your teaching methods and pedagogy changed as a result of your experience teaching during the pandemic? What will you ‘keep’ when we return to fully in-person teaching?”

respondents noted how essential regular two-way feedback was during this time. Respondents noted the value not only in providing “more structured, targeted, and specific feedback” for students in this unique new learning space but also in receiving regular feedback from students about what is working and what could be improved. Almost a third of respondents noted that this experience has led to a permanent shift in pedagogical approach with respect to feedback processes, many indicating how that feedback can now occur in previously unexplored learning spaces (e.g., virtual chat, LMS feedback forums).

2. *Applied Assessment.* In part because of concerns about academic integrity and cheating, respondents shared how they could no longer rely on the relative insulation of the classroom to test

knowledge of key concepts and information without students having access to unauthorized content. As a result, respondents indicated an exploration of other forms of applied assessment, often through the use of a novel instructional technology (e.g., video annotation application in which students submit a pre-recorded presentation that peers assess). What at first seemed like the limitations of using new technologies to substitute customary forms of assessment ended up providing opportunities to modify and redefine what and how that assessment occurs alongside a reduction in overall content. A third of survey participants indicated commitment to project-based, proficiency, applied, and forward-looking assessments as a result of this process.

3. *Choice and Options.* Following observations about the value of flexible, student-centered learning (see above), nearly 40% of respondents highlighted how teaching during the pandemic drove a deeper commitment to providing students with choice and a variety of pathways in the learning process. Many respondents noted that the shift to virtual instruction opened up completely new avenues through which to provide students with opportunities to learn. Respondents actively challenged the spatial confinement of learning by employing practices that were both spatially diffuse and driven by student agency and choice. One respondent suggested that if we are serious about “attending to the whole student,” then that literally means we must “meet students where they are.”

Although we believe these findings are informative, survey respondents represent less than a quarter of all participants who engaged in a professional development learning opportunity during the shift to virtual learning, and just 14% (33 of 243) of our full faculty body. While many respondents shared challenges and frustrations in their submissions, it is possible that only those with generally positive reflections about their experiences completed the survey, leading to a response bias. It is also possible that, because the survey was administered by the unit responsible for teaching support, a level of acquiescence bias

exists in these responses. Even still, respondents included members from 16 of 25 (64%) academic departments, at all ranks, and among a wide variety of course content areas across the natural sciences, social sciences, and humanities.

While much of the insight from this survey has a clear spatial link (virtual office hours and labs, online assignment submission, asynchronous discussions), one central unifying component involves an exploration (albeit forced) of a new learning environment that extends beyond the confines of four classroom walls. Threaded within each of the major themes above is a shift from a closed and fixed learning framework to a more open and flexible one. We contend that one result of this process is that a new spatially networked learning environment is emerging, foregrounding relational, transformative, and applied teaching (purpose) that responds to the individual context, challenges, and opportunities of each learner (people) in a multi-modal, multi-temporal landscape (place).

Adapted Course Design Architecture

Over the past many months, our approach as educational developers has changed. Although we have long been advocates of self-reflection and the articulation of a unique teaching philosophy and pedagogy, we have now become more invested in pairing multi-spatial course architecture and construction with a subsequent learner analysis to build more inclusive places of learning. The expansive course design process utilized in this case study involves designing and developing a multi-spatial community that draws on the funds of knowledge and resources of community members instead of centralizing focus on one predetermined learning space or pathway. This necessitates a more reflective approach to course design that takes considerations of access, accessibility, barriers to engagement, and student diversity into account. The expansion of instructional technology required by the pandemic, broad spatial distribution of learning community members during this time, and prominent acknowledgment of the lives

of those members “beyond the classroom” made more visible and salient long-standing inequities among learners and the limitation of a one-size-fits-all or one-space-fits-all pedagogy.

We are presently able to envision with our instructor colleagues bold new open-space blueprints for functional, inclusive learning environments. A cursory consideration of classroom space during the “situational factors” phase of backward design is typical, but this rarely persists throughout the process and seldom includes examining learner access and accessibility. We now emphasize attention to the learning environment (including asynchronous activities and synthesis opportunities) throughout. In particular, as instructors consider the construction of a learning **place**, there are several essential questions for instructors to reflect on:

- What does/did a normal day in your face-to-face classroom look like?
- What type of physical space facilitates that instruction (e.g., small group tables, demonstration areas, wall-to-wall whiteboards)?
- What type of online space best matches that function (e.g., small breakout groups, overhead cameras, collaborative whiteboard capability)?
- In what kinds of spaces might activities, ideas, or learning from the physical classroom and online classroom intersect? Do these intersections provide new pedagogical opportunities? When and how might these intersections take place?
- How will your use of space be informed by or influence your use of inclusive pedagogical practices?

Once instructors have intentionally considered the learning space for their courses, they then ask the following questions to meet the needs of the **people** who will occupy those spaces:

- How will students access each type of learning environment, and what needs to be provided so that the learning environment is truly accessible?

- What barriers might prevent access and accessibility, and how might those be mitigated?
- How will you build a community of inquiry that facilitates a shared, personal, and meaningful place of learning where all members can participate fully?

And as always, we continue to invite instructors to consider their **purpose** in the classroom. The following four questions were honed and crystallized through this intentional intersection with learning spaces:

- What are my beliefs about who can facilitate learning in my course, and whose responsibility is it to promote that learning?
- What are the products of learning most salient in this course, what forms should they take, and in what ways (and where) are students expected to demonstrate them?
- In what ways do I privilege certain types or products of learning based on my own preferences?
- What power dynamics exist between me and my students, and how does the learning space I design reify or challenge them?

As a whole, our experience has taught us that integrating these three categories of questions into the course design process can help better align people and place with purpose. Paradoxically, it took us collectively “moving out of the physical classroom” to understand anew the importance of the learning environment in the course design process. The pandemic’s forced urgency has led to something of a pedagogical renaissance born of rapid course iteration and experimentation. We can barely keep up with the next idea, system, technology hack, or modes of engagement our colleagues bring to the table; thus, peer-to-peer mentoring in service to the construction of unbounded learning environments has further blossomed and strengthened our academic community.

Looking Ahead: Building Pedagogically Aligned Places of Learning

Looking ahead, we anticipate that our course design framework might also inform larger scale curricular design and delivery. At the institutional level, we must think strategically about which types of majors, programs, and courses might need differentiated places of learning so that we can prioritize the use of limited physical and technological resources and better support access and accessibility. Courses with multiple sections and large enrollments (often core general education requirements) might be “combined” effectively, so that lecture portions are held online in shared virtual spaces, whereas small discussion groups could be supported safely in face-to-face settings. Having a plan for future disruptions that accounts for the learning environment’s design will help maintain learning even under great disruption. It is also true that if multi-modal, multi-spatial, and multi-temporal open models of learning such as HyFlex persist into the future, our traditional classroom spaces may need to be recalibrated as well. For example, many physical classroom spaces include large projectors at the front of the room, designed for use by the instructor while presenting information. With members of the learning community joining virtually, those front-of-room large screens on which virtual participants are now projected may not create the kind of equitable or interactive learning environments we desire.

Attention to the design and alignment of the places where learning occurs with curriculum and pedagogical needs also provides the higher education community with another way to bridge the town and gown divide. Community-based learning courses could meet in public learning places that invite community members to participate. Language courses could incorporate virtual learning labs in which native and novice speakers engage across geographical separation. Courses on environmental and social justice could be offered in collaboration with groups across the globe. The intentional design and construction of strategic learning environments could help institutions of higher education better meet public and civic responsibilities to provide

equal opportunity for all individuals and communities to harness learning for personal and collective growth and development.

Although there has been no shortage of commentary about the value (or not) of online and hybrid learning during the pandemic (Lederman, 2022), the higher education community should retain its expansion of multiple forms and structures of learning. These adjustments are an important pedagogical component of a higher education infrastructure committed to greater access and accessibility. As our educational development colleagues noted in an early-pandemic article, “an instructor’s adjustments in this crisis are evidence of good teaching, not bad” (Chick et al., 2020). In fact, adjustments—when informed by student feedback, authentic pedagogical approaches, and research on how and under what conditions people learn—are a form of improvisation that approaches art.

This is perhaps the most liberating of the results of the manic months of pivoting, redesigning, and adapting during the pandemic: rather than a mundane consideration, incorporating more use of creatively designed learning spaces and instructional technology in the service of educational architecture becomes a way to enact radically inclusive places and pedagogy. As we evolve by applying what we have learned to the higher education enterprise in the coming months and years, may these everyday epiphanies continue to inform our teaching and learning.

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