Agile Course Design: Modeling Flexibility, Empowering Engagement, and Prioritizing Community

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The Agile Course Design Institute, created for faculty at a regional public university, utilized an agile thinking lens to model flexible, interactive learning. The Institute framework consisted of three core factors: sense of belonging, students' bandwidth, and interaction and engagement. Faculty participated in online synchronous and asynchronous settings to develop agile courses. In doing so, they gained insights into the experiences their students might have in remote learning. Examples from the Institute and participant work are explored through a "Why" (purpose/outcome), "What" (connections to the ACDI framework), and "How" (tools and strategies) structure.

The COVID-19 pandemic makes teaching more complex, requiring more needs analyses, creativity, adaptability, persistence, and grace. During Summer 2020, the Faculty Center for Teaching and Learning (FCTL) and the eLearning Office at Ferris State University collaborated to design and implement a virtual Agile Course Design Institute (ACDI) to support faculty as they faced pandemic teaching. Prior to the pandemic shift to remote teaching, our summer course design institutes were face-to-face. Faced with the need for change, we applied a modified version of McTighe and Wiggins's (2014) concept of backward design and Fink's (2003) framework for designing significant learning experiences. While desired outcomes had not significantly changed, participants' contexts (and ours) had. We had new challenges in determining what content and experiences to include. We sought to create an ACDI that modeled agile course design and teaching strategies, engaged faculty participants in experiencing and reflecting on these strategies as learners themselves, and empowered faculty to design and implement flexible, impactful learning experiences for their students.

In the pages that follow, we provide a brief description of the ACDI. We then share details on selected aspects of the ACDI using an organizing framework that clarifies specific outcomes and experiences, the ways these outcomes and

experiences connected to our ACDI framework, and the strategies and tools used to attain the outcomes.

Overview of the ACDI

The ACDI was designed for all full- and part-time faculty at a regional, four-year, public university in Michigan. The ACDI met synchronously via Zoom for two-hour sessions twice a week for four weeks. Participants also had access to online office hours, an online course in Canvas, and additional resources, including pre-recorded videos and curated readings.

One ACDI goal was to empower faculty to feel prepared to teach in and adapt to any format. To this end, we developed an ACDI framework that involved key concepts we wanted faculty to apply to their courses. We sought, first, to equip faculty with a strong foundation in course design principles. Here, we used McTighe and Wiggins's (2014) concept of backward design and Fink's (2003) framework for designing significant learning experiences.

Next, we engaged faculty in consideration of three factors that were both important in any course design and heightened by the pandemic. First was ensuring students felt a *sense of belonging*. Students, particularly students of color, who feel they belong, are integrated with a class community, and feel less alone in their struggles are more likely to succeed (Strayhorn, 2019; Tinto, 1993; Walton & Cohen, 2011). Second was attending to students' *bandwidth*. We used Verschelden's (2017) work and defined bandwidth to include cognitive load (from coursework and other life concerns), social-emotional demands, and technology needs. Third, we focused on designing interaction and engagement in the teaching and learning experience. We used Moore's (1989) framework of student interaction with content, with other students, and with the professor. We also asked faculty to use learner-centered active learning strategies (e.g., Freeman et al., 2014; Weimer, 2013) and build in opportunities for students to reflect on their own thinking and experiences. Last, we wanted faculty to integrate into their courses evidence-based strategies from the growing literature on the science of learning (see, for example, Karpicke, 2012; Kornell, 2009; Lang, 2016; Pascoe, Hetrick, & Parker, 2020; and Weinstein, Madan, & Sumeracki, 2018). We attended to both cognitive-oriented strategies (e.g., retrieval practice, spacing) and affective ones (e.g., managing sleep, stress). The ACDI sought to model these practices to help participants integrate them into their courses. Figure 1 shows the framework we used to guide faculty in agile course design for pandemic teaching.
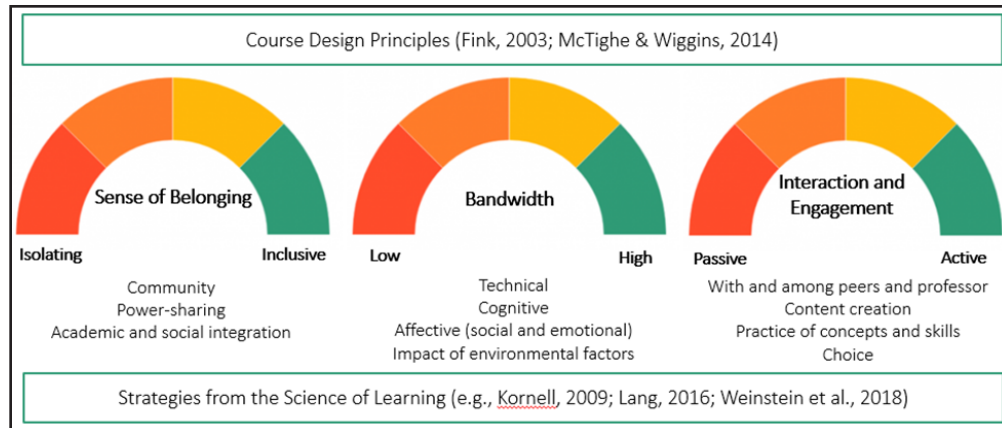
Figure 1: A Framework for Agile Course Design for Pandemic Teaching

The ACDI Process: Merging Purpose, Design Framework, and Tools

In addition to identifying the goals and outcomes we wanted faculty to experience or be able to achieve by engaging in the ACDI, we linked these goals to one or more aspects of the framework (see Figure 1). We also identified tools and strategies to help faculty meet these outcomes. These three distinct parts coalesced into what we came to call our "Why (Purpose/Outcome)/What (Connections to the ACDI Framework)/How (Tools and Strategies)" structure, as depicted in Figure 2.
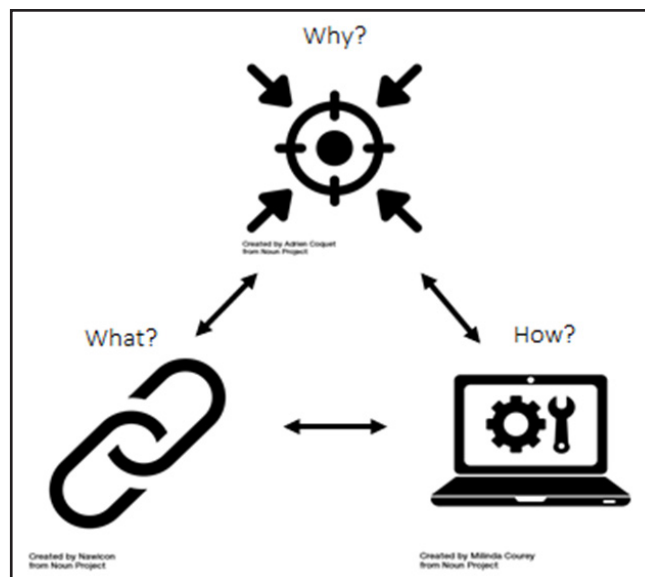

Figure 2: The "Why/What/How" Structure to Communicate Both the Design of the ACDI and the Work Completed by Faculty

Note: Figure created with images from *The Noun Project:* "Intention" by Adrien Coquet, "repair the computer" by Milinda Courey, and "link" by Nawicon.

Design and Implementation of the ACDI

After designing and facilitating the ACDI, the "Why/What/How" structure became a meaningful way to describe both the ACDI and the work done by faculty. Table 1 shows examples of content and experiences we included in the ACDI. Each ACDI purpose or outcome is aligned with core ideas from our framework (see Figure 1) in the "What" column. In addition, strategies and tools utilized to enable faculty to meet the learning outcomes are found in the "How" column. By engaging with these tools and strategies, faculty themselves became learners, thereby gaining increased empathy for students' experiences; faculty also discovered ways to implement the tools and strategies into their courses. Given the wide variety of strategies and tools available and limited time, it was not possible for faculty to engage with every possible tool and strategy available. Consequently, we provided a detailed resource, aligned with concepts from the science of learning, that described additional technology tools and strategies they could use to meet their own goals.

Table 1: Examples of the "Why/What/How" of the ACDI

Why (Purpose / Outcome)	What (Connections to the ACDI Framework)	How (Examples of Tools and Strategies Used)
Faculty will be able to analyze situational factors (Fink, 2003)	• Course design principles • Sense of belonging: Understanding students' characteristics and needs • Bandwidth: Understanding students' strengths and needs • Interaction and engagement: Making learning relevant to students' goals, needs, and interests	• A guided inquiry template

Why (Purpose / Outcome)	What (Connections to the ACDI Framework)	How (Examples of Tools and Strategies Used)
Faculty will experience being part of a learning community (Kuh, 2008)	• Interaction and engagement: Learning communities can increase participants' willingness to ask questions, give feedback, and participate • Sense of belonging: Learning communities promote belonging and safety	• Google Drive tools • Zoom breakout rooms • Padlet • Synchronous and asynchronous options for engagement in the ACDI

Faculty will experience and design for holistic learning (affective and cognitive aspects) (e.g., Immordino-Yang, 2016), and gain skills in using supportive tools	• Course design principles
	• Science of learning (e.g., stress): Pauses to attend to social-emotional aspects of learning that help mitigate stress and feelings of uncertainty (see Pascoe et al., 2020 for a recent review of this literature)
		• Cognitive
		  • Zoom chat
		  • Padlet
		  • Zoom polling
		• Affective
		  • Appropriate breaks
		  • Mentimeter
		  • Zoom chat
		• Skills
		  • Actively using various tech tools

Faculty will engage in self-directed learning	• Interaction and engagement: Need for active learning and respect for prior knowledge among adult learners (Friere, 2000; Knowles, 1984) • Sense of belonging: Setting goals and sharing power can be especially important for adult learners in fostering transformational learning (Knowles, 1984; Mezirow, 1985) • Science of learning (e.g., stress)	• Optional content/videos and supplemental resources • Participants were given choices for the work they would submit at the conclusion of the ACDI

Faculty Course Development

Our ultimate hope was that the ACDI would enable faculty to experience and then design a flexible, learner-centered, well-aligned course with both high expectations and high levels of care for students. Unsurprisingly, faculty who participated in the ACDI showed tremendous creativity, determination, and consideration for students through their emerging course design plans. Below, we use the Why/What/How structure to provide two examples of aspects of course plans developed during the ACDI. Names used are pseudonyms.

Master's Level Social Work Class

One professor, "Theresa," was developing plans for a master's level social work class. One of her goals was to enable students to engage with cognitively and affectively challenging content to develop their clinical skills - specifically, suicide assessments. Theresa recognized that having to learn content that was both academically and emotionally challenging would tax students' bandwidth and potentially add stress to students' already-complicated lives. Theresa had been adept at teaching this class face-to-face, where she could closely monitor and coach her students. While she was initially uncertain as to how she could replicate the supportive and effective strategies she used in face-to-face classes in a remote environment, she realized that small groups and Zoom breakout rooms would provide some of the tools needed for her students to succeed.

Developmental curriculum: Reading

A second faculty member, "Will," was developing plans for a developmental reading class. He wanted his students to gain specific literacy skills, build self-efficacy in reading, and feel more confidence overall. He recognized that building confidence entailed building skills and helping students feel a sense of belonging and community. Additionally, Will felt that fostering belonging would increase students' motivation, further increasing their success in the course and beyond. Like Theresa, Will had a history of successful face-to-face teaching. He had also taught   online but was concerned that teaching this class online would constrain students' ability to interact and create a community. To address his concerns and achieve his goals, Will chose to rethink his use of small groups, reaffirm his use of repeated assessments, and leverage interleaving to repeat content and practice.

Table 2 illustrates just one aspect of work done by each of these faculty members. The table summarizes a purpose they each had ("Why"), ways in which they

connected that purpose to the ACDI framework ("What"), and strategies and tools they discussed using ("How").

Table 2: Examples of the Why, What, and How of Faculty Course Designs

Why (Purpose/ Outcome)	What (Connections Faculty Made to the ACDI Framework)	How (Examples of Tools and Strategies Faculty Plan to Use)

Students will be able to conduct cognitively and affectively challenging clinical skills (suicide assessments)	• Bandwidth: Students' emotional responses to the content would likely tax their cognitive abilities to process the content and internalize the skills, and vice versa
	• Science of learning (stress): Students had numerous life stressors (e.g., jobs, families, commutes); physiological responses to stress create barriers to learning
	• Sense of belonging: Well-structured group work that attends to issues of inclusion can foster community and reduce alienation
	• Interaction and engagement: Facilitating skills practice, providing coaching, and integrating peer feedback
		• Intentional grouping strategies and group work
		  • Consistent, instructor-assigned small groups throughout the term
		  • Community-within-a-community
		• Zoom breakout rooms
		• Whiteboard apps for surfacing and sharing emotional reactions
		• Reduced synchronous learning time
		• Minute papers (to reflect on feelings that surface after encountering a suicidal client)
		• Providing "very timely feedback" and support as needed

Why (Purpose/ Outcome)	What (Connections Faculty Made to the ACDI Framework)	How (Examples of Tools and Strategies Faculty Plan to Use)
Students will gain self-efficacy in the discipline and confidence in their abilities to succeed in college	• Principles of course design: Situational factors analysis surfaced students' struggles with the transition to college, the need to develop goal-setting and time management skills, and challenges connected to the COVID-19 pandemic • Sense of belonging: Building a sense of community through methods including group work and peer feedback may positively impact motivation • Science of learning (spacing and interleaving): Building confidence through systematic, repeated practice and re-teaching	• Intentional, structured synchronous Zoom format • Assigning heterogeneous groups of mixed ability levels • Zoom breakout rooms • Collaborative annotations of readings • Pre- and post-assessments that enable students to identify their strengths and areas for growth • Giving students choices for how they may demonstrate their learning

Assessment of the ACDI

Separate from the frequent check-ins and invitations to the participants to provide feedback during the ACDI, we conducted an anonymous survey at the conclusion of the ACDI. Among the helpful feedback we received were the participants' qualitative comments. We share here feedback related to a broad theme of "faculty as learners."

Faculty noted that experiencing teaching strategies and tools first-hand, as learners themselves, was valuable. Comments included:

- "Seeing how the tools were used live in Canvas, Zoom and with link outs to tools was excellent experiential learning."

- "It was also helpful to see the different tech tools modeled and see how they work."
- "I really like the practical information on learning activities (science of learning) and new technology to help in the classroom."

Educational developers know from their own experience and from faculty they work with that engaging with peers from varied academic and professional backgrounds brings tremendous energy and wisdom to the work at hand. This, too, was the experience of the ACDI participants, as evidenced by feedback:

- "It was helpful to have time to talk with a partner about things going on in our courses."
- "The discussion with other faculty on how they are planning to work around the challenges presented by Covid [was the most helpful or meaningful]."
- "I have had a community of peers struggling together to do the best by our students, or employer, and our field of study."

Finally, among the most profound and gratifying pieces of feedback we received were these:

- "I'm challenged to be more open-minded and to see the learning experience through the student's eyes."
- "I feel more confident as a faculty, who is facing very different teaching situation."

Closing

While teaching in the best of circumstances requires a measure of agility, teaching during the pandemic has asked faculty and students to embrace agility daily in unimagined ways. Many of the circumstances faced pre-pandemic, such as uncertainties about individual wellness, access to technologies, unemployment, and family concerns were intensified and multiplied during the pandemic. The ACDI sought to help faculty prepare for change, plan for ways to teach and support students' learning under different and often difficult circumstances, and attend to critical elements of course design such as sense of belonging and community, engagement and interaction, pedagogies and best practices from the science of learning, and cognitive and social needs of students.

The need for this support of faculty and community in which they learn from and work with peers has not lessened with the availability of a COVID-19 vaccine. In

fact, the need seems even more palpable and persistent as we continue to live with COVID-19 variants, a changing landscape in higher education, dynamic social conditions, and changing student demographics.

The FCTL continues to support faculty. Recent efforts included the launch of a Faculty Support Community designed to provide a welcoming space for faculty to reconnect and share successes, challenges, and resources as we continue to navigate a changing landscape. We also facilitated a multi-week Learning Design Institute that deepened faculty knowledge and expanded integration of practices from the science of learning.

This and other work in the FCTL continue. We are inspired by faculty members' resilience, curiosity, and motivation to create for students equitable, engaging, and inclusive learning experiences that capitalize on all that we know now and continue to learn about how best to teach and advance students' learning and development.

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