

# Faculty Transition Strategies from In Person to Online Teaching: Qualitative Investigation for Active Learning

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## **Abstract**

In this qualitative case study, we investigated how active learning strategies discussed and practiced in the face-to-face classroom context were transferred to an online modality by four faculty fellows of Indiana University's Mosaic Faculty Fellows Program. This program is intended to support faculty members' perception of how classroom space influences approaches to active learning. In 2020, all faculty members had to transition their courses online, and the semi-structured interview findings of this study showed that faculty members used three online space types to support the continued use of active learning approaches when transitioning to online: (1) core space to replicate existing practices (e.g., video conference and text), (2) shared space to supplement existing practices, and (3) augmented space to transform existing practices (e.g., activities that merge the physical world and online space). We concluded that preparing faculty members to effectively use active learning approaches in in-person classrooms can also guide active learning approaches in online teaching environments. The study also discussed the need for professional development programs that address support for active learning in different modalities by considering augmented space and its impact on student engagement.

*Keywords:* Transfer practices, core space, shared space, augmented space, active learning, faculty development, active learning classrooms, online learning, design.

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Instructional designers engage in various ways to identify instructional problems and apply solutions (Stefaniak & Hwang, 2021). Scholars have explored and discussed how designers make decisions by using various concepts. For example, Nelson and Stolterman (2003) proposed the idea of design judgment for effective design, Lawson (2006) discussed the principles of design thinking, and Schön (1983) developed a reflection-in-action framework to understand how practitioners think in action.

When encountering problems, how faculty members lacking expertise in instructional design select, organize, adapt, and utilize references is an important question for continuous faculty development and support. For instance, transferring a face-to-face course into a digital format requires faculty members to reconceptualize what constitutes a learning space and what characterizes their roles as effective instructors (Samuel, 2022). The active learning approach is one of these issues that needs to be reconceptualized during the transition.

Active learning refers to any instructional strategy that involves students in the learning process and allows them to take responsibility for understanding and applying the material (Prince, 2004). The learning context shapes how we interact (Baum, 2018; Cornelius & Herrenkohl, 2004), how we feel (Asiyai, 2014; Thai et al., 2017), and how we perceive the learning experience (Cho et al., 2021). Traditional views of active learning created in face-to-face classes may be challenging in online courses due to time and space separation and the mediated communication between the instructor and students (Conceição et al., 2021). For instance, in some studies, the computer-mediated context created a superficial level of interaction between online students (Vuopala et al., 2018), a negative discussion atmosphere due to lack of eye contact (Lapidot-Lefler & Barak, 2012), lower student satisfaction in randomly assigned online collaboration groups (Sadeghi & Kardan, 2015), and a lower sense of social presence in online discussion groups (Cortese & Seo, 2012).

There is a growing body of literature related to online learning environment design with active learning elements. For instance, in a literature review study, Poll, Widen, and Weller (2014) identified six strategies to support active learning in online higher education, including (1) establishing an e-community; (2) explaining course goals and expectations clearly to support students' self-regulation; (3) integrating interactive online tools; (4) encouraging group discussions for exchange of ideas; (5) providing timely and applicable feedback; and (6) promoting a student-centered environment.

The first strategy, building an e-community, has been studied and implemented by scholars in a variety of ways. For example, using collaborative annotation tools to capture learners' thinking and processing in the moment (Adams & Wilson, 2020), utilizing social networking to encourage collaborative problem solving (Overstreet, 2020), promoting interaction and dialogue (Vesely et al., 2007), and changing the instructor's role from authority figure to facilitator (Johnson, 2008) are some of the highlighted online community-building strategies.

In a similar vein, utilizing interactive learning tools outside of the Learning Management System (LMS) is another important aspect of the active learning online course design scholarship. For example, in an experimental study carried out with 140 undergraduate students, Ha and Im (2020) noted that students experience higher levels of curiosity, interest, and satisfaction with the online learning activity when they are provided a customizable difficulty level option in an interactive tool. In addition, Craig et al. (2020) argued that online students benefited from an interactive concept mapping tool (i.e., Net. create) used for the introduction of history concepts. The study highlighted that the dynamic nature of the tool allowed students to build personal connections to both content and peers throughout the course.

Finally, Koohang et al.(2016) proposed a model that explained active learning for knowledge construction in e-learning space with three main stages: “underpinning,” “ownership,” and “engaging.” The underpinning stage refers to preparing activities that guide students to become active learners through real-life examples, scaffoldings, and exploration opportunities. In the ownership stage, the instructor helps learners to gain an identity to take control of the learning. Some strategies for the learners include setting self-goals and making self-reflection and self-assessments. Lastly, the engaging stage is the phase where learners actively create knowledge and the instructor becomes a facilitator to actively coach, guide, and mentor the learners.

Previous literature shows that “course design is the major influencer of how actively students direct their own learning, and online course designs encourage student choice and personal learning decisions” (Boettcher & Conrad, 2021, p. 6). While many research questions in the published literature about online teaching have focused on instructors’ needs, perceptions, characteristics, and outcomes, fewer questions have addressed instructors’ course design and delivery as highlighted by Leary et al., (2020) literature review findings. Baldwin (2019, p.198) also identified the similar gap by suggesting that “the online instructor’s perspective on instructional design strategies used in higher education is missing.” Particularly, she addressed the importance of why instructors make specific design decisions when developing online courses.

The purpose of the current study was to investigate how active learning strategies discussed and practiced in the face-to-face classroom transferred to online courses taught by four faculty fellows in the context of a professional development program. We aimed at deepening our understanding of instructional design considerations and practices to understand the interplay between classroom and online teaching experiences and the essence of online space for these faculty members.

## **From Physical to Online: The Theory of Assimilation in Online Course Design**

Baldwin (2020) created The Theory of Assimilation in Online Course Design to describe instructors’ adaptation process to online course design through modifying their experiences in traditional education. Grounded in Piaget’s (1954) cognitive development scholarship, Baldwin (2020, p. 206) argued that the assimilation theory in online course design would inform us “why instructors use specific design strategies” and how they “adapt what they know to the new medium.” In a qualitative study with thirty-three college and university instructors, Baldwin (2020, p. 203) found that using technology to “hear” and “see” and support “intellectual engagement” via authentic offline assignments were the main assimilation strategies utilized by instructors.

Like Baldwin (2020), Jung et al. (2021) examined five faculty members’ problem-solving strategies in terms of instructional design in a college located in Tokyo during emergency online teaching. Analysis of reflective faculty journals indicated differences between novice and experienced faculty members in terms of instructional design. While faculty members with less online teaching experience adopted strategies directly from their traditional classrooms, those with higher levels of online teaching experience followed an eclectic approach by combining classroom experiences, references from the relevant literature, and advice of skilled colleagues and assistants.

Similarly, Samuel (2022) examined the transition strategies of twenty-five online instructors to understand how instructors conceptualized online teaching. Samuel (2022) argued that reframing human interactions in online courses is necessary for effective online teaching. For example, “the traditional teaching paradigm views a class as a collective, and faculty feel engaged when performing in front of this collective. In the online environment, the collective interaction is replaced by multiple individual and or small group interactions” (Samuel, 2022, p. 8).

In addition to reframing faculty-student relations in online space, obtaining the knowledge of Web-based tools to operate outside of the structured LMS environment (Montelongo, 2019, p. 75) was another suggested strategy for the development of a high-impact online course.

In a literature review study on how courses have been enhanced when moved to a digital format, Kirkwood and Price (2014) identified three transferring strategies used by scholars and practitioners: (1) replicating existing teaching practices, (2) supplementing existing practices, and (3) transforming the learning experience.

First, copying “the conventional teaching strategy using some form of technology” was one of the transfer strategies discussed by Kirkwood and Price (2014, p. 10). In this transfer behavior, technology is used to deliver the same course resources and materials to the learners as are utilized in face-to-face classes. Drawing from traditional teaching practices, faculty members simply adapt what they know to the new digital setting. Technological spaces such as discussion forums and video chat tools are utilized to imitate the acts of hearing and seeing that take place in a physical classroom as argued by Baldwin (2019).

The second strategy, *supplementing existing practice*, is concerned with providing additional flexibility to the learners via recorded lectures and extra resources in addition to the replicated materials (Kirkwood & Price, 2014). As argued by Montelongo (2019), supporting learning outside of the LMS using Web tools provides more flexibility to faculty members in this transfer category.

Finally, *transforming the learning experience* refers to redesigning a course to promote online active learning and engagement via reflective and problem-based activities. In a qualitative study, Kumar et al. (2019) interviewed award-winning faculty members for their online course designs. Study findings indicated that meaningful and active learning emerged when instructors integrated authentic course materials such as radio shows and podcasts, used diverse multimedia resources, required students to create digital content, and asked students to demonstrate self-reflection on their learning.

### **Learning Space in the Online Modality**

Learning spaces have their own codes, values, objects, orientations, and concerns (Tsoukala, 2017). As argued by Hertzberger (2008), a classroom can be stimulating, surprising, comfortable, and familiar with the use of light, color, textures, sound, smell, and temperature. He proposed the term “learning landscape” to describe the spatial diversity of a classroom such as collaborative space, individual learning space, debate space, and multipurpose space to stimulate learners’ knowledge, discovery, invention, and creation.

These features of a physical learning space become a model for online environments as well. For instance, virtual communities (Hendarwati et al., 2021; Stepich & Ertmer, 2003) as collaborative spaces, online discussions (Gronseth & Bauder, 2022) as debate spaces, video

lectures (Yoon et al., 2021) as individual learning spaces, and virtual whiteboards (Meepung et al., 2021) as multipurpose spaces represent some examples of an online spatial diversity.

Similarly, the qualities of “stimulative” physical learning spaces (Tsoukala, 2017, p. 4) are also modeled in the online space. For example, *flexibility* is one quality that enables the inhabitant to change the spatial experience and adapt to the emerging needs. Bozkurt and Sharma (2020) used the metaphor of educational alchemy to highlight the importance of temporal and spatial flexibility in an ideal online space to redesign, recalibrate, and reimagine the educational components. In addition, *familiarity* and *consistency* are other crucial qualities of an active learning classroom (Tsoukala, 2017). In the online modality, scholars refer to these qualities as easy navigation and consistent course layout to achieve a sense of familiarity (Baldwin et al., 2018; Martin et al., 2021).

While Hertzberger’s (2008) learning landscape creates these spatial varieties for the five sensory channels, the online learning landscape can only use sight and sound. In other words, users participate in these spaces by interacting with the interface of a Learning Management System through text, audio, and visuals. This limitation increases the importance of how faculty members perceive online spaces and experience the pedagogical transfer from a physical landscape to a digital one.

### **Purpose of the Study and Research Questions**

While the scholarship related to online course design provides perspectives on faculty roles, skills, and strategies, we could not capture any theoretical discussion on how instructors perceive the online space and how these spaces function as pedagogical tools that inform instructional practices for active learning.

The purpose of the current study was to identify how faculty members who received professional development on the use of classroom space and active learning strategies transferred this training to the online space with the hope to identify interactions and boundaries between the physical and digital modalities. Thus, the following two research questions guided our inquiry:

1. How did Mosaic faculty members experience active learning while transferring from physical to online teaching (because of their participation in the program)?
2. How did Mosaic faculty members perceive “learning space” in the online modality?

### **Method**

The purpose of this phenomenological study was to explore the nature of active learning for Mosaic Faculty Fellows in their online course design. We focused on “describing what all participants have in common as they experience a phenomenon” which is how active learning is perceived and experienced while transferring from physical to online teaching by faculty members (Creswell & Poth, 2018, p. 75). This phenomenological research design helped us to elicit personal descriptions of lived experience regarding online active learning design for a small group of participants who experienced it (Creswell & Poth, 2018).

### **Data Collection**

Creswell and Poth (2018, p. 76) recommend that the heterogeneous group size for interviews with people who experienced the concerned phenomenon may vary from “3 to 4 individuals to 10 to 15.” In the current study, after receiving Institutional Review Board (IRB)

approval, ten faculty members who transferred their course to an online setting were identified by the lead author. Next, a study recruitment e-mail was sent to these selected faculty members via institutional e-mail, and four of them agreed to be interviewed.

Online interviews were carried out with four faculty members using the conference software *Zoom*, and both audio and video were recorded with participant permission within the *Kaltura* software. Each interview lasted 45-60 minutes.

### **Interview Questionnaire**

The focus of the interview was the direct description of the active learning strategies, activities, and motivations as experienced by faculty members in their recent online courses (see Appendix A for the semi-structured interview protocol).

The interview protocol included seven semi-structured questions to encourage two-way communication and explore participants' experiences with follow-up questions. The first and second questions asked interviewees to introduce themselves and share their motivation for participating in this professional development program. We used most of the responses to these questions in the participant stories section. The third question inquired about inspiration sources when designing an online course. The fourth question asked for a specific example of an activity or interaction they translated from a physical environment to a fully or partially online one. In the next question, instructors were asked to compare the term "learning space" for physical and digital settings. Follow-up questions mostly related to perceptions of a classroom and an LMS in terms of spatial diversity. The sixth question was about plans for other active learning strategies in the future. The interview protocol was wrapped up with comments and additional examples from participants.

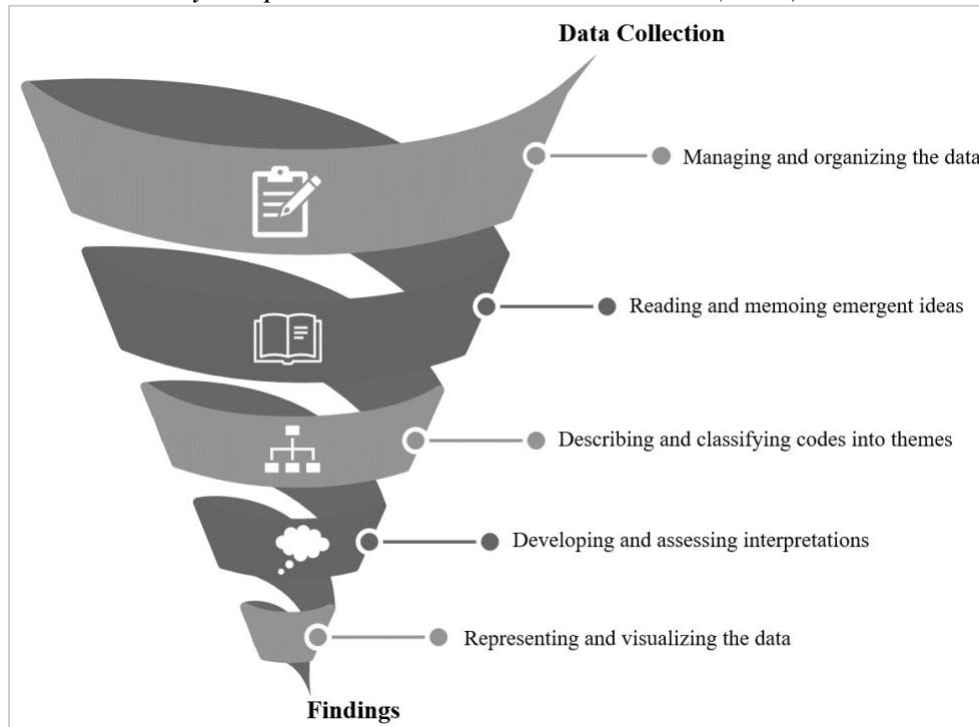
### **Setting: The Mosaic Faculty Fellows Program**

The Mosaic Faculty Fellows program is a one-year program that supports teaching in active learning classrooms, engages faculty input into classroom design, and facilitates faculty-led research on dynamic learning spaces in a Midwest university in the US. During their tenure as a Mosaic Fellow, faculty members teach in active learning classrooms, explore a variety of instruction strategies and technologies, and collaborate with colleagues on applying new instructional approaches. The goal of the program is to promote understanding of the impacts of classroom space on teaching and to inform future classroom designs through research.

The Mosaic Faculty Fellows were trained to use a variety of active learning strategies in face-to-face contexts. In this phenomenological inquiry, we were interested in these individuals' online experiences with active learning to design more comprehensive faculty training that can be applied to both physical and digital modalities.

### **Data Analysis**

In the data analysis, we engaged "in the process of moving in analytical circles rather than using a fixed linear approach" (Creswell & Poth, 2018, p. 185 - 186) since all steps are interrelated and often happen simultaneously as presented in Figure 1. The analytic steps of the Data Analysis Spiral were followed to generate replicable and explicit data analysis outcomes.

**Figure 1***The Data Analysis Spiral, Based on Creswell and Poth (2018)*

After completing the interview process, we transcribed the recordings using an institutionally approved, secure transcription company and obtained the approval of the interviewees on final transcripts. The digital files were organized in NVivo, a qualitative analysis software, and pseudonyms were assigned to protect the privacy of participants.

Following the organization of files, each transcript was read several times to get a sense of the entire dataset. During this reading process, we took notes regarding the short phrases, emergent ideas, and key concepts utilized by interviewees. For example, participants' stories were extracted in this step to elaborate their teaching pedagogies, experience with technology, and perception of learning space in course design. In the next step, we formed the codes and described the themes.

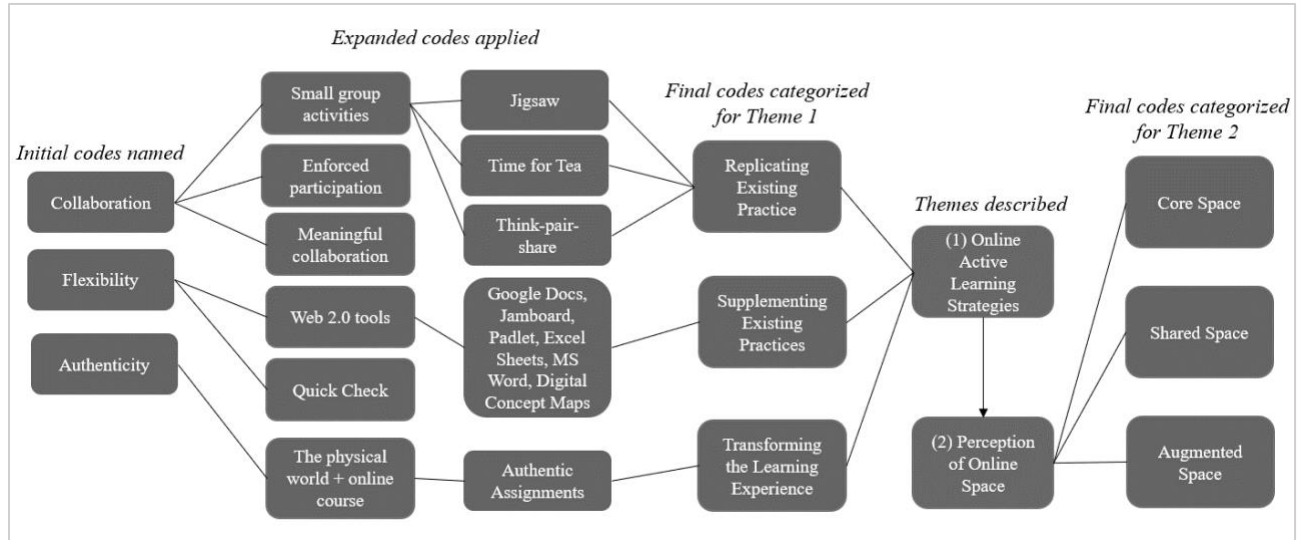
As detailed in Figure 2, collaboration, flexibility, and authenticity were the initial codes of our analysis for active learning. These codes were then expanded with sub-codes derived from transcripts and they formed final codes for the theme of online active learning strategies. In this step, we adopted a deductive approach by following the predefined set of themes identified by Kirkwood and Price (2014) including: (1) replication of existing teaching practices, (2) supplementing existing practices, and (3) transforming the learning experience to answer our first research question.

To answer our second research question regarding faculty perception of online space, we engaged in an interpretive process for alternative meanings about how these codes inform us regarding the concept of "learning space" in online modality. In this step, the similarities and differences between the nature of face-to-face and online interactions emerged as the

predominant theme. Specifically, the work of Baldwin (2019, p. 205) on the “assimilation in online course design” helped us to formulate three space types including: (1) core space, (2) shared space, and (3) augmented space to better describe how faculty members experience the notion of virtuality.

**Figure 2**

*Coding Procedures for the Themes “Online Active Learning Strategies” and “Perception of Online Space”*



In the final phase of our research, we created a visual image (see Figure 3) of the information to represent the importance of faculty perception of digital space on their online active learning strategies.

## Findings

### The Participants’ Stories

The following sections present a summary of the online teaching experiences of each of the four Mosaic Fellows as evidenced by the interview data. Pseudonyms are used to protect anonymity.

#### *Olivia: Is There any Such Thing as Inactive Learning?*

Olivia is a professor of practice in the Journalism Department. As a veteran journalist, she does not have a formal training background in the education field but has acquired a knowledge of learning theories, pedagogy, and instructional design in the classroom. She observed that “...[although] there [were] excellent colleagues who helped me a lot, there was no sort of roadmap. And so, I was doing a lot of work, attending every workshop I could. So, getting involved in the Mosaic Fellowship was part of that experience of just being very determined to learn as much as I possibly could.” She also added, “the idea of active learning, the first time I ever had that phrase I thought it was really silly because I was like well, is there any such thing as inactive learning. What does that even mean? But I was happy to go along with



the idea because what a great way to simply explain what we are trying to do in the classroom which is to teach things that only make sense.”

She had been teaching in the Media School since 2014 and taught a required Reporting class for undergraduates, Public Relations Writing, and Media Ethics fully online in 2019-2021. Olivia defines pedagogy as the combination of resources, conversations, exchanging information with people, and reflection. Learning space, on the other hand, is an abstract concept for her where instructors and students co-inhabit, such as a Zoom session, a classroom, an outdoor place, a phone conversation, or writing letters. Finally, Olivia considered technology as an assisting element that facilitates learning space interactions.

***Farah: It is not the Space, it's the Teaching Approach***

Farah had been a Senior Lecturer in the Computer and Information Technology Department for seven years. She mostly teaches undergraduate database and programming classes, and she is the coordinator for most of these courses. Farah is the recipient of several grants related to instructional design and experienced with teaching in active learning classrooms as well as using flipped learning models.

Farah described her first encounter with flipped learning as follows: “First time, I heard about flipped classroom from my department chair. She gave me one big file with different material, conference proceedings, some articles, and all those. It sounded interesting. Then, I started talking about other colleagues who already started using flipped classrooms, then I joined Mosaic Program. And since then, I enjoy experimenting and collaborating in my course design.”

When she was asked about how she perceived the role of space in the learning processes, she prioritized teaching approach over the learning space: “So, it's not the ‘space’ probably, more like ‘teaching approach,’ how I can make sure my students are learning what I intended them to learn, whether they are learning all the learning objectives I have. It could be virtual. It could be mixed, or it could be completely online. But to me, I have to design my class in such a way [that] they are mastering what I intended them to master.” She also added that if she must choose, she prefers teaching in a physical classroom since she has already refined her teaching skills in that setting.

***Moana: Space and Technology as Agency Providers***

Moana is a clinical associate professor in the Department of History and co-director of the Institute for Digital Arts and Humanities. Her interest in active learning pedagogies is rooted in her graduate student experiences. In her interview, she noted that, “some of the things that we did in my graduate training included active learning in large lecture classrooms, and they were all those horrible, fixed seating classrooms where there are 150 people packed in like sardines, unable to move.” After becoming a faculty member, she looked for opportunities to employ active learning strategies in flexible classroom designs for her students and decided to apply for the Mosaic fellowship at Indiana University.

Moana has been teaching a course on the history of cultural and social responses to the plague in face-to-face, online, and hybrid modalities. She stated that space matters since its design provides or prevents agency. To clarify, she added the following example on the agency of space: “if you are in a classroom where somebody is on a podium, and everybody is sort of arranged semicircular to face that person. That person is the only person in the room with any kind of agency. [However,] if everybody is swiveling their head to look at a person who is

standing in the steps, in the middle, and capable of focusing on a screen, capable of then shifting their gaze and choosing when they look at you. So, space makes a difference in this case...”

In terms of the role of technology in learning and teaching, she thinks that technology is the space in an online learning setting. Thus, she claimed, “you really have to understand the affordances of what a tool does, how it pushes people to behave, what kinds of behaviors you want from them, and how you can encourage those behaviors without mandating them” for meaningful and effective technology use.

### ***Ryan: A Controlled Chaos Approach for Active Learning***

Ryan is a teaching professor of Computer and Information Technology. He has been teaching courses related to software development, programming, logic, and information technology management. He defined his teaching style as very interactive: “My courses are very conversational, it takes a lot of back and forth between myself and the students, and between the students themselves.”

Once he started teaching, he joined several communities of practice for faculty professional development. One community focused on educational technology and another on flipped classrooms. Before the Mosaic Program, he also had a variety of opportunities to practice online teaching. He noted that, in contrast to the traditional engineering pedagogy prevalent in his department that includes lecturing, testing, lecturing, and testing again, he was always interested in finding engaging educational tools and teaching techniques that would lead to collaboration and hands-on activities. Ryan identifies his classroom management technique as “controlled chaos” in which all class interactions look unpredictable and disorganized but teaching and learning processes function according to the pre-defined learning goals.

### **Themes from Faculty Experiences**

The purpose of this study was to examine instructors’ transitional experiences from physical course design to online course design with an emphasis on active learning and perception of space. To answer the first research question, we identified three main themes that highlighted transfer practices as informed by the review study of Kirkwood and Price (2014) including: (1) replication of existing teaching practices, (2) supplementing existing practices, and (3) transforming the learning experience. These categories and the sub-codes from four interviews are discussed in greater detail below.

### **Replicating Existing Practices**

Transferring face-to-face small group activities into Zoom and Canvas contexts was one of the most prevalent replication practices to support active learning reported by interviewees. For instance, Olivia carried a cooperative learning technique, *Jigsaw* to Zoom, using the breakout room feature of the software in her media ethics course:

So, I developed group work very much the same way as I did in class. I tried really hard to think through how I can use Zoom to replicate the in-person experiences that my students have. I did a jigsaw. That was very complicated on Zoom. But I would give each group something that they had—you know, I’d break the chapter up and each group would have a piece of the chapter. But rather than having them reform into different groups, which I did do a bit, but it was so complicated, I would just have each group do a presentation after they’d had some time to discuss the material.

Due to the difficulty of group re-forming on Zoom, she developed quicker ways to make the grouping process easier by “let[ting] them join their own rooms.” Moreover, Olivia copied her office hours to Zoom under the name of *Time for Tea* to approximate the online meeting experience to real life:

I had a thing which I called Time for Tea. So, instead of having office hours, I had time for tea. So, you had to name your favorite tea, right, and then turn up, right. I mean, we stopped talking about tea after week one but still. It encouraged people to come, it became like a class joke. So, I would say that was a Mosaic-inspired move because I was trying to make it more approximate to real life, you know, that it was less formal and more informal and therefore, more appealing. So, that's one thing I will definitely continue to do online and actually in person as well.

Like Olivia, Farah replicated small group activities that she used in the face-to-face classroom on Zoom, and she reported some difficulties in relation to monitoring the performance of the group members online:

So, with the online setting, it's different. I still try to keep the same format, still video-recorded lecture. Then in class [synchronous video conference], I put them in a group. I let them work together in a group. Even though I tried to mimic the same model, that I tried in person, I've encountered some difficulties, such as in-group, it is not as collaborative, or students do not want to talk. You know, it's not the way it was like physically. For example, one person who is sharing his or her screen on the Zoom, he is active, or she is active, but rest? It's hard to say whether they're working, they're collaborating, because they do not talk.

Farah stated that she tried to improve this replication strategy by inviting a colleague expert in the instructional design field to observe her online class activities. After the observation, she developed a strategy by telling “the group that once they are done with a particular activity, I will call them by name randomly, and someone needs to explain the solution.” She calls this technique *enforced participation* since she believed that undergraduate students “need to be assigned some kind of responsibility” to encourage self-regulation.

Contrary to Farah, Ryan expressed his discomfort with enforced collaboration in the online setting. He emphasized the significance of meaningful collaboration in the transferred activities:

The thing that I absolutely hate the most is when an instructor creates a discussion and then says, post your answer and respond to two other students, right? Because again, the people who way and to like Friday night to post, then they go back and it's like their response sometimes is like, I agree. That's not helpful. It's not meaningful. That is *forced collaboration* for absolutely no reason. But if the discussion is framed as the four of you have this problem to solve, go solve it, and come back with a unified solution. Like that's a much more meaningful collaboration.

Finally, Moana noted that she replicated a *think-pair-share* classroom activity in her online history course by requiring students to look at each other's visual work on Canvas and reflect on their peers' work. With this strategy, she aimed to support the intellectual engagement and self-reflection skills of the learners.

I had students think about—so one of the tasks I had them do was to take plague artwork from the 13th century and the 14th century and redraw it using either a modern art form with medieval social and cultural norms or a medieval art form with modern COVID social and cultural norms and then document the differences. But then, they had to go look at someone else's and draw in one of the things that somebody else had documented in their artwork. So, they had sort of a multistage like peer reviews type thing in Canvas—here's the thing that you did. Here's someone else's. What did you like about theirs? What did they do that you didn't do that you could incorporate into yours, given the focus that you had in your artwork?

Interview data indicated that small group collaborations are the most popular active learning strategies replicated in online teaching and learning settings. In four cases, the Mosaic faculty drew from classroom teaching experiences and adopted what they know about active learning in the digital setting.

### **Supplementing Existing Practices**

The second theme, *Supplementing Existing Practices*, refers to providing additional resources, tools, and instructional strategies to increase flexibility and choice for students in the online setting such as Web 2.0 tools and other HTML applications. Faculty members supplemented active learning by these Web tools to allow students to create, share, and communicate in the online setting.

For example, according to Ryan, online space is different than physical space in terms of the lack of an obvious place and borders. Therefore, instructors need to develop supplemental strategies to define the limits of the space that will facilitate student learning and group regulation:

I have to construct some kind of space for the students to share their ideas above and beyond a breakout room, right? I mean, they can use the breakout room and that's how you could do it. But I also need to be very careful when I do that. I have to make sure that I give them a link to the Google Doc, Jamboard, Padlet, Excel sheet, MS Word, or whatever to collaborate... Because if I break them up into small groups and I give them 15 minutes to do something. Sometimes they'll take that whole 15 minutes just creating and sharing one document, right by the time they type everybody's email in and get everybody to send it to their phone and that's it. It's a waste of time. So, I have to very consciously provide that space for that. So that is one huge change between online and [face-to-face].

Ryan's comments referred to the presence of shared technological spaces such as Google Docs, Jamboard, Padlet, Excel sheet, and MS Word to both record the conversations in Zoom's breakout rooms and facilitate the online interactions. Similarly, Farah shared how she

implemented an online assessment tool, *Quick Check*, to monitor and guide her students' learning and indirectly encourage students' ownership of their learning (Koohang et al., 2016).

And I used Quick Check to make sure that they're completing their task and all those to enforce that they are completing their pre-class activity... The advantage of using Quick Check was it was integrated with Canvas, and I can see the analytic. I can see for each question what the performance rate for the whole class is. So, the question which is 50 or below the percentage of students who made it correctly, answered correctly, I got an idea that these are the topics students are struggling with.

The Quick Check tool can be interpreted as a privately shared technological space between learner and instructor. This formative feedback strategy is used to invite learners to constantly reflect on their performance.

Finally, Moana explained how she transferred a network-based concept mapping tool that she used in the classroom to the online course to maintain the connection to the learning outcomes and materials:

I know that one of the things that active learning works well to do is to build community among students, and that comfort level and understanding of how they are—they work together as a team helps with learning outcomes. I wanted them to be able to carry that into an environment where they would be totally physically and socially isolated. I felt like that would help both me and them maintain a connection to the learning outcomes and the material itself.

### **Transforming the Learning Practice**

Finally, the third theme, *Transforming the Learning Practice*, involved findings about Mosaic Faculty's redesigned active learning activities only for the online modality. For instance, Olivia shared an assignment on reporting that she redesigned after moving to an online format for her Media Ethics course.

There was a student who wanted to prepare a report about how Walmart was adjusting to masking and all that stuff, but he couldn't go inside, they wouldn't let him go inside the store, you know, to talk to people. And I wouldn't let him go inside the store because I didn't want him to get sick. So, I had him sitting in the parking lot with binoculars counting people going into the store and reading the instructions on the door for masking and all kinds of stuff like that. I mean, we just used every resource we possibly could do the reporting we needed. And they came back with—I honestly think they did the best reporting I've seen in that class.

[Another] student did a lovely story about the kids in her street and how the parents were coping with the pandemic. Her neighbor was a judge. So, they were working from home. It was amazing reporting. And it was because they took advantage of the situation, they were in.

Olivia added that she posted the results of this authentic assignment on a website created for this class and branded it as "In the Field." She concluded that "they posted their photographs, they

got pictures of people working in stores, talking about how they had adjusted to COVID” in that digital space.

## Discussion

The findings in this phenomenological study offered a perspective on how faculty experienced the transfer of active learning approaches from traditional to virtual environments. As evidenced by the analysis, three transition strategies were utilized: (1) replication of existing teaching practices, (2) supplementing existing practices, and (3) transforming the learning experience. While performing these transitions, faculty members applied four main references including pedagogic references, technical references, cultural references, and contextual references.

First, Jung et al (2021) argued that the faculty with less online teaching experience replicated their face-to-face classroom experiences when shifting to an online environment. Similarly, in this study, Olive, who has less experience in online teaching, used direct transfer from classroom teaching. She copied her office hours to Zoom under the name of *Time for Tea* to replicate the in-person meeting experience, and brought *Jigsaw*, a cooperative classroom strategy in Zoom’s Breakout feature. During this transfer, it is important to note that for novice faculty members, the phenomenon of active learning was first experienced in terms of pedagogical perspective. For example, Olivia initially applied **pedagogic references** such as community building and peer learning that she utilized in the classroom. After encountering problems such as difficulty with student grouping and management in breakout rooms, she used her technical references for meaningful active learning.

Second, in the supplementing existing practices, Jung et al (2021) also indicated that more-experienced online instructors, like Ryan, Moana, and Farah, adopted an eclectic approach by combining **pedagogic references** (e.g., small group discussions), **technical references** (e.g., promoting flexibility outside of the LMS such as Google Docs, Jamboard, Padlet, Excel sheet, and MS Word), and **cultural references** (e.g., how to maintain dialog). For instance, Moana’s use of an interactive concept map in the history course aimed to increase students’ curiosity, interest, and satisfaction with the online learning activity (Ha & Im, 2020) as well as maintain the connection to learning materials outside of the course.

Third, in transforming the learning practice, active learning was experienced through **contextual references** that depend on the nature of the learning activity and emerging challenges and opportunities during the course design. In this study, Olivia’s grocery store observation assignment in the Media Ethics course was redesigned after COVID-19. Since entering the store to observe customers posed health threats for the students at the beginning of the pandemic in 2019, the instructor changed the assignment to observation and used the online course space to share the artifacts. This example demonstrates how faculty members used “ownership” and “engagement” for active knowledge construction in online learning space (Koohang et al. 2016).

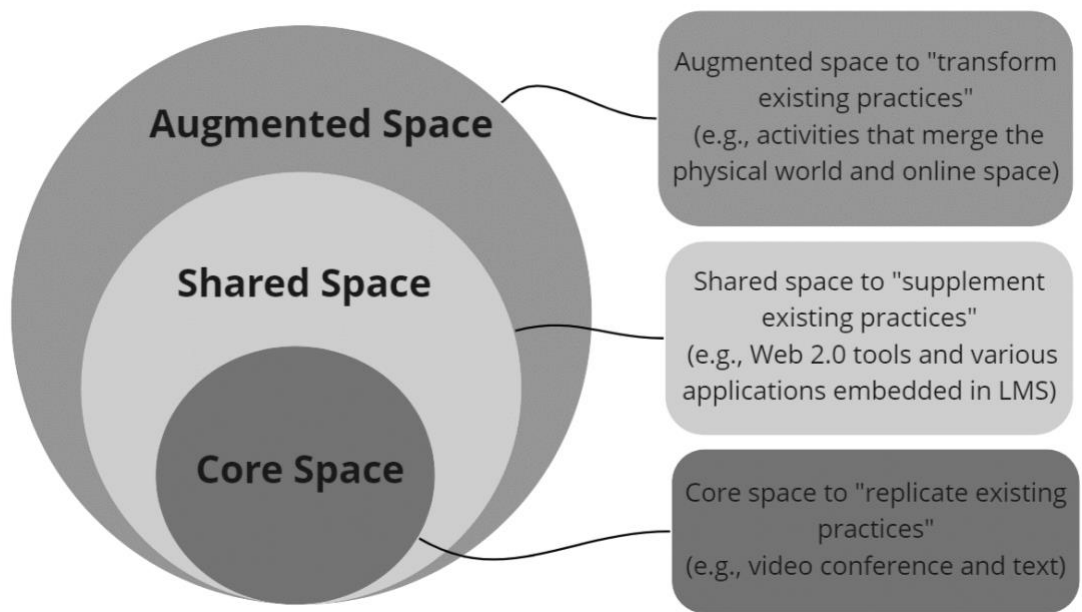
### Perception of Online Learning Space

The three transformations identified in the data analysis also helped us to answer the second question: how did Mosaic faculty perceive “learning space” in the online modality? In this step, Baldwin’s (2020) *The Theory of Assimilation in Online Course Design* provided us a theoretical land to interpret how the basic human needs such as hearing, seeing, and sharing have been addressed in online course design by four faculty members with an emphasis on active learning. Figure 3 presents a summary of the three online space types (i.e., core, shared, and

augmented) and how they contributed to instructional transfer strategies to support active learning online discussed in the first research question.

**Figure 3**

*The Summary of the Three Online Space Types and How They Contributed to Faculty's Active Learning Strategies*



As Baldwin (2019) argued, *core spaces* such as video conferencing tools and discussion boards functioned as human “eyes” and “ears.” Faculty members utilized core spaces for instructional assimilation in online course design hoping to approximate the mediated experience to real life. Since the environment is influential in shaping individuals’ moods and perceptions (Bohn-Gettler & Rapp, 2011; Barrett et al., 2013), the sense of presence and immediacy were supported in the core space (i.e., video and chat) by several collaboration techniques that are familiar to both faculty and students from classroom practices.

When Mosaic faculty supplemented existing teaching practices online, they took advantage of *shared spaces* where students and instructors can produce and share content and engage in dialogs. As evidenced by the interview data, providing purposeful shared spaces seemed to help faculty members develop guidance for students despite the complex and fluid nature of the online space. While, in this study, shared spaces are seen as spaces to organize and structure the fluid online context, Montelongo (2019) referred these Web-based tools as “escape spaces” from the structured nature of LMS environment.

Finally, inspired by Manovich’s augmented space definition in computer science, “a physical space overlaid with dynamically changing information” (Manovich, 2006, p. 223), we identified an *augmented space* where physical world activities are combined with the online course activities. Among the three main themes identified in the current study, examples of the transforming the learning practice theme were captured less compared to the other two themes. This result may stem from the difficulty of designing authentic assignments that connect real-life

to the course content for particular topics such as programming and historical concepts and time limitations of the course.

Interestingly, faculty members with less online teaching experience seemed to be using augmented space only. While Olivia initially adopted direct transition from the previous classroom activities, she began moving from core space activities to augmented space activities in subsequent semesters. The study by Johnson (2017) on faculty perception of online space reported that “as faculty grew in their confidence in the online environment, they described online teaching by way of specific problems they encountered” (Johnson, 2017, p.447). In other words, the specific problems encountered in online space might have contributed to shaping Olivia’s perception of online active learning.

## **Study Implications and Future Research**

Faculty beliefs, values, expectations, culture, and norms are some of the many components that contribute to their perception of online learning and teaching (Shreaves et al, 2020). The current study provided a new theoretical perspective for educational technology scholars on how faculty members perceive online space and how online spatial diversity functions as a pedagogical tool. For instance, three space types identified in the findings (i.e., core space, shared space, and augmented space) provide a useful pedagogic guideline for novice online instructors. These spaces can facilitate instructional design order (e.g., starting from the basics of the core space to plan the course, then, moving to the shared space for engagement and interaction, and finally benefiting from the augmented space for authentic learning experiences) and help faculty members to reflect on the quality of the online course. In addition, these concentric circles present a tangible visualization of the abstract and fluid nature of the online setting and provide a narrative tool to communicate the characteristics of an online learning landscape for the practitioners and faculty. For instance, it can serve as a good conversation starter in instructional consultation sessions between faculty members and instructional designers. While we chose to focus on transition strategies from physical to online space with a focus on active learning, future research could focus on other transfer patterns for the assessment strategies, learning material selections, and concerns for diversity, inclusion, equity, and justice. These comparative inquiries between the physical and digital modalities can help researchers and instructional designers to better understand the nature of online space and better describe the characteristics and qualities of an online learning landscape.

## **Limitations**

Although we obtained rich data from four faculty members to consider how they transfer active learning strategies to the online courses and how they perceive learning space, the findings should be interpreted in the specific context of the Mosaic Faculty Fellows program where only four faculty members shared their experiences.

In addition, in pursuit of trustworthy research, the authors discussed the emerging themes in weekly meetings during the data analysis. However, our interpretive process for alternative meanings about the space types is highly subjective and might include our biases about an ideal online course design.

Finally, readers must be cautious about the time of the study. Interviews were carried out during the remote online teaching in 2021 when all faculty members were required to teach



online. Excessive exposure to online teaching and learning discourse at school and in the media might influence faculty responses to the interview questions.

## Conclusion

One key conclusion can be drawn from our study. We might consider leveraging understanding of teaching in physical spaces when we prepare faculty members to effectively navigate to online teaching environments, as the latter modality appears to require important awareness of digital space types. In other words, space matters online too. Our interview findings informed us about the presence of three online spaces that can be used to support active learning; (1) core space including basic software used to *hear* and to *see* (e.g., video conference and text), (2) shared space that enables students to *create*, *share*, and *communicate* in the online setting such as Web 2.0 tools and various applications embedded in the LMS, and (3) augmented space in which the physical world and online space are *merged* to get authentic learning experiences.

## Declarations

The author(s) declare no potential competing interests with respect to the research, authorship, and/or publication of this article.

Data are available on request from [basdogan@iu.edu](mailto:basdogan@iu.edu).

The study was approved by Indiana University's Human Subjects & Institutional Review Board (Protocol ID:11942).

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## Appendix A: Interview Protocol

### OPENING

- Greet the interview subject.
- Approve that it is OK to record: “May I ask you to give your permission to record our interview?”
  - If yes, *begin recording.*
  - If no, *thank the interviewee again and stop the interview.*

### INTRODUCTION

- Read the below script:

The purpose of this study is to discover the ways that Mosaic Faculty Fellows transferred lessons learned in the program to help them teach in digital/online environments. The interview will be audio/video recorded.

1. Efforts will be made to keep the information you provide to us confidential, and your instructors will not know that you have participated.
2. The duration of the interview will be around 1 hour. An email may be sent to you for clarification after the interview.
3. Participation is voluntary. Feel free to stop the interview at any time if you are uncomfortable with any question or for any reason.

**Question 1:** Could you please introduce yourself briefly?

**Question 2:** What motivated you to attend the Mosaic Fellows Program?

**Question 3:** What concepts, readings, or activities from the Mosaic Fellows program directly inspired your design of aspects of your online class?

**Question 4:** Would you like to give me an example of an activity or interaction you translated from a physical environment to a fully or partially online one?

**Question 5:** How did the Mosaic Faculty Fellows program influenced your perception of “learning space?”

- Can you give an example from your teaching?
- How do you compare teaching in online or physical environments after participating in the Mosaic Fellows program?

**Question 6:** What aspects of the Mosaic Fellow training do you see yourself using in online teaching?

- Group work and collaborative technologies
- Active learning strategies
- Motivation
- Engagement
- Self-reflection
- Cognitive Load

**Question 7:** Is there anything you have not shared with me in this interview?

- Additional comments, issues, questions, examples

**WRAP UP**

*Thank the interviewee for his/her help with the study.*