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Resilient Pedagogy: Practical Teaching Strategies to Overcome Distance, Disruption, and Distraction

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RESILIENT PEDAGOGY

Practical Teaching Strategies to Overcome Distance, Disruption, and Distraction

TRAVIS N. THURSTON, KACY LUNDSTROM, CHRISTOPHER GONZÁLEZ, JESSE STOMMEL, LINDSAY C. MASLAND, BETH BUYSERIE, RACHEL WELTON BRYSON, RACHEL QUISTBERG, DAVID S. NOFFS, KRISTINA WILSON, REBECCA M. QUINTANA, JACOB FORTMAN, JAMES DEVANEY, BRIANA D. BOWEN, CHRISTINA FABREY, HEATHER KEITH, STEVEN R. HAWKS, KOSTA POPOVIC, ERIC M. REYES, JENNIFER B. O'CONNOR, KAY C DEE, ELLA L. INGRAM, CHRISTOPHER PHILLIPS, JARED S. COLTON, JENAE COHN, ELIZABETH WINTER, MICHELE C. CLARK, CHRISTOPHER BURNS, REBECCA CAMPBELL, KEVIN KELLY, MIRIAM MOORE, JESSICA RIVERA-MUELLER, KRESTEN ERICKSON, MAGGIE DEBELIUS, SUSANNAH MCGOWAN, AIYANNA MACIEL, CLARE REID, AND ALEXA EASON

Utah State University

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LAND ACKNOWLEDGMENT

We acknowledge that Utah State University and all in-state USU institutions reside on the original territories of the eight federally recognized tribes of Utah, that have been living, working, and residing on this land from time immemorial. These tribes are the Confederated Tribes of the Goshute Indians, Navajo Nation, Ute Indian Tribe, Northwest Band of Shoshone, Paiute Indian Tribe of Utah, San Juan Southern Paiute, Skull Valley Band of Goshute, and the White Mesa Band of the Ute Mountain Ute. We acknowledge the painful history of genocide and forced removal from this land. In offering this land acknowledgment, we affirm Indigenous sovereignty, history and experiences.

PRAISE FOR RESILIENT PEDAGOGY

"Both thoughtful and practical, this volume is a very welcome contribution to the discussion about higher education in the aftermath of the COVID-19 pandemic. The contributors generously share their hard-won lessons and innovative strategies, while avoiding either techno-solutionism or fearmongering. Although not blind to the impact of the broader systems and constraints that educators and learners operate within, this collection of chapters provides clear guidance to faculty on how they may navigate key pedagogical choices and apply specific guiding principles in order to design more flexible, inclusive, supportive, and resilient learning environments."

-Rajiv Jhangiani, Associate Vice Provost for Open Education, Kwantlen Polytechnic University

"Against the backdrop of a global pandemic, heightened visibility of racial violence, and an overnight shift to emergency remote teaching, "Resilient Pedagogy" answers the call for equitable and effective teaching practices during and between times of crisis. Full of research-based approaches and techniques that place student and instructor wellness at the heart of positive learning outcomes, this volume shines light on the possibilities that open up when we incorporate strategy, flexibility and empathy in our teaching. It also offers theoretical and practical perspectives from a range of disciplines and institutional types aimed at making sustainable changes, resulting in a resource that educators and educational developers will value for years to come."

-Tazin Daniels, Assistant Director, Center for Research on Learning & Teaching, University of Michigan

"The premise of this groundbreaking anthology—that resilient course design and teaching practices offer practical and pedagogically effective, innovative ways to continue to facilitate student learning during unexpected disruptions—is one of the most important lessons that everyone in higher education should be taking away from the COVID-19 pandemic era. This valuable new collection, chock full of eminently practical strategies and well-researched scholarship, should be in every college instructor and educational developer's teaching and learning library. And thanks to Resilient Pedagogy's open-access availability, it can be!"

-Jessamyn Neuhaus, Interim Director, Center for Teaching Excellence, State University of New York Plattsburgh; Author of "Geeky Pedagogy"

"This volume is certainly a welcome addition to the conversation about resilient pedagogy, and the collected essays explore an impressive array of approaches to teaching and course design, but the book is so much more than that as well! It is about hope and community and new ways to help our students learn during and beyond the pandemic. I learned a lot from the writers in this collection."

-Josh Eyler, Director of Faculty Development, Center for Excellence in Teaching & Learning, University of Mississippi; Author of "How Humans Learn"

RESILIENT PEDAGOGY: A FOREWORD

Jesse Stommel

On July 10, 2020, I [tweeted](#):

"Words I'd prefer never to hear again after the first half of this year:
Pivot
Resilience
Unprecedented
Continuity
Silver lining
New normal
Reopening
Social-distance haircut
Liability waver
Zoom"

I'm guessing that my resistance to at least a few of these words is obvious. Zoom is, quite literally, tiresome, and there is now copious research about "Zoom fatigue." When we're in rooms together (or even in traditional online courses), we aren't generally staring at close-ups of heads and torsos for hours on end. Being constantly framed by a camera (and in personal spaces) is exhausting, as is seeing ourselves in a sea of boxes arranged neatly and tidily into rows and columns. I still flinch at the word "reopening." Just over two weeks ago (from the day I wrote this), I got my first COVID vaccination shot. I'll get my second shot in less than a week. I've been "locked down," and more strictly than many, for over a year, because my mom is immune-compromised. The idea of "reopening," or "returning to normal," or whatever other colloquialism is favored on the day, is bewildering. I have no idea what I can do now that I'm vaccinated. I still haven't fully reckoned with or made sense of the last year.

My mom had a brain hemorrhage and a pulmonary embolism a few months before the pandemic. In March of last year, Hazel's preschool "pivoted" online. I've been teaching (at least partly) online since 2007. I still can't fathom the idea of online learning for a 3-year-old. My husband was laid off from his job in April. Our cat died of hypertrophic cardiomyopathy in July. That was just days before we moved cross-country, from Baltimore to Colorado, to be closer to my mom and the rest of our family. Throughout the first 9 months of the pandemic, I held open online office hours with my colleague Sean Michael Morris, where we were joined by 100s of educators from around the world. During one session, someone said, "if this is what teaching

continues to feel like, I'm not sure whether I want to be a teacher anymore." Those words continue to resonate.

My issue with the word "resilience" is that I believe the capacity for resilience is a point of privilege. This isn't to say we shouldn't encourage resilience, support students in their resilience, or design resilient pedagogies — so long as those pedagogies are flexible and can be adapted on the fly to meet the specific needs of the specific students we find ourselves working with at each of our institutions on any particular day. And we must leave space for a genuine acknowledgement and accounting for the real material circumstances and acute trauma teachers and students face. Today, this year, always, on a daily basis. Some of the students we work with are food-insecure, some are queer, some are homeless, some are being bullied by other teachers, some are Black or Indigenous, some are disabled and not receiving even close to adequate accommodations (or even compassion). So many educators are also struggling, and too often the word "resilience" can feel demoralizing for those folks barely able to get their basic needs met.

The work of resilient pedagogy, the work of Critical Pedagogy, is both utterly not practical, because it depends upon us showing up to the work of teaching with our full complicated, emotional selves, but it's also practical in the sense that there are specific things we can do tomorrow to make our institutions and the experience of learning more hospitable.

In her chapter at the start of this collection, Lindsay C. Masland writes, "I have wondered whether we need a new teaching approach called 'resilient pedagogy' at all." I would say that we don't, even as I'm honored to write a foreword for a collection with Resilient Pedagogy as its title. This approach isn't (and certainly shouldn't be) new. So many students were struggling before the pandemic, and those are the students who were most likely to have faced particular difficulties over the last year. There is nothing new, there should be nothing new, about a call for "resilient pedagogy." That this feels new is, perhaps, the greatest evidence we have for how ill-prepared teachers and educational institutions were for the pandemic. That this work feels new is the greatest evidence we have for how much harm was done to marginalized students for all the years preceding the pandemic.

What we need, and what this collection offers so vibrantly, is a thoughtful discussion of exactly these things, what students need, how students have been failed by our educational systems, and how we all need to respond in this and every other future moment of crisis. This is the note that the first chapter from Masland ends on: the task of counting the pandemic as "just one of many disruptions that have always conspired to threaten the most vulnerable of our students and to use the inevitability of these disruptions as the impetus for building an empowering and liberating learning environment for all." And this theme recurs throughout the chapters here.

In their chapter, Buyserie, Bryson, and Quistberg ask, "Can learning be more responsive to shifting material circumstances?" Colton and Phillips argue for a "proactive," not a "reactive" approach to design. Janae Cohn

writes about the importance of student development being recognized as a "process." And Rivera-Mueller and Erickson argue that, "curriculum is not a product that teachers can make and deliver to students. Instead, curriculum is a meaning-making process that involves teachers and students." Ultimately, this book is about "teaching the students we have, not the students we wish we had," as I've written with Sara Goldrick-Rab. It's about drawing students into the sometimes messy process of learning.

Resilient pedagogy means acknowledging that not all students will be able to meet us exactly where our institutions expect them to, and teachers won't always be able to meet students exactly there either. When the work is honest, as so many of the teachers in this collection show, it will look slightly different from one classroom to the next, from one teacher to the next, from one student to the next, from one embodied experience of learning to the next. That's the work of a resilient pedagogy — to look for gaps in our expectations, to wait patiently, to lecture more quietly, to listen, to anticipate rather than accommodate, to offer a flexible series of invitations.

INTRODUCTION

Travis N. Thurston

It's The Hope That Kills You

"Teaching is a radical act of hope. It is an assertion of faith in a better future, in an increasingly uncertain and fraught present. It is a commitment to that future even if we can't clearly discern its shape." -Kevin Gannon

On a lazy Wednesday evening in March 2020, I had just cracked open my new copy of *Radical Hope* (Gannon, 2020) and was highlighting this powerful passage when the report broke on the TV saying that a player for the Utah Jazz had tested positive for COVID-19. In preparing to write this introduction over a year after that night, I opened the book again to find the Gannon quote to include in this introduction. And while I love this quote, seeing that page again and thinking about that moment brought back a flood of emotions this past year has presented.

After underlining the three lines of text in bright, fluorescent yellow, the highlighter mark in my book detours and slowly meanders down two more lines on the page as if to represent the shock of the situation pulling me away. However, as eerie as the detour of my highlighter is to see all these months later, perhaps most interesting is that the highlighting stops on the word "believe" in the middle of a sentence two lines below. I don't know how long I left that highlighter pressed on the word "believe," but the fluorescent ink bleeds through several pages.

Seeing "believe" highlighted on that page reminds me of the "believe" sign that the fictional coach, Ted Lasso, tapes above the door of his office in the comedy series on Apple TV. The series is about an American college football coach who is hired as the manager of an English Premier League football club (which is actually soccer in the US). The show portrays the protagonist as an unsophisticated Midwesterner who is out of his depth as he attempts to coach a professional sport that he barely understands. Ted's endearing ability to find success by clinging to his hopeful, human-centered approaches (his unique methods range from secretly baking his boss her favorite treats to coaching his MVP on how to date someone he actually cares about) over counting wins and losses resonates with me. Despite the many barriers and conflicts that arise, his approach remains deeply rooted in demonstrating compassion, care, and respect for his colleagues at every level. There's something that we can learn from this in education.

In August of 2020, I had three of my four kids at home. One was engaging in online 7th grade middle school courses, one in a remote 5th grade elementary class, and one in a remote kindergarten (the youngest isn't in

school yet but loved any chance she had to "Zoom bomb" her brothers). It was clear that we were all struggling to keep our heads above water, but we were privileged enough to have what we needed to make it work. At one point my kindergartner, who absolutely loves his teacher, asked me, "Do teachers get teached how to teach?" His question made me smile, but it also reminds me that the reality in higher education is that a large majority of those who teach courses haven't had any formal teaching training. Even for those of us who have been formally trained, I'm the first to acknowledge that teaching is hard. For me, being a teacher is more than a profession because teaching, when done well, is a craft that requires ongoing reflection and improvement. Teaching is a journey that is nuanced and ever-changing, not because of distance, disruption, and distraction, but because teaching involves humans—humans who have lives outside of the brick and mortar (or digital) walls of the classroom, who are motivated at times, and who are distracted at times. However, it's the humanness that makes teaching so fulfilling. Connecting with our students, cultivating their interest in our disciplines, and helping them discover what sparks their curiosity is at the heart of what we do as teachers. Teaching is hard at the best of times, but when we are forced to change instructional approaches, modalities, and locations amid a global pandemic and social unrest, it's, well, incredibly difficult.

We Are All Teachers

I identify as a teacher although I don't technically have teaching in my title or my job description. I tend to use that term loosely to describe anyone who is committed to improving teaching and learning. Instructional designers are teachers. Librarians are teachers. Faculty members are teachers. Perhaps I take that perspective because my own professional pathway has led me to hold titles from high school teacher to visiting professor, from instructional designer to faculty developer and coach. Whether in a traditional teaching role or in an alt-ac (Kelly, Linder & Tobin, 2020) or academic adjacent position, there are countless individuals at every institution who care deeply about teaching and learning, and all of us are teachers. And as teachers, we all have a varying number of individuals who are in the role of student. As an instructional designer, I am often in the position where faculty members are my students, and I'm committed to teaching and reaching the students I have in that moment and in that context. One thing I love about the collaborative work of an instructional designer is that some days I get to have deep discussions about pedagogy and learning theory while reflecting on options for implementing meaningful learning activities for a particular group of students, and some days I get to take the time to sit down with another human, acknowledge the hardships and setbacks they're experiencing, and reaffirm that they don't have to do it alone. The work of teaching connects deeply to the work of resilient pedagogy because they both rely on relationship building and interactions between teachers and students.

When I think about the work of teaching and these interactions, I like to picture a learning space that allows engagement with content and provides support for the humans in that space to engage in discourse and inquiry. I originally came across the term *architecture of engagement* in a piece by Riggs and Linder (2016)

who describe it as a frame for the design and facilitation that's required in successful online courses. The authors argue that teachers should intentional design learning environments (whether brick-and-mortar or digital spaces) that support learning, and then we have to inhabit those spaces and engage with our students. Like other terms in education, *architecture of engagement* is a borrowed term from another field actually describing the design of literal buildings. From the literature in that field Dotson (2013) argues that the design of space should "center human lives within meaningful contexts of engagement" (p. 140) and allow for "shared emotional connection among members develop[ing] from the frequency and quality of social interactions as well as experiencing shared events and feeling as if they and others are personally invested in the group" (p. 145). It's hard to believe he's describing a building, because it sounds like he's describing my ideal classroom community. Centering human lives around meaningful interaction is the work of teaching, and it's the work of resilient pedagogy. Our structures in education need to be designed and adapted by focusing on the humans who will inhabit them.

An architecture of engagement is only complete when individuals connect with each other in learning communities. It's essential that we are inviting all of our stakeholders into these structures and that they have an equitable voice. Each of us play a valuable role regardless of our context as teachers, and it takes community and collaboration to accomplish the work of resilient pedagogy. We hoped to model the value of our different contexts in compiling this collection. We started by bringing together a group of three editors who represented different identities and positionality; we collaborated as an instructional designer, a librarian, and a faculty member in compiling this open access volume. Our purpose wasn't to create a "new" definition of resilient pedagogy or to be the only perspective, but to allow authors to explore the emerging contexts and implications this past year has brought to the forefront of conversations in higher education. Many of the issues surrounding distance, disruption, and distraction in education weren't caused by the pandemic, but this past year has made us keenly aware of their existence and calls us to action to address them head on. As we reflectively and intentionally improve our own practice as this volume highlights, we will find that the heavy lifting of resilient pedagogy requires all of us. Not students only. Not professional staff only. Not faculty only. All of us. Together. As a team.

Finding Hope in Teaching: Resilient Pedagogy

Which brings me back to Ted Lasso. In the season finale, Ted becomes acquainted with an English cliché: "It's the hope that kills you." His team is facing relegation, and fans and players alike have decided not to believe their team can beat the best team in the league in their final game. The phrase isn't unique to this TV show, and in fact, it's used often by fans to describe that while they want their team to succeed, if they don't set their expectations too high, then they won't be disappointed when their team fails. After a traumatic year like we experienced in 2020, it might be easy to adopt that mindset. We mourned the loss of classes we hoped to teach; loss of connection with students, colleagues, and friends; loss of good health, or additional health

complications; loss of black lives; loss of income; loss of professional opportunities; loss of loved ones and community members; and perhaps a loss of hope. I have felt the sting of trauma this year, and at times, it has made me feel like maybe it really is the hope that kills you. I'm still processing it all, and I still don't know exactly how we will collectively process all the trauma and address the ongoing trauma that still exists, but we have to acknowledge that it's there and that it has impacted us all in varying degrees.

In considering all that we've lost, I've also been wrestling with what resilient pedagogy is and what it is not. Resilient pedagogy isn't a silver bullet, and it's not a cure for the trauma, but I do think it centers on believing in a brighter future. It's been helpful for me to remember that teaching is not only an act of radical hope, but it's also an act of care. As bell hooks (2003) so eloquently puts it, "When teachers teach with love, combining care, commitment, knowledge, responsibility, respect, and trust, we are often able to enter the classroom and go straight to the heart of the matter, which is knowing what to do on any given day to create the best climate for learning" (p. 134). For me, that means that the work of resilient pedagogy makes us vulnerable to heartbreak and disappointment because we know we can create a better future for our students one interaction at a time and that we will fail along the way. It means that we recognize the inequities that exist in our current structures and that we not only work to adapt and transform those structures but continue to visualize how that architecture will need to take shape and be molded moving forward. It means that resilient pedagogy is "less like a peak that one summits, and rather, the ongoing struggle of setbacks and brief vistas while traversing the mountain ridge" (Thurston, 2020, p. 167). In other words, the work of resilient pedagogy is messy, iterative, and continuously reflective by emphasizing process over product.

To tie this all together, as Ted Lasso speaks to his team before their final match of the season, he tells them that he really doesn't like the phrase "it's the hope that kills you" because he believes in hope. He believes in the people around him, and he believes that they will succeed if they believe in each other. It can seem a bit cliché, but he goes on to challenge the English phrase with his own colloquialism, "I think it's the *lack* of hope that comes to get you." That phrase captures my view of resilient pedagogy. We have to acknowledge the inequities, the struggles, and our own failings to provide a frame for us to see where we can continue to improve. But we can't stop at simply acknowledging the issues before us, we have to take action. That is the work of resilient pedagogy, and I hope this collection not only frames areas where we should focus on improvement but also provides helpful strategies to support the work that lies ahead. I have to believe that, regardless of the role that I play in teaching and learning, resilient pedagogy is a radical act of hope and care. And I believe that resilient pedagogy is meaningful because it's a commitment to supporting students, to supporting teachers, and to supporting each other one small step at a time as we engage in this work together.

Structure of the Volume

Resilient Pedagogy is structured with two main sections: one driven by theory and foundations, and one driven by reflection and practice. Each chapter in this collection offers a glimpse into practical and actionable

approaches that each of us can adopt, adapt, or combine with our current practice to continually improve what we do as teachers. The authors of each chapter speak as teachers in their own context whether their role is a faculty member, a faculty developer, a student, an administrator, or some combination of multiple roles. I hope this volume is received as the beginning of an ongoing dialogue not as an ending point, and that the different perspectives throughout the collection speak to you like they have spoken to me.

Lindsay Masland lays the foundation for the collection in Chapter 1 by exploring how Self-Determination Theory (SDT) can provide a frame for engaging our students with resilient course design. Considering the relationship between teacher choices, student motivation, student engagement, and student learning success, teachers are called to support student needs regardless of modality. Masland shares how she applied the principles from SDT and embedded them in her syllabus or other aspects of her course including graphic weekly schedules, content menus, and tiered assessments with tiered feedback plans. The chapter concludes with Masland addressing the realities of disruption and calling us to action in the work of resilient pedagogy.

In Chapter 2, Beth Buyserie, Rachel Bryson, and Rachel Quistberg expand on the concept of disruption by asking if we can change the negative connotations often associated with the term and frame it as a productive opportunity to intentionally equitize education. By arguing that resilient pedagogy requires action and critical reflection, the authors frame a critical approach to disruption and challenge existing structures and question traditional, inequitable applications of teaching across disciplines. The authors present an approach for continual refinement through a cyclical process of five actions: question, seek, pause, reflect, and revise. They conclude that productive disruptions must be grounded in equity and that resilient pedagogy isn't a box that we check but a process that we must continually undertake.

David S. Noffs and Kristina Wilson in Chapter 3 introduce the concept of optimal online learning (OOL) and compare it to the emergency remote teaching that became prevalent in the "Great Onlining of 2020." The authors discuss several concepts that contribute to OOL including learner-centered teaching, community building, and meaningful self-reflection, among other ideas. The authors argue that an overdependence on synchronous webcam lectures replicates a banking model of education, and they offer a number of learner-centered approaches aligned with adult education strategies that serve to optimize courses. The authors conclude that the resilient strategies of OOL have the potential to support the underrepresented students who are most in need of the engagement inherent in these approaches.

In Chapter 4, Rebecca M. Quintana, Jacob Fortman, and James DeVaney highlight the suboptimal conditions of emergency remote teaching addressed in Chapter 3 and then synthesize definitions and perspectives on resilience from various disciplines to identify three guiding principles: designing for extensibility, designing for flexibility, and designing for redundancy. These principles provide the basis for what the authors introduce as the Resilient Design for Learning (RDL) framework which advances foundational concepts from universal design for learning aligned with systems thinking and other foundational concepts. The authors also draw insights from their "Resilient Teaching Through Times of

Crisis and Change MOOC" to provide actionable steps for teachers to consider in their own courses. In conclusion, the authors posit a vision for resilient teaching for the future of higher education.

Briana Bowen expands on the vision for the future of disruptions in Chapter 5 to consider how we can build more resilient university communities. Bowen provides a practical toolkit for teachers to consider the 4R resilience modeling framework with a unique perspective from the intelligence community. Each section includes self-assessment questions for us to consider each of the 4 areas: resistance, recovery, retention, and resurgence. Drawing on anticipatory intelligence, Bowen concludes that we as humans struggle to appreciate threats to disruption until they become a reality for us and encourages us to be proactive in resilience building.

Chapter 6 by Christina Fabrey and Heather Keith conceptualizes Resilient and Flexible Teaching (RAFT) as imagery for navigating rough waters in basic survival. The authors explore flexibility in teaching from reaching students across modalities with methods ranging from HyFlex to ungrading approaches, both of which also allow teachers to meet students where they are. The authors also explore how transparency in assignment design can help students be successful, and they include tips like avoiding proctoring software to surveil students which can cause harm and break trust with students. Fabrey and Keith conclude their chapter by emphasizing empathy and contemplative practices that put student wellness at the forefront of our work as teachers.

In Chapter 7, Steve Hawks addresses the pedagogical innovations required to continue efforts of global engagement during worldwide disruptions. Hawks defines the purpose of global engagement, in part, as creating connections and removing barriers for students in an increasingly connected digital world. COVID-19 brought international travel and study abroad programs to an abrupt halt, removing opportunities for faculty engagement and participatory approaches across cultures and borders. Hawks explores transformative strategies to further the work of global engagement, including virtual study abroad and domestic study away, and argues that these options can allow students who are typically left out of global engagement programs due to system inequities to access the full benefits and enhanced outcomes in a connected world that will undoubtedly face disruptions in the future.

Section One of the collection concludes in Chapter 8 with authors Kosta Popovic, Eric Reyes, Jen O'Connor, Kay C Dee, and Ella L. Ingram addressing adaptable courses. The authors define four core principles for adaptable courses: detailed planning, communicating strategically, scheduling regular interactions, and embracing alternative assessments. The authors further detail the offering of their Creating Adaptable Courses training at their institution and how they intentionally designed not only the content but the community building and support aspects of their training to align with their institutional culture. They conclude their chapter by sharing both the benefits and the challenges from their experience and by providing specific examples of reactions from faculty who participated in the event. These reactions provide insight for others adopting the core principles or supporting other teachers in engaging in similar training.

Section Two opens with Christopher Phillips and Jared S Colton in Chapter 9 addressing a new normal for inclusive online learning with consideration for the disproportionate impacts on students of color and students with disabilities. The authors point to the principles from universal design for learning that when we create usable and accessible content, it benefits all students not just those with disabilities. Phillips and Colton define their use of the terms accessibility, usability, and inclusive design and posit that our course design should be proactive rather than reactive when disabilities are disclosed. Specifically, the authors explore two distinct accessibility practices that can have overarching benefits to all students: providing closed captions for instructional videos, and converting PDF content to HTML content. They provide insight for tools, resources, and support in making our teaching more resilient to change and becoming better prepared to consider the diverse needs of our students.

Chapter 10 begins with Jenae Cohn advocating for the development and use of online tool kits to support and orient students to techniques, tools, and resources available to build academic skills like reading, note-taking, and researching. Cohn provides specific examples of the type of content and resources that can be included in toolkits for digital literacy and nods specifically to the need for students to develop critical literacy skills necessary for the future, like identifying reliable sources online. In conclusion, Cohn recommends consulting with others in the campus community, from librarians to instructional designers, that can support these efforts and supporting our students.

In Chapter 11, Elizabeth Winter, Michele Clark, and Chris Burns build on supporting student skills in our classrooms as they describe Team-Based Learning (TBL) with the hallmarks of active learning, application of knowledge, and social engagement with a small group. Specifically, the authors frame the need for appropriately formed and managed teams, learner accountability, team assignments, and timely feedback to support students in individual and collective ways in a course. These elements build to the three phases of TBL that can be implemented in an iterative cycle to help students develop important skills that can be used across disciplines and in the workplace.

Rebecca Campbell and Kevin Kelly, authors of Chapter 12, build on concepts from the previous chapter to introduce Virtual Homework Sprints (VHS) which allow students to gather virtually and accomplish academic work, similar to work sprints in the tech industry. Campbell and Kelly offer structured formats to conduct a VHS session and then share their reflections with specific insights on their own implementations of the practice. The authors also connect VHS to other educational practices like pedagogies of care, providing a sense of belonging, and supporting self-regulated learning. Campbell and Kelly posit that VHS offers opportunities to maximize student-faculty interactions, foster student accountability, and increase student participation in equitable and flexible ways.

In Chapter 13, Miriam Moore addresses online discussions by challenging us to "think outside the PPR (prompt, post, reply) box." Moore explains that she wanted her students to engage in dialogue in the online discussion forums, so rather than asking "known-answer" questions, she prompted the students with

multiple entry points into the conversation, offering both lower-level tasks and higher-order engagement opportunities. She also considered her own instructor presence by intentionally engaging students with guiding questions that allowed the learners to broaden their dialogue. Moore concludes her chapter with specific examples of an implementation in a first-year writing course and gives recommendations for other courses as well.

Chapter 14 with Jessica Rivera-Mueller and Kresten Erickson highlights the value of student partnerships and co-designing curricula. In this chapter, the authors engage in a reflective dialogue, discussing their creation of a discussion assignment and how they structured their partnership to co-teach a literature course for pre-service teachers. Their reflection balances their struggles and successes of their partnership with the added complexities resulting from a change in course format due to the COVID-19 pandemic. Rivera-Mueller and Erickson provide recommendations for others who are considering being part of a student partnership and discuss how to navigate the uncertainty of roles and expectations when collaborating.

Concluding the collection, Chapter 15 details a partnership between students, staff, and faculty between the authors Maggie Debelius, Susannah McGowan, Aiyanna Maciel, Clare Reid, and Alexa Eason. The authors detail a shift in their planned Students as Partners initiative to include student voices in their summer institute with Eason providing a reflection of the student panel which was the highlight of the event. Maciel also reflects that students continued to play a key role as they participated remotely in other summer events to support faculty. The authors conclude their chapter by recognizing that bringing students to the table as partners in teaching wasn't a revolutionary process but an evolutionary one that emerged in a time of critical need. In this final chapter of the collection, Reid pragmatically reminds us that "things are different now."

Conclusion

Resilient Pedagogy: Practical Teaching Strategies to Overcome Distance, Disruption, and Distraction offers the first comprehensive collection on resilient pedagogy framed in the context of the COVID-19 pandemic and the social justice movements that have swept the globe. As a collection, Resilient Pedagogy is a multi-disciplinary and multi-perspective response to actions taken in different classrooms, across different institution types, and from individuals in different instructional roles. Regardless of your own position or role as a teacher, we invite you to take the concepts, strategies, and ideas presented in this volume and find ways to apply them to your own context. We also encourage you to share them widely with others. Consider connecting with us on Twitter (@ResiPed) and use #ResilientPedagogy as you share insights and build upon this collection. My hope in compiling these chapters is that we can move forward by engaging in the work of resilient pedagogy together.

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PART I
THEORETICAL FOUNDATIONS AND APPROACHES

RESILIENT PEDAGOGY AND SELF-DETERMINATION: UNLOCKING STUDENT ENGAGEMENT IN UNCERTAIN TIMES

Lindsay C. Masland

When the COVID-19 pandemic hit in spring of 2020, like many educators, I experienced a definite disruption in the structure and plans I had designed for my courses. I was teaching a mix of graduate and undergraduate classes—some with as few as seven students, others with as many as 98, some upper-level skills-based courses, others in the broad general education arena, but all of them designed exclusively for face-to-face delivery. In fact, due to some long-standing institutional prejudices against online instruction, the opportunity to teach in a mode other than face-to-face had never materialized over the 10 years I had taught in higher education. Even a one-time request to teach a summer class in the fully online space was denied, so I should have been wholly unprepared to make the "emergency pivot" to virtual, remote instruction. However, despite no real practice in non-face-to-face modalities, I didn't find the pivot to be particularly stressful. I hesitate to make this claim in print, and I understand the immense privilege I have in so doing (e.g., highly functional Wi-Fi, a corner of my bedroom where I could add a desk, a partner with a flexible work schedule and the capacity to share in childcare duties, job security via tenure), but it's true—it only took about a day of strategizing for each of the four different courses I was teaching to figure out how to make the transition.

As a faculty developer, however, I realize that my experience with making the emergency pivot was far from the norm. Like everyone else at every Center for Teaching and Learning around the country, our faculty developers and instructional designers were positively slammed by unprecedented demands on their time as these pedagogical support staff scrambled to provide the resources and consultations needed by (what seemed like) nearly every instructor on our campus. This disparity in experience—between my own relatively smooth transition and the apparently bumpy transition for many of my colleagues, despite none of us being particularly experienced in these spaces—begs the question: why did this happen? Why does a disruption manifest as a blip for some professors and as an insurmountable barrier for others? I think the answer lies in the extent to which professors design their courses to reflect principles of resilient pedagogy.

Interestingly, before the COVID-19 pandemic, use of the term "resilient pedagogy" was minimal. In fact, of the approximately 3,140 results produced via a Google search of the term at the time of writing, only 26 of them existed before March of 2020. Further analysis indicates that the term did not show an appreciable bump in searches until the end of April of the same year. This pattern suggests that, prior to the COVID-19 pandemic, instructors probably were not designing courses in accordance with any sort of *intentional* resilient framework. This is certainly true for me—even as a faculty developer with a PhD in educational psychology, I did not hear this term until the spring of 2020. However, upon reflection, I realized that I have designed my classes with resilient principles in mind for years without realizing it. Instead, likely due to that background in educational psychology and my pedagogical and scholarly interests concerning teacher effects on student success, I had designed my courses according to evidence-informed principles of student motivation and engagement—principles that happen to lead instructors into designing courses that are wonderfully resilient.

Self-Determination Theory as a Tool for Maximizing Student Engagement

Motivation vs. Engagement

It may seem odd to proceed with a chapter about resilient pedagogy without first defining the key construct of the term, but that is exactly what I am going to do. This approach seems better aligned with my own exposure to and embrace of the term. None of what I have designed in my own classes or supported colleagues to design in theirs was created to be intentionally resilient, so it would be inaccurate to make that claim here. Any apparent resilience in my pedagogy has been a side effect of designing for student motivation and engagement, so that is the appropriate starting place for our examination of the ways in which motivation and resilience intersect.

A first appropriate step, then, is to clarify what I mean when I use the terms "motivation" and "engagement." There is disagreement in the literature as to whether these terms can or should be used interchangeably (Fredericks et al., 2004), but for the purposes of this chapter, I will distinguish between the two. I define "motivation" as an *internal drive* that gives energy and direction toward accomplishing a goal. In contrast, I define "engagement" as *evidence* that an individual has the motivation to move toward a goal. From this perspective, as teachers, we should focus our appraisals of student motivation and engagement squarely on the engagement side of things, as this is the portion of the continuum that we can directly observe. Furthermore, given that engagement positively predicts both academic achievement and well-being (Fredericks et al., 2004), we should focus on pedagogical choices that have been shown to enhance engagement.

Figure 1
Relationship Between Motivation, Engagement, and Student Success.

Tripartite Engagement

I also think it's helpful, from both a scholarly and practical perspective, to subdivide engagement into its constituent parts. That is, although teachers might frequently lament a generalized "lack of student engagement" in their classes, the actual target of such lamentations differs widely from teacher to teacher. Some teachers wonder why students turn off their cameras during synchronous virtual meeting times. Others bemoan half-hearted responses in discussion forums. And teachers have always expressed irritation at students who miss deadlines, who neglect to do the reading, and who ask questions that are answered in the syllabus. However, all of these apparent student shortcomings reflect a good bit of variation in this generalized concept of student engagement. As such, a more nuanced understanding subdivides the construct into the three components of behavioral engagement, cognitive engagement, and effective engagement (Fredericks et al., 2004).

Behavioral engagement includes clear participation in the learning environment that indicates persistence, effort, and other behaviors that lead to learning success. Depending on the mode of the course, this could include asking and answering questions, engagement with resources in a learning management system (e.g., page views), or submitting assignments on time. In contrast, cognitive engagement is aligned to strategic and self-regulated actions that indicate higher-order thinking. Some forms of cognitive engagement are easily observable (e.g., submitting quality work, selecting challenging options, responding in generative ways), whereas others might not be (e.g., making private connections between ideas, engaging in metacognitive reflection, choosing to allocate mental effort in beneficial ways). Different still is emotional engagement, which involves an affective connection that leads to interest in, value for, or curiosity about the course. As is the case with cognitive engagement, emotional engagement is sometimes easily observed (e.g., when a student discusses connections between course content and personally relevant situations) and sometimes private to the student (e.g., when a student experiences a flow state while working on course tasks).

Self-Determination Theory

I stated above that student engagement can be viewed as the evidence that a student is highly motivated to succeed at a particular learning task. The temptation here, then, is to view student engagement as out of our hands. That is, if student success is the product of student engagement, and if student engagement is the product of internal student motivation, then responsibility for the whole darn ordeal is simply not our problem (Figure 1). However, this approach represents a view of motivation and engagement that is both depressing (i.e., you mean there's nothing I can do about an "unmotivated" student?!) and one that is theoretically and empirically incorrect. There are many motivational models that could shed light on this conundrum, but a favorite of those seeking to understand the interplay between the environment and the student's internal motivation and engagement is self-determination theory.

Self-determination theory (SDT) is a metatheory of motivation covering everything from intrinsic versus extrinsic motivation to causality attributions, but for our purposes, the most relevant corner of SDT is the basic psychological needs subtheory. The needs subtheory assumes that we are growth-oriented individuals who produce high levels of goal-directed behavior when our psychological needs are met. According to Deci and Ryan, "needs specify innate psychological nutrients that are essential for on-going psychological growth, integrity, and well-being (2000, p. 229) and include feelings of competence, relatedness, and autonomy. An individual's need for competence concerns the hope that our efforts toward growth and well-being will be effective. When competence needs are met, we believe that we have the skills needed for mastery, and we experience a sense of confidence regarding the success of future possible efforts. Our need for relatedness manifests as a desire for security and support. When we feel connected to others, we believe that our goal-directed efforts will succeed. Lastly, our need for autonomy concerns the agency we have in our decision making. Individuals whose needs for autonomy are fulfilled feel that they are able to make choices that are well-aligned to their identities and that will lead to personal growth (Deci & Ryan, 2000). Research indicates that needs fulfillment leads to desired academic outcomes, including enhanced academic achievement and long-term retention of content and skills. These desirable academic outcomes are often preceded by indicators of all three facets of academic engagement, such as enhanced persistence (i.e., behavioral engagement), enhanced depth of processing and creativity (i.e., cognitive engagement), and enhanced enjoyment of work and general school satisfaction (i.e., emotional engagement; Guay et al., 2008).

Although SDT pertains to characteristics of an individual's internal motivational state, research indicates that the extent to which these internal needs are fulfilled is largely governed by environmental inputs (Figure 2). For example, research suggests that students report the highest levels of competence when they are in learning environments that are characterized by clear expectations and consistency of structure (Ryan & Deci, 2020). Frequent informational supports (e.g., clear information regarding assignments and grading structures) and the use of mastery feedback (i.e., feedback that feeds forward into success on future academic tasks) enhance students' feelings of competence as they engage with appropriately challenging learning tasks. The idea is that

highly structured learning environments provide scaffolding that enhances a student's sense of control, which leads to feelings of competence.

Figure 2
Relationship Between Teacher Choices, Motivation, Engagement, and Student Success

Relatedness needs can also be fulfilled by the environment, as students who feel supported by their teachers show increased levels of all three types of engagement (Fredericks et al., 2004). Instructors in the online environment have long known about the importance of relatedness, focusing on relationships between students, between students and teachers, and between students and the content (Moore, 1989). Of these different interactions, student–student relationships and student–teacher relationships are consistently the most predictive of student success (Bernard et al., 2009).

Lastly, fulfillment of autonomy needs also leads to enhanced academic success, including increased self-regulation, interest/enjoyment, and perceived competence, as well as decreased anxiety (Black & Deci, 2000). Students who experience thwarted autonomy needs show decreased problem solving, creativity, and depth of processing (Grolnick & Ryan, 1987). To enhance feelings of autonomy, teachers can provide meaningful choices in the learning process such that students feel invited to and not coerced into completing learning tasks. When students feel in control of the learning environment, they experience enhanced competence (Jang et al., 2010). Autonomy-enhancing teachers also acknowledge that the learning process can involve feelings such as anxiety, irritation, or disappointment, and they are supportively responsive to such student reactions (Ryan & Deci, 2020).

Intersections Between SDT and Resilient Pedagogy

If an instructor designs a course to maximize student perceptions of competence, relatedness, and autonomy, they will be well on their way to designing something that is resilient to disruptions, even if that isn't their original intention. As mentioned previously, this was my experience. Well before the COVID-19 pandemic, I designed my courses with motivation and self-determination theory in mind. For example, my classes were characterized by a high level of student choice. My rationale was that different students find different things interesting, so if I want to use interest as a motivational lever, then I'm going to need to have a lot of options. I also realized that students seemed to want to work harder for people they like (both in terms of the instructor

and in terms of their classmates), so I had incorporated a lot of ways for us to get to know each other, both as people and in relation to our specific course content. I also knew that if I wanted my students to try hard things and to persist when the going got tough, I needed to have a strong support structure in place —copious information about how to succeed in my course and mastery feedback spurring students forward from assessment to assessment.

Before the pandemic, I had experienced reinforcement for this method of course design—my student and peer evaluations were high and mentioned things like "there to help you every step of the way" and "not easy but put together so well." And although I didn't realize it at the time, it was quite resilient to disruptions. For example, if I had an unexpected snow day or a last-minute invitation to give a talk, this never derailed my courses. I had so many options already in place, both in terms of content we could learn and in terms of exactly how we could learn it, that a disruption may have taken one or two options off the table (e.g., no face-to-face lecture of the day's content), but left others intact (e.g., virtual exploration of the same content, in asynchronous groups using a collaborative Google Doc). So, when COVID-19 hit and the emergency pivot happened, all I needed was a few tweaks to maximize the competence, relatedness, and autonomy in our new learning environment, and we were up and running—choices that I now realize are fully compatible with the resilient pedagogy approach.

Although the precise origins of the term "resilient pedagogy" are unclear to me, I recall a flurry of "academic Twitter action" in the spring and summer of 2020 as faculty developers and instructional designers hurried to frame out an approach to course design that would be resilient to disruptions, both of the pandemic and less-life-altering variety. A variety of adjectives were bandied about—flexible, adaptive, agile, adaptable, pivotal— but the aim was clear: We were searching for a pedagogy that wouldn't crumble when facing a change in modality. According to Josh Eyler, who is quoted in the most popular blog post on the topic, "resilient pedagogy is a course design strategy that helps make your classes, assignments, and assessments as resistant to disruption as possible. The way to think about this is regardless of which modality you're teaching in—online, in-person, or blended—you're designing one time and one time only" (Gardiner, 2020). I'll admit that I think this is a bit of an oversimplification—even in pre-pandemic times, I never "designed once." Designing according to SDT requires instructors to view their students as the complex individuals they are, meaning you have to design for lots of possible identities and lots of possible situations, if you are truly designing to maximize competence, relatedness, and autonomy of the diverse students we teach. As such, I think that resilient pedagogy is less about designing courses with disruption in mind, but instead, about designing technology-enhanced courses that are as mode-agnostic and needs-centered as possible. To this end, the remainder of the chapter will explore the various choices instructors can make in terms of course organization, instruction, and assessment that can lead to maximized student need fulfillment while also maintaining a clear focus on flexibility and resiliency in teaching (Figure 3). For each of the following sections, several practical teaching ideas will be offered, and I will draw clear connections between those ideas and the fulfillment of competence, relatedness, and autonomy needs. I will also give examples of how many of the

pedagogical strategies can manifest in either more resilient or a more constrained presentation, depending on design choices made at the outset.

NOTES

Use this space to plan how you might implement these concepts into your own teaching and courses:

Consider sharing your own insights on Twitter using #ResilientPedagogy

Resilient Course Design

Course Organization
that provides a clear path to mastery of learning objectives

Instructional Strategies
that build community for collaborative pursuit of learning that matters

Assessment of Learning
that informs students and teachers of progress towards mastery

Fulfillment of Student Needs

Competence
Sense of control over and mastery of the learning process

Autonomy
Sense of agency and self-direction in the learning process

Relatedness
Sense of connectedness and support in the learning process

Student Engagement in Meaningful Learning

Behavioral
Engagement via on-task behaviors in the learning environment

Cognitive
Engagement via deep processing that leads to high-quality learning

Emotional
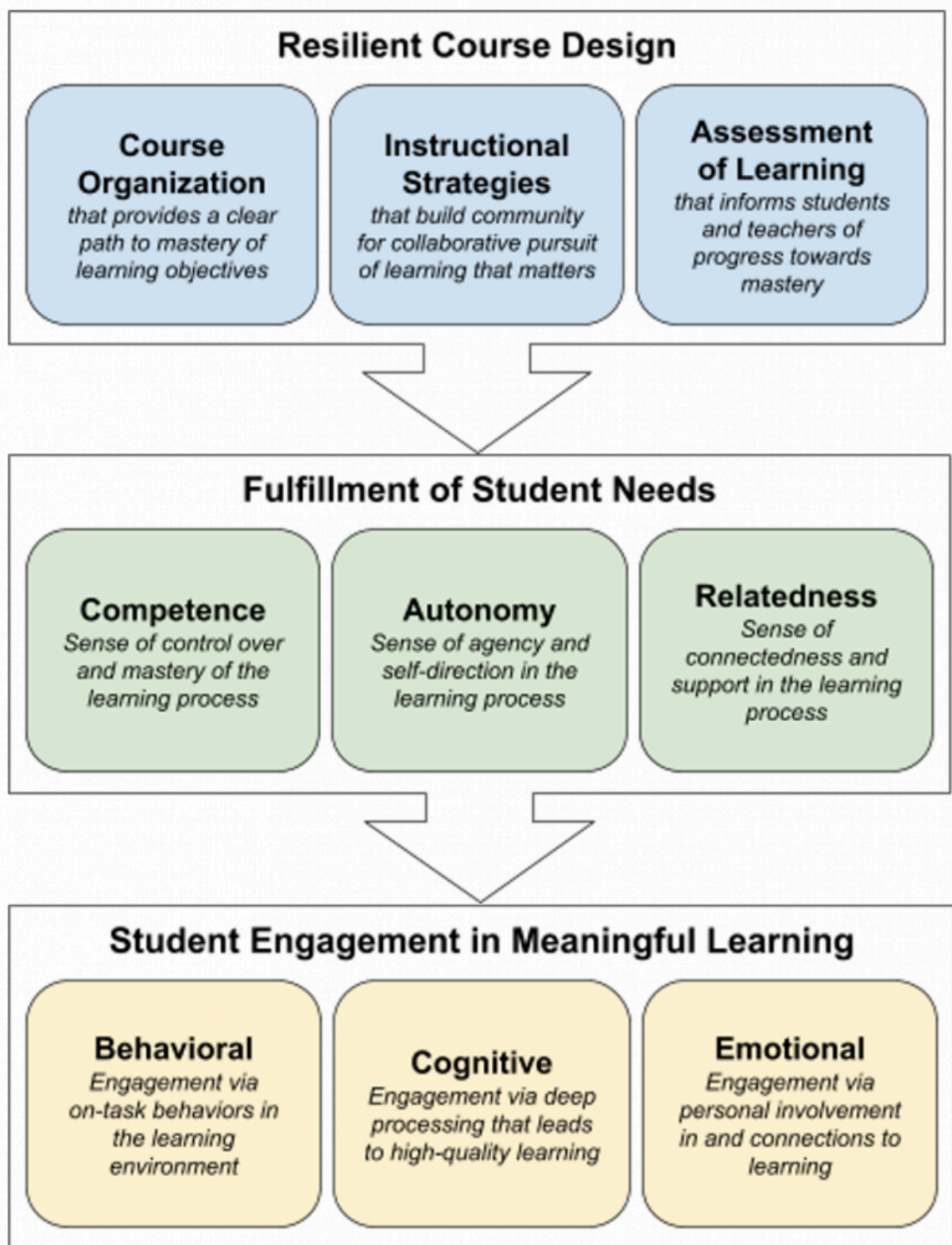*Engagement via personal involvement in and connections to learning*

Figure 3
A Conceptual model for Student Need-Fulfillment as the Mechanism for Effects of Resilient Course Design on Student Engagement

Resilient, Needs-Centered Pedagogy

Choices in Course Organization

Course Rhythm

In a traditionally organized course, the instructor might segment the class into units, with each unit covering a certain number of textbook chapters, typically delivered via lecture, possibly punctuated by class discussions or group activities, and bookended by a unit exam. Instructors with this "course rhythm" will be quite challenged when it comes to disruption, particularly if their goal is to neatly replicate the previously existing course format in a way that engages students. However, even in a fully face-to-face environment, it's unlikely that students experiencing this course rhythm will experience maximal need fulfillment. Although this repeatable pattern might meet the competence needs of some students, a single method for distributing content (i.e., lecture) followed by infrequent assessments (i.e., the unit exams) may thwart the autonomy needs of some. Therefore, to maximize student competence via a supportive structure, instructors should consider selecting the rhythm of the course before committing to the content. It is certainly breaking with the hallowed tradition of backward design to suggest this (Fink, 2013), but for a resilient, needs-focused course, I suggest that instructors start with course structure (even before designing learning objectives!). In fact, regardless of whether a course is virtual or not, centering course design choices around the interactions students will have is an excellent starting place. In other words, resilient instructors should consider the constellation of student to content, student to student, and student to instructor interactions present in their course, as these interactions become an important lever for enhancing student engagement (Moore, 1989; Garrison, Anderson, & Archer, 2010). Designing a repeatable pattern of intentional course interactions allows for students to habituate to the course's unique rhythm faster, thus reducing the cognitive load required to acclimate to an instructor's structure and freeing cognitive processing resources for the task of internalizing the content, skills, or lens of the course.

The ideal course rhythm depends on a variety of factors, including the student population, the length of the term, and the instructor's personal and institutional resources, but all effective rhythms will intentionally repeat a set of student interactions that leads to feelings of competence (due to the clear structure) and relatedness (due to the interactions among students and with the instructor). For example, in a six-week summer course, students might be invited into course interactions most days of the week (Figure 4), given that most institutions constrain the number of summer courses that can be taken simultaneously to one or two. In contrast, a semester-long course might constrain interactions to several days a week, especially if students take four or five courses simultaneously and might also be balancing work and/or family demands. Alternatively, a semester-long course might commit to a repeatable pattern for interactions, such that assignments are always due on Tuesdays, but might have such due dates fall every other Tuesday (Figure 5).

MONDAY: CONCEPT CHECK

Using the Resource Menu, read or view resources connected to the topic of the week. Choose the resources that you prefer. Check your understanding with a Concept Check--take it as many times as you need until you get 100% correct. This lets you know that you are ready to dig into deep learning for the week.

TUESDAY: REFLECTION JOURNAL

Complete the weekly reflection journal. These prompts will invite you to make connections between your past, present, or future worlds and the ideas we're learning about in class. This will help you to deepen your understanding around the concepts introduced in the Resource Menu and Concept Check.

WEDNESDAY: SYNCHRONOUS CLASS

Meet with your professor and classmates in Zoom from 11 am to 12 pm. We will use this time to check in about what we've done over the past week. We'll also work together on group or full-class activities that benefit from in-the-moment interaction.

THURSDAY: DISCUSSION

Respond to the weekly discussion prompt with an initial post. Discussions will either happen through text in an AsULearn Discussion Forum or through video /audio in FlipGrid. Discussions will ask you to use what you've learned to evaluate controversial claims in the field of education and/or psychology.

SUNDAY: CULMINATING ASSIGNMENT

End the week with an assignment that pulls together everything we've done so far. Culminating assignments will be independently-completed case studies or group-completed video analyses. Also make sure to have responded to a minimum of two classmates' posts on the weekly discussion.

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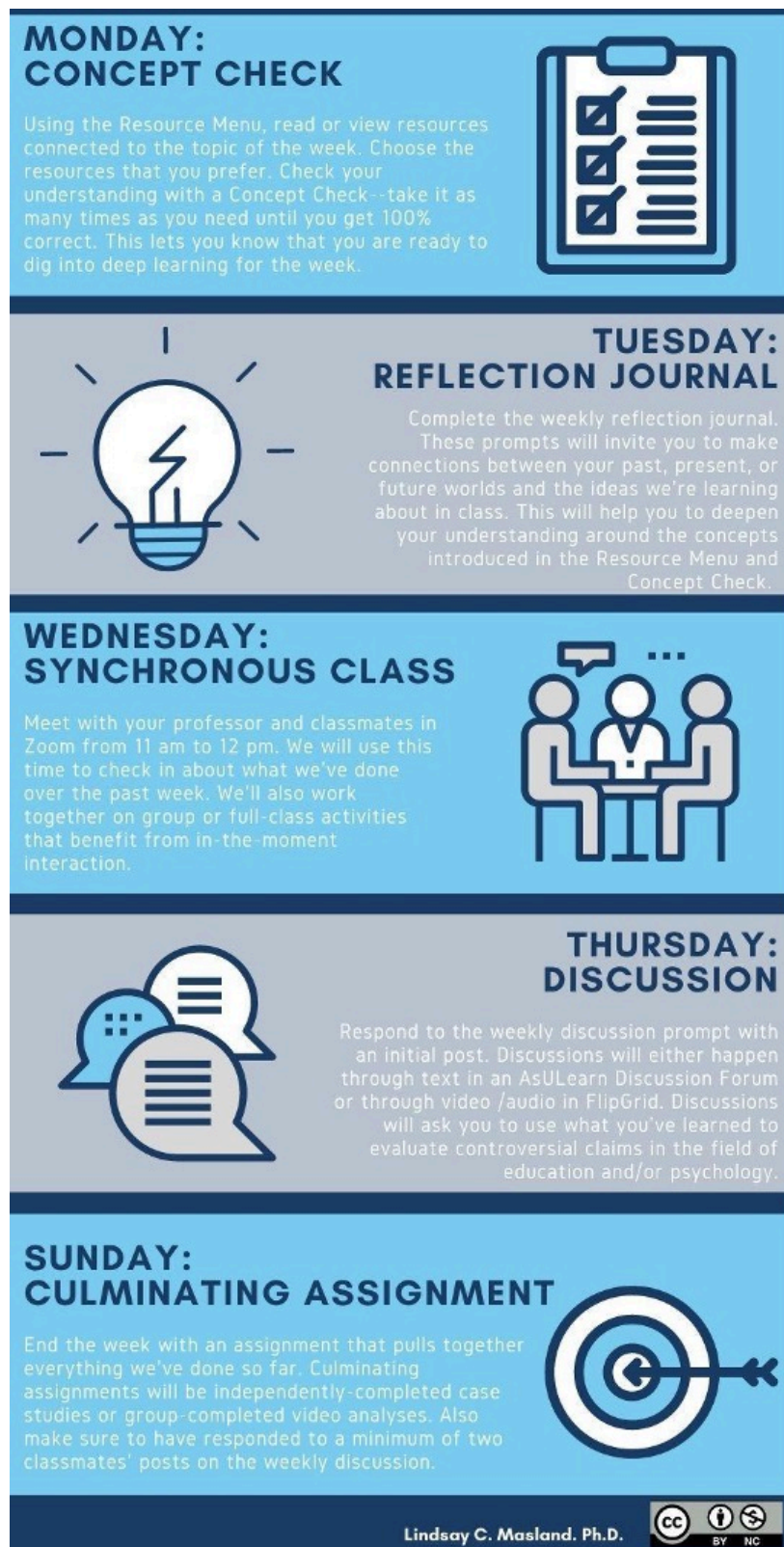**Figure 4**
Sample Course Rhythm for a 6-week, Upper-Level Elective Course Presented Online with Optional Synchronous Meetings
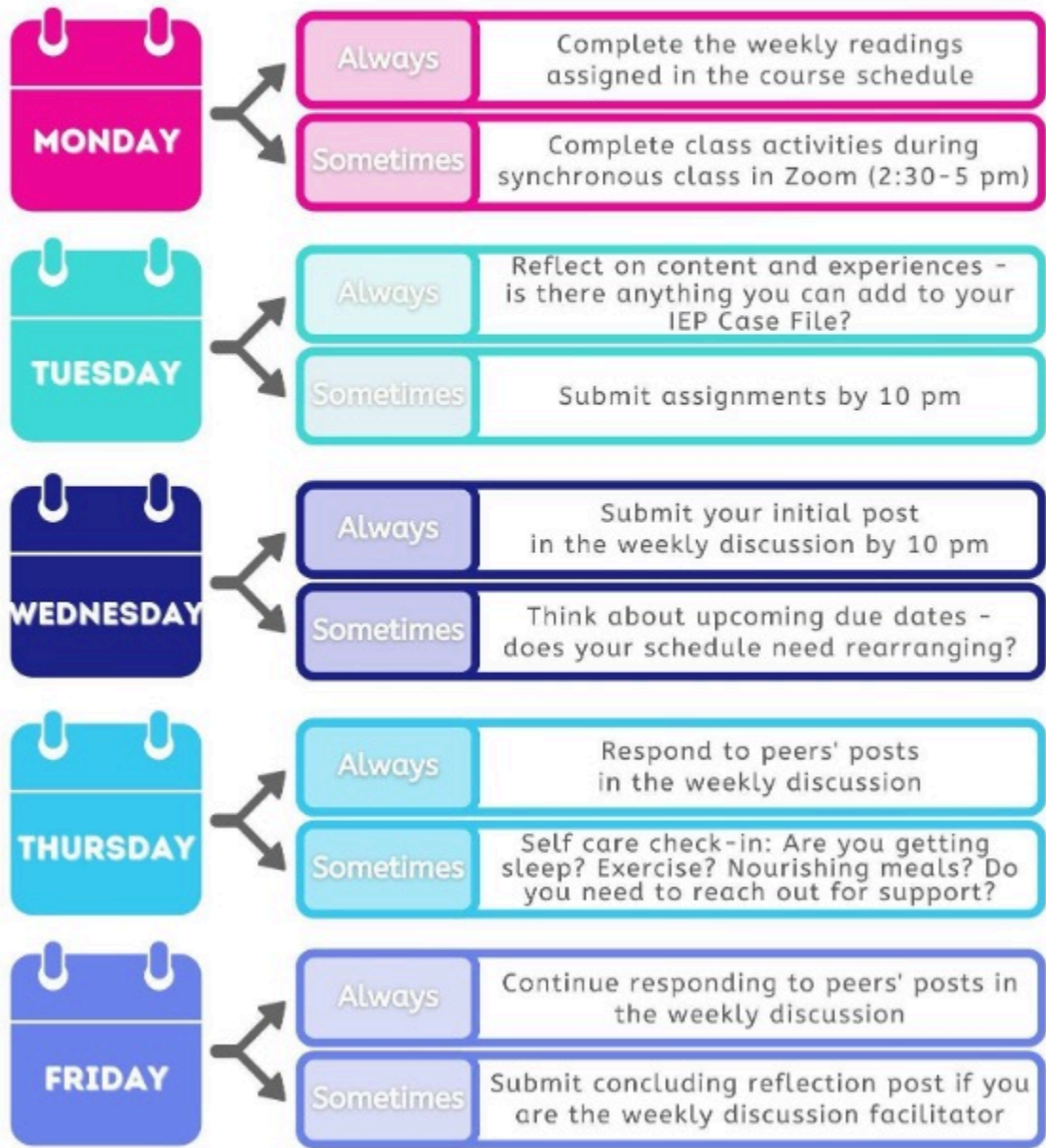
Figure 5
Sample Course Rhythm for a 16-week, Graduate Course with Required Synchronous Meetings Every Two Weeks

Note how both sample schedules include opportunities for students to interact with content, with the instructor, and with each other, thus fulfilling relatedness needs. After several weeks in either course, students would acclimate to the rhythm, freeing up cognitive resources to focus on mastering course objectives. Additionally, notice how the language in both samples invites students into the learning experience—this is a subtle, but important point. Highly structured courses run the risk of becoming constraining, both for the students and the instructor, because the structure can veer more toward control than support. However, when students are given clear rationales for the structure, their autonomy and competence are enhanced (Ryan & Deci, 2020), and they display increased attention, effort, and participation (Jang et al., 2010). Finally, notice how both course rhythms include course components that are synchronous and asynchronous and that would be amenable to face-to-face or virtual delivery. For example, in Figure 4, the schedule was designed for a primarily online course. However, the content-focused Monday interactions could be delivered via lecture and the student-to-student group activities could happen live in the classroom, if that modality was needed or preferred. Equivalently, though, the same learning objectives could be met in a fully online mode, as long as the focus remains on need fulfillment via learning interactions. Content delivery could happen via live Zoom, prerecorded, or curated lectures, and group activities could happen synchronously via Zoom or asynchronously via Slack or Google Docs. Designing with mixed modes in mind from the beginning of a course is a particularly resilient choice—students gain familiarity with both synchronous and asynchronous components from day one, so, should a modality-changing disruption occur, students are already well-rehearsed in the virtual components of the course. In short, when the same interactions happen on the same days and in the same rhythm, regardless of the modality in which those interactions occur, students feel competent, autonomous, and related to others, thus paving the way for high academic engagement.

Scaffolded Syllabus

Another important component of a needs-focused, resilient course design is a structured syllabus that clearly specifies the path to mastery, regardless of the modality in which the course is completed. The connection between a well-designed syllabus and student success is documented in the literature, as student-centered syllabi have been shown to affect both motivation and engagement (Richmond et al., 2016; Young-Jones et al., 2019; Nusbaum, Swindell, Plemons2021). Constructing a syllabus through a needs-focused lens simply takes things to the next level. In other words, if our intention is to enhance student feelings of autonomy (i.e., that success is within their control) and competence (i.e., that they have the needed skill and structure to succeed), then the syllabus must not only be an informational document but a representation of the path that students should take in pursuit of such success.

Notice how in Figure 6, which is a screenshot of a portion of a course syllabus calendar, that in addition to the expected due dates, the instructor has included recommendations for when to start preparing for each of the assessments. These recommendations include both when to start and continue studying for exams and when to begin work on reflection papers. Although some instructors may view such an approach as

unnecessary "hand holding," if the focus is on fulfilling competence needs, this choice makes sense. Although we want students to be able to do this sort of metacognitive planning on their own, the reality is that some college students have not acquired these skills yet. For example, those with executive functioning deficits, which are common in students with learning disabilities and attention deficit/hyperactivity disorder (Grieve et al., 2014), and metacognitive weaknesses, which are common in first-generation students (Williams & Hellman, 2004), are less likely than their peers to be able to plan effectively. By providing such students with a complete road map to success, their feelings of competence and autonomy are bolstered, leading to academic engagement and academic success.

It bears noting that there are more and less resilient ways to incorporate a scaffolded syllabus into a course. If the instructor types out every single piece of metacognitive planning needed to excel in the course into a Word document, and if the course experiences a midterm disruption that removes days from the class, the instructor will need to go back into the syllabus and modify the dates for every single one of those metacognitive supports. However, if the supports are set up in a truly scaffolded manner (i.e., faded scaffolding with progressively fewer supports as the course progresses; Hao, 2016), there will be fewer things that need tweaking. Additionally, if the instructor uses a cloud-based app to host the syllabus (e.g., Google Docs), then any changes can be made directly into the document, which decreases the time-intensive steps of removing the old syllabus from the learning-management system, creating a new syllabus, and then reuploading it. Such flexibility is just as handy in managing snow days as it is in handling the effects of a global pandemic.

Dates	Monday (in class)	(between classes)	Wednesday (in class)	(between classes)	Friday (in class)	(after class)
Week 6: Sept 23-29	TOPIC for 9/23: Group differences-Gender, Sex, and Sexuality • Which gender differences matter in the classroom? • How to support students with identities that are different than yours	CHOICE: 1. Read Ormrod Ch. 5. 2. Complete "Intelligence Webguide."	TOPIC for 9/25: Individual differences-Intelligence • What is IQ and how is it measured? • Does IQ matter in the classroom?	CHOICE: 1. Complete "Special Education Law Webguide."	TOPIC for 9/27: Students with special needs- Special education law • Why do ALL teachers need to know about special education?	CHOICE: 1. Complete "LD and ID Webguide." 2. Begin working on "Field Note 2."
Week 7: Sept 30 - October 6	TOPIC for 9/30: Students with special needs-Specific learning disabilities and intellectual disabilities • How can you teach students with learning disabilities and intellectual disabilities? REQUIRED: 1. Finish working on Field Note 2.	CHOICE: 1. Complete "ED, ADHD, and Autism Webguide." 2. Begin studying for Exam 2.	DUE by 11:55pm: Field Note 2 TOPIC for 10/2: Students with special needs-Emotional and behavioral disabilities • How can you teach students with emotional disabilities, ADHD, and autism?	CHOICE: 1. "Differentiating Instruction Webguide." 2. Continue studying for Exam 2.	**Exam 2 opens on AsULearn at 7am, October 4th** TOPIC for 10.4: Differentiating instruction to meet the needs of all • What is DI? • What would it look like in your classroom?	**Exam 2 closes on AsULearn at 11:55 pm, October 7th** CHOICE 1. Begin working on Culminating Paper #1. REQUIRED: 1. Take Exam 2 Multiple Choice. 2. Take Exam 2 Essay.

Figure 6
A Screenshot of a Course Syllabus Schedule for an Undergraduate General Education Course

Choices in Instruction

Student Survey

After an instructor has developed a needs-focused, resilient course rhythm and syllabus, the next step is to begin the actual instruction of the course. At this point, a focus on learning objectives comes into play, but before launching into content, an intermediate step is needed if the course is to retain its emphasis on student engagement via self-determination theory. That is, how can you be sure you are meeting student needs without first asking students what their needs are? This is where a student survey comes into play, a technique that has been recommended in service of inclusive excellence across a wide range of social identities (Sathy & Hogan, 2019), but that can also work double duty as a needs-fulfillment device for all students (Masland et al., 2020). Specifically, early on in the term, instructors can invite students to share relevant personal information that will allow instructors to tweak the course to better meet their needs. The exact questions asked will depend on a variety of factors, but here are several that may make sense to include:

- *Why are you taking this course?* (Related: what do you hope to get out of this course? Is there something you are hoping we will cover?)

- *Who do you hope to be when you graduate?* (Career-related questions as well as general identity- or goal-focused questions might fit here)

- *Is there anything you are worried about with regard to this course?* (This type of question can also evaluate the learning environments of students, i.e., whether they have the necessary technology to be successful in the course, whether they expect course disruptions, etc.)

- *What do you need to be successful in this course?* (This question type can include things students will need to muster or manage themselves—thus inviting metacognitive reflection—as well as things students expect from their instructor)

- *Is there anything you would like to share with me that will help me to teach you better?*

Asking questions like these can serve a variety of functions in a course. For example, every time I personally deploy a student survey, several students mention, despite no prompt to do so, that they "already feel great about this course simply because of this survey." This outcome suggests that students are experiencing the fulfillment of a relatedness need—by showing interest in and care for students' feelings about the course, instructors help to bolster student engagement before any instruction has even occurred. Given that increases in student-perceived relatedness have been shown to predict longitudinal increases in both emotional and behavioral engagement (Furrer & Skinner, 2003), this is a desirable outcome. Additionally, student responses can be used to tailor the course in a variety of ways, including content of focus, parameters around

assignments, creation of activity or project groups, and more. When instructors make even small tweaks in a course and when they point out that such tweaks were made based on information gleaned from the survey, student autonomy needs can be fulfilled. That is, students feel that they have control over their success in the course because the course has been, at least in some small way, tailored to meet their needs. Such support is particularly important in academic contexts characterized by disruption—when the instructor is aware of what their students are contending with, it becomes easier to tailor the course in a resilient, autonomy-focused way. And, as is the case with relatedness, perceptions of autonomy early on in a course predict academic engagement later in the middle of a course, which predicts academic achievement at the end (Jang et al., 2012)—a desirable outcome indeed.

Content Menus

Another important aspect of the instructional process is deciding what you will teach. In traditional settings, this sharing of content might occur in the context of a face-to-face lecture with occasional group activities or discussions in which the instructor decides exactly what will be learned and how. However, such a teacher-focused approach to instruction can attenuate feelings of competence and autonomy for students. Also, expecting to deliver all content via live lecture is a particularly nonresilient choice because, even though face-to-face lectures can be converted to synchronous lectures delivered via Zoom in response to a disruption, this is very taxing for both instructors and students to endure (Serhan, 2020).

A more resilient choice, therefore, is to utilize content menus as the primary way to distribute content. That is, instead of relying on a single mode (i.e., the lecture), instructors can build redundancy into their courses by pulling together a list of ways that students can access content, including relevant textbook pages, original sources, curated video lists from YouTube, and short recorded lectures. Making this choice requires the instructor to be comfortable with the reality that each student will interact with the content in a unique way—something that will maximize student autonomy but may challenge the instructor's need for control. A way to make sure this "choose-your-own-adventure" approach to content interaction works is to connect all of the various resources to the learning objectives or essential questions for each unit. In the screenshot below, taken of a Moodle module in a summer course on resilient pedagogy, students were invited to make their own choices of content, aligned to meeting the goals of the unit (Figure 7). In a face-to-face, hybrid, or HyFlex course, a live lecture could be included as an option in the content menu, but that lecture becomes one of many potential paths to mastering content. Although content menus challenge the traditional approach of all students interacting with the same content and in the same way, this instructional strategy is a resilient, needs-focused choice. That is, students see their competence bolstered when the goals or objectives are clearly specified and aligned to content, and the ability to choose which resources they can engage with to master objectives is a boon to their autonomy. Further, if the course experiences a disturbance, the mechanism for content delivery is not fully disrupted; instead, only one of a variety of options is compromised.

Figure 7
A Screenshot of the Content Menu for a Module of a Fully Online Moodle Course

Group Work

Although student surveys and content menus will do a lot to bolster the autonomy and competence of students, to really maximize the relatedness that students feel, we need to focus on student–student interactions in our courses, regardless of the modality. In fact, some research suggests that, of the three types of student interactions in virtually enhanced courses (i.e., student–content, student–instructor, student–student), it is the student–student interaction that is most predictive of student success (Bernard et al., 2009). Group interactions can foster this relatedness, but only if structural choices are made with relatedness and resiliency in mind. For example, placing students in intentional groups based on the results of the student survey is preferable to using randomly created groups, particularly if the groups have a longitudinal aspect to them. When students know they have been placed in groups for a specific reason (e.g., shared background experiences, career aspirations, work styles, etc.), they feel increased belonging and

relatedness. This pedagogical choice is particularly important for students with marginalized identities, as group work has been shown to decrease anonymity, center cooperative learning, provide needed scaffolding, and validate lived experiences (Yazedjian & Kolkhorst, 2007). To make groups particularly resilient, students should be placed into them at the start of the semester, or if a changing group composition will be utilized, the structure for group work should be established early and repeated frequently. For example, if the course has a face-to-face component for group activities, they can still keep track of their work in a shared Google Doc, Google Slide, or Padlet. This way, if the course or an individual experiences a disruption, the process for group work will not be similarly disrupted, as students will be well-rehearsed in the virtual process for maintaining a record of group work.

For example, in both face-to-face and hybrid or online versions of the same course, I have routinely placed students into groups based on shared career aspirations. I'll then present the groups with a video that demonstrates the real-world applicability of some of the course principles, and I'll ask them to evaluate those applications from the lens of their intended career (e.g., How might a kindergarten teacher incorporate the techniques in the video into a lesson on counting?) I'll ask them to keep a record of their work in a shared Google Doc, which I can also access. For groups meeting face-to-face or synchronously through a video platform, they might have their conversations "live," but they would still record their ideas in the Google Doc. If I am at the lectern or on Zoom during this process, I can observe their reflections in the shared Doc in real-time, and I can leave comments on their work, offering timely scaffolding of their thinking. On the other hand, if these group interactions are happening asynchronously, the same back and forth can still occur. I can use the "Version History" feature of Google Docs to see who has contributed what, and I can still leave scaffolding comments on their work. Regardless of the modality, though, planning for intentional groups that participate in a collaborative product serves as a resilient choice.

Choices in Assessment

Tiered Assessment Plan

After designing course structure and beginning course instruction, a time will come for course assessments. Of course, in the backward design model, an instructor will have made assessment choices well before delivery of the instruction, but in the students' experience, assessments typically come after at least some of the instruction. In a resilient, needs-focused course, instructors need to find a way to make assessments feel like another tool for students to experience competence, relatedness, and autonomy. Therefore, a tiered assessment plan is recommended that balances low-stakes and high-stakes assessments, all aligned in pursuit of the mastery of course objectives. Although many instructors may already design their classes with a balanced assessment system in mind, I think that explicitly sharing the design of the system with the students is an important piece in fulfilling their needs. For example, the syllabus screenshot of a tiered assessment approach

in Figure 8 shows students not only what the assessments are but also shares a rationale for why the course has been designed this way.
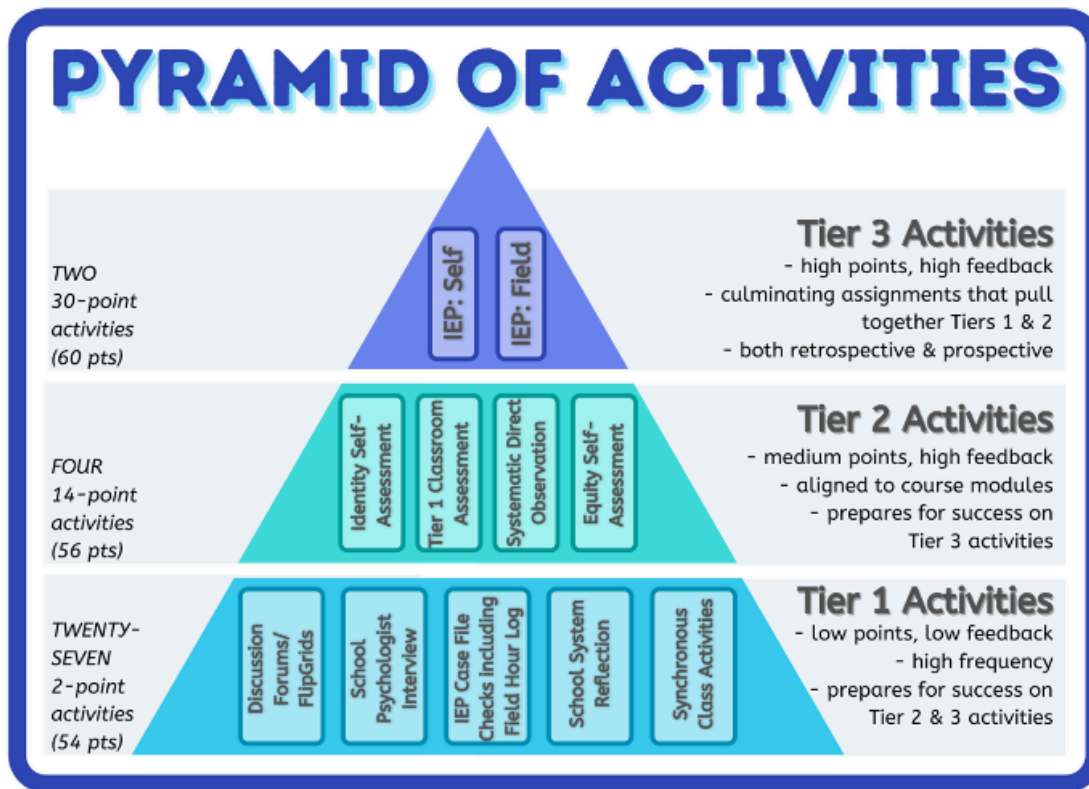
Everything that we will do together in this class is arranged into the above Pyramid of Activities. We'll have very little lecture or passive learning--instead, you'll be participating in a series of discussions, activities, and reflections that will help you to construct your own understanding of how this field works currently and how you might like it to work in the future.

In total, you'll participate in 33 learning activities. That might sound like a lot, but it translates to around 2 things per week during the semester, and it includes things like showing up to our virtual class. The activities are arranged to reflect the conditions that research indicates leads to the most learning-- a lot of low-stakes activities that prepare you for success on higher-stakes activities and assignments. So, although the relative number of points at each of the tiers is roughly equivalent, there are many more activities at the lowest tier. This means that it is possible to miss some of these or to submit "not quite there work" at the lowest tiers and still end the class in a good place. This also means that if you work hard and incorporate the feedback from both myself and your peers, you should feel more than prepared to excel at the higher-stakes activities at the top of the pyramid.

Figure 8
A Screenshot of the Tiered Assessment Plan from a Course Syllabus of a Graduate Course

Sharing the rationale for course design choices has been linked to increased autonomy (Ryan & Deci, 2020), as students aren't left asking, "Why do I have to do this?" when the rationale is explained plainly. In fact, students have been shown to expend greater effort in classes when autonomy-supportive rationales are provided, and highlighting how assessments and other learning tasks will enhance their future competence

leads to increased behavioral engagement (Reeve et al., 2002). Also, notice how the use of language like "we" and "us" invites a sense of relatedness into the course, and explicit explanations of the scaffolding structure are poised to bolster students' feelings of competence.

Incorporating a lot of assessments into a tiered assessment plan has important implications for course resilience, as well. If a disruption occurs and an assignment must be moved or deleted, the entire structure does not fall. Because plans of this nature build redundancy into the system at the outset (i.e., in the form of multiple assessments measuring goal mastery and with multiple low-stakes assessments preparing students for success on later higher-stakes assessments), instructors who design their courses this way can typically delete an assessment or two and still feel confident that the assessment plan will fulfill student needs as they move toward mastery of course content and skills.

To further enhance the resilience of this approach, virtual submission of assignments is recommended. Even for a face-to-face class, beginning the term with virtual assignment submission means that students will be well-practiced in the submission process in the event that a course disruption removes the face-to-face component. Additionally, virtual assignment submission makes it easier to relax submission constraints—that is, since assessments no longer have to be submitted within the bounds of a single course period, instructors can give wider submission windows (e.g., on the order of hours or even days). I personally made this choice well before the advent of COVID-19, when I realized that confining assessments to a single course period disadvantaged those students with slow processing speeds, weak executive functioning, and still-growing metacognitive skills. Essentially, I realized that I was inviting error variance into my assessments by administering them during the course period because assessment scores captured not only mastery of course material but also variance related to many other irrelevant cognitive variables. To remove such variance from my assessments, I moved all of them to online submission, I set the submission periods to three days, and I tweaked the prompts to invite creative, divergent responses that would be difficult to cheat on. I was rewarded for this choice with student evaluations proclaiming my supportiveness, with in-class test responses showing a depth of reasoning I had never seen before, and with a pretty easy pivot to virtual learning in the spring of 2020.

Tiered Feedback Plan

A well-designed assessment plan will invite a good bit of resilience and needs-fulfillment into a course, but as we know from studies of effect sizes in meaningful student learning, teacher feedback on those assessments is one of the tools that can move the lever the most (Hattie, 2015). Ideally, we would be able to give maximum quantities of truly helpful feedback to every student in every class, but this approach is simply impractical. Except in a few choice situations, most of us have too many students across too many courses taking too many assessments to make "ideal feedback" a reality. However, by using a tiered approach to feedback (to accompany a tiered approach to assessment), instructors can work smarter, not harder in pursuit of delivering

the sort of feedback that will both fulfill needs and maximize resilience—not only to course disruptions but also to the realities of nonpandemic higher education.

LEVEL 1
Rubric Feedback + Canned Comments

LEVEL 2
Fully Annotated Work

LEVEL 3
1-on-1 Meeting

Increasing Amount of Feedback

Decreasing Number of Students
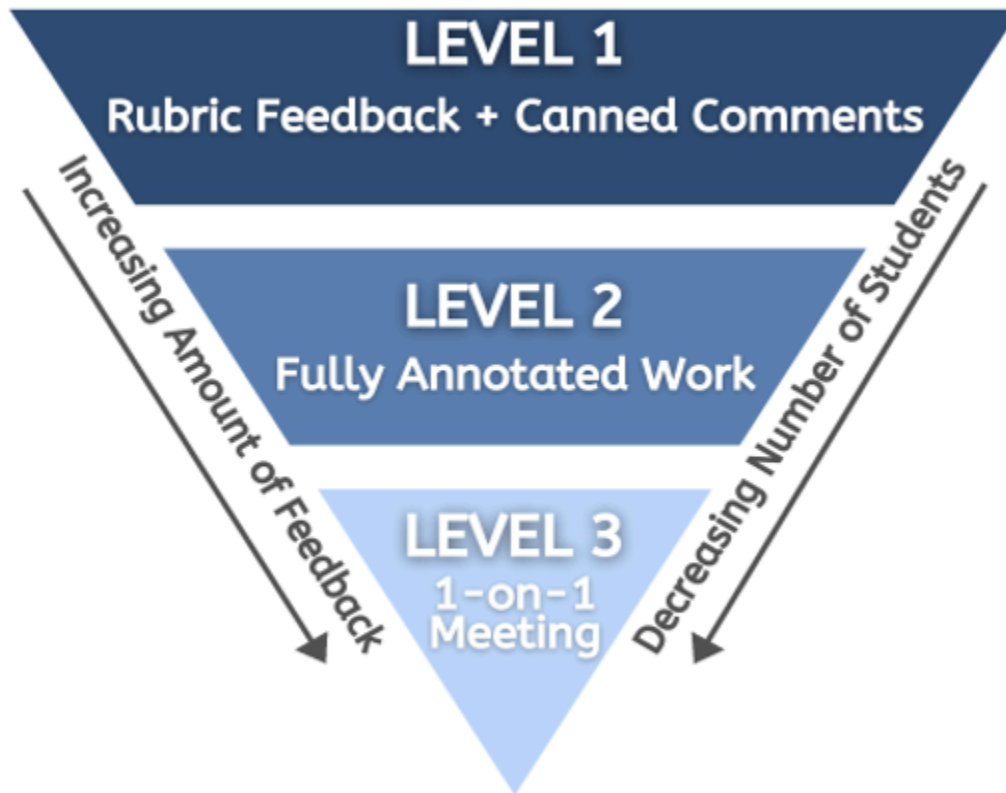
Figure 9
A Tiered Feedback Approach to Grading

In a tiered feedback approach to grading (Masland, 2017), instructors design strong rubrics for all assignments (Figure 9). Rubrics have the needs-fulfillment advantage of enhancing student competence and autonomy (Ryan & Deci, 2020), while also serving a resilience function of saving time while grading. To the extent feasible, these rubrics should be very similar, if not identical, from assessment to assessment, as rubric familiarity will reduce cognitive load for students and teachers alike. To grade according to a tiered approach, all students should receive Level 1 Feedback, which consists both of ratings on a well-designed rubric and of any "canned comments" the instructor has saved in either a word processing document or directly into the learning management system, if the technology allows. Each comment should be worded according to best practices in instructor feedback (Hattie & Timperly, 2007) and should focus on the aspects of the task/product that were effective and on specific steps to take to enhance less-effective aspects on future tasks. After delivering Level 1 Feedback, students are informed of how to access and interpret their feedback, perhaps with the accompaniment of a metacognitive wrapper activity designed to invite student reflection regarding their mastery of current and future assessments (Chambers, 2020). If worded correctly, students will experience

this feedback as a fulfillment of all three SDT needs, even in cases of weak academic performance. At that point, students are invited to request Level 2 Feedback, if they feel their Level 1 Feedback was insufficient. The instructor should take care to explain that this feedback is available to any student—from the strongest performers to the weakest—and that it is offered as a means of additional support to any who request it. In my own experience, I have found that 20% or less of the class will make a request for Level 2 Feedback. It is at this point that instructors can provide tailored point-by-point mastery feedback they wish they had the time to provide to every student. After Level 2 feedback is deployed, students who are still struggling can be invited to request a Level 3 feedback meeting, which typically takes the format of half pep talk, half designing a student-specific plan for success on future assignments. By allocating instructor effort in this way, all students receive need-fulfilling feedback that matches instructor effort to instructor need, and this feedback provision occurs in a stable system that is resistant to course disruptions.

Moving Toward Resilient, Needs-Focused Teaching During the Pandemic and Beyond

Throughout this chapter, I have proposed a series of pedagogical choices across the different levels of course organization, instruction, and assessment that will strengthen the design of any course. I approached these choices through the complementary lenses of self-determination theory and academic engagement, and I have attempted to demonstrate that designing courses with student need fulfillment in mind will cover much of the ground in creating a resilient course characterized by high levels of student engagement. I must admit, though, that while writing this piece I wondered whether we need a new teaching approach called "resilient pedagogy" at all. It is true that the COVID-19 pandemic has invited unprecedented levels of reflection among teachers everywhere. As an educational psychologist, a faculty developer, and a teacher, I have been heartened by the conversations that are suddenly taking place in faculty meetings and departmental emails. Instructors have been asking about accessibility, student workload, community-building, and equitable assessments with unparalleled depth and frequency. Our faculty development workshops have been filled to the brim, sometimes with 900% more participants than is typical. So, it makes sense that we would all scramble to frame out a new pedagogy that is equal to the magnitude of the disruption we've experienced.

It's important to remember, though, that disruption has always existed in the learning environment. It has manifested as conference travel for instructors or as snow days for institutions. And although we may not have been entrusted with learning about the realities of our students' pre-pandemic lives, the disruption has always been there for them. It lives in the student taking care of family members, the student who can't pay the bills, the student battling mental health challenges, the student battling systems of oppression not designed for them. Despite these long-lived disruptions, many students have excelled. They have excelled in classrooms that are student-centered, that are universally designed, and that are inclusively excellent, pandemic or no. This, I believe, is the task of a resilient pedagogy—to count a pandemic as just one of many

disruptions that have always conspired to threaten the most vulnerable of our students and to use the inevitability of these disruptions as the impetus for building an empowering and liberating learning environment for all.

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2.

PRODUCTIVE DISRUPTIONS: RESILIENT PEDAGOGIES THAT ADVOCATE FOR EQUITY

Beth Buyserie, Rachel Welton Bryson, and Rachel Quistberg

When the COVID-19 pandemic shuttered universities in March 2020, many students and faculty were thrown into shifting uncertainties regarding course delivery and pedagogy. As the pandemic persisted, faculty and students experienced new stressors caused by social isolation, unequal access to technology and resources, economic distress, and many other factors. In addition, the killings of George Floyd, Breonna Taylor, and others in the Black community sparked widespread social unrest that added to and compounded the emotional and material weight of the pandemic. Amid this tumult, higher-education faculty began asking questions about how to move forward with pedagogies resistant to unpredictable and unprecedented disruptions. Might it be possible to design learning that is resilient to disruption? Can learning be more responsive to shifting material circumstances? These questions and others form the core of what many call "resilient pedagogy," which the Pew Faculty Teaching and Learning Center (2020) defines as "an approach to teaching that takes into account the resiliency of course design, faculty, and students during uncertain times and changing circumstances" (para. 1). Values such as flexibility, adaptability, and stability inform this and related definitions, suggesting that ideal pedagogies can remain functional and productive even during times of great disruption.

At the same time, the combined disruptions of the global pandemic and ongoing protests against police brutality, along with a renewed emphasis on enacting antiracist pedagogies in higher-education learning spaces, demand a call to examine what we mean by words like "disruption." Can disruptions, rather than being perceived as negative or undesirable, be a means of encouraging a productive, engaged pedagogy that places emphasis on individual lived experiences as well as structures of injustice or inequity? We suggest that the renewed dialogue on racial justice urges teachers to disrupt pedagogies that maintain inequity, even as we prepare for flexible approaches to our course delivery methods. Rather than seeking traditional resilience that can remain firm and unchanged in spite of external disruption, pedagogies of productive disruption seek to create learning opportunities and spaces that engage with and respond to evolving and unpredictable disruptions in the virtual, material, and psychosocial landscapes in which teaching and learning take place.

Throughout this chapter, we advocate for resilient pedagogical approaches that simultaneously attend to flexible practices in our teaching and acknowledge the complexities of disruption in order to deliberately

equitize education. While we teach composition and use the teaching of writing as our general reference, this chapter is written for any disciplinary teacher who wishes to foreground social justice as part of a resilient pedagogy. As Genevieve García de Müeller and Iris Ruiz (2017) emphasize, composition programs (and, we argue, all disciplinary programs) should attend to issues of racism, whiteness, and normativity within classes not as an afterthought, but as an integral aspect of the curriculum. Additionally, we argue that the discipline of composition, with its focus on revision and attention to multiple perspectives, can be a valuable, important aspect of a resilient pedagogy—particularly if we use writing to question what we do not and cannot know (Waite, 2017). These strategies create space for students to understand productive disruptions as integral components of how we teach and learn.

We acknowledge that deliberately embracing productive disruptions can lead to potential discomfort, both for those who would prefer that the classroom remain politically neutral and for those whose embodied experiences require them to continually navigate systemic oppressions. While the respective levels of discomfort are drastically different depending on the person, teachers committed to social justice must continually challenge both such supposed neutrality and systemic oppression in their pedagogies. We believe that the process of engaging with productive disruption challenges us to reconsider commonplace assumptions that may seem neutral or natural in dominant discourse but may actually create or reinforce structures of inequity in higher education. The challenge of disrupting ideas that appear neutral in dominant discourse urges teachers to engage in pedagogies that allow for greater flexibility in how students and faculty access teaching and learning in unpredictable material and ideological landscapes.

Resilient Pedagogies De ined and Disrupted

While some scholars consider how disruptions might create learning opportunities (Kinchin, 2017), we propose that practitioners intentionally use the spaces created by disruption to question and to challenge maladaptive systems that demonstrate disturbing resiliency and perpetuate inequity. By using such spaces to advocate for equity and inclusion, disruptions can not only be productive in achieving course outcomes, but also produce positive social change.

The work of resilient pedagogy involves critical reflection, praxis, universal design, and student involvement. Rebecca Quintana (2020) defines resilient pedagogy as having the "ability to facilitate learning experiences that are designed to be adaptable to fluctuating conditions and disruptions" (para. 1). Andrea Kaston Tange (2020) favors the term "resilient design" and in a similar vein explains that "resilient design is meant to be flexible, to anticipate disruptions, and to value social equity and community" (para. 6). Tange's emphasis on pedagogies that not only anticipate disruptions but also consider equity is particularly insightful in thinking how pedagogies can advocate for inclusion. The Pew Faculty Teaching and Learning Center (2020) considers three factors that go into the creation of a resilient pedagogy: course design, faculty preparation, and student engagement. When resilient pedagogies anticipate disruption, we can begin evaluating our teaching practices.

As we evaluate, the disruptions we experience can provide opportunities to question our normative teaching practices.

Resilient pedagogies respond to disruptions so that success is achieved because the disruptions are regarded as productive. A disruption can be productive when it reveals inequities that were disguised by practices went unquestioned. As Ian M. Kinchin in *Pedagogic Frailty* (2017) explains, pedagogies can go further than anticipating disruptions by reframing problems and crises as opportunities (p. 6). An example of this is the disruptions caused by the onset of the COVID-19 pandemic. Many instructors turned to resilient pedagogies to ensure their students still achieved course outcomes when external factors disrupted the physical classroom. As many classes were moved into online formats, the virtual classroom was not the same for all individuals. In traditional face-to-face classes, the physical space used to conduct class appeared to be "equitizing" because students had access to the same physical space, when in reality this equitizing classroom space concealed the inequities many students experience, such as access to technology and internet. As Tange (2020) explains, "Students tried to stay motivated in situations exacerbating the systemic problems that create inequities in accessibility" (para. 1). The removal, or disruption, in the classroom's physical space brought to the forefront the need to address inequity and exclusion.

Rather than simply returning to the supposed equitizing space of the physical classroom, practitioners of resilient pedagogies can use disruptions, such as an unprecedented move to online classes, as opportunities to address inequity. Considering disruptions as opportunities, as Kinchin (2017) suggests, can prove key in redirecting the focus of resilient pedagogies to productive disruptions that can create lasting change in advocating for equity and inclusion. Kinchin concludes that "an increasingly consumerist higher education agenda" encourages individuals "to become routinized experts when it comes to teaching practice" (2017, pp. 12–13). These routine models may lead to success "within a stable environment," but Kinchin points out that "stability is an illusion" (2017, p. 13). Resilient pedagogies can help us move beyond the illusion of stability and instead consider how we can use that instability, or disruption, to address more systemic inequities that might be disguised by education practices that have gone unquestioned and become routinized.

When disruptions are perceived as productive, we can question and challenge the systems that these disruptions upset. In "Transformative, Transgressive Social Learning," Helia Lotz-Sisitka et al. (2015) explain that "resilient" as a word with an assumed-positive connotation is problematic. They explain that when a system is unhealthy, its ability to be resilient can be quite disturbing (2015). The authors assert that "[t]here are many 'unhealthy' systems that are very resilient" (Lotz-Sisitka et al., 2015, p. 74). Routinized practices in both education and government often support unhealthy systems, such as structural racism, that show a disturbing amount of resilience. Disruptions in these routines provide opportunities to break cycles of harmful resilience. In order for change to occur in teaching and learning, higher-education institutions should adopt more socially transgressive forms of learning that have the potential to disrupt maladaptive

resilient systems (Lotz-Sisitka et al., 2015). The use of transgressive and transformative pedagogies must be transdisciplinary and involve the coproduction of knowledge and the decolonization of thinking. We must disrupt to create change.

The creation of resilient pedagogies can be one way to advocate for more equity and inclusion in our teaching practices. Critical race theory scholars might emphasize the importance of antiracist approaches to resilient pedagogies that seek transformation rather than stagnant reification of structural oppression (Inoue, 2015). Due to structural racism's ever-present and myriad organizing structures, resilient pedagogies must also be responsive to changes connected to systemic racism. As Ratcliffe (1999) argues, such a pedagogy must foreground the antiracist practices of rhetorical listening, which she defines as a means of hearing "discursive intersections" that can "facilitate cross-cultural dialogues about any topic," most specifically those connected to gender and race (p. 196). As Asao Inoue emphasizes, "[an] antiracist pedagogy . . . demands that we listen compassionately and carefully. . . changing . . . [practices] to help our students" (2017, para. 13). Inoue's emphasis on listening is a key concept in creating resilient pedagogies that use disruptions productively rather than as a way to maintain the status quo. As faculty and administrators develop resilient pedagogies, their practices consider how the external disruptions can provide opportunities to create inclusive and equitable spaces.

Productively Disruptive Pedagogies: Questioning What We Do Not Know

Because resilient pedagogy, if not critically examined, can unintentionally reinforce the systems we wish to disrupt (Lotz-Sisitka et al., 2015), teachers must continually question how their disciplinary contexts uphold systems of oppression. Current conversations within many disciplines highlight how the intersecting systems of racism, heteronormativity, and ableism implicitly shape classroom practices. For example, critical composition scholars expose the underlying and overt whiteness and normativity entrenched in our language, writing, and research practices (Baker-Bell, 2020; Dolmage, 2012; Waite, 2017). These often-unquestioned structures of power present in all disciplinary classroom contexts promote fixed ways of knowing the world, as well as maintain systems that ultimately harm students and teachers. As environmental scientists Lotz-Sisitka et al. (2015) argue, we instead need "a paradigm shift and a transition towards doing better things differently (transformation) rather than doing what we [currently] do better (optimization)" (p. 73). Teachers who seek to be resilient must find creative ways of challenging both these power structures and our own fixed knowledge.

Questioning what we know—and do not know—is one method for engaging in productive disruptions that might promote these paradigm shifts. In *Teaching Queer: Radical Possibilities for Writing and Knowing*, Stacey Waite (2017) asks students to write responses to the statements "I do not know" and "I cannot know"

(p. 69) as a way to begin their research, emphasizing that "all knowledge is partial knowledge" (Waite, 2017, p. 69). Teachers in all disciplines must therefore ask themselves what they think they know about teaching and be prepared to question their knowledge and expertise. In arguing for antiracist pedagogies, April Baker-Bell (2020), García de Müeller and Ruiz (2017), and Inoue (2015) emphasize a predominantly White teaching faculty still do not know—or perhaps refuse to know—the ways in which predominantly White disciplines, including composition, are complicit in racist teaching practices. These scholars do not simply call for temporary and localized changes, but a complete shift in the way teachers construct their pedagogy. Importantly, a productively disruptive resilient pedagogy should not return to normal when the disruption ends.

Instead, resilient pedagogies should seek disruption by questioning how commonplace classroom practices perceived as desirable may in fact work against the goals of equity and inclusion. In the following sections, we question two such commonplace classroom practices central to many disciplines: student participation and writing. In engaging in this (imperfect) disruption, we hope that all faculty, including us as authors, may question what we do not know and continue to revise our practices toward resilient pedagogies grounded in equity.

Disruptive Participation: Inclusion in Virtual Classrooms

Classroom participation is one area where faculty might consider productive disruptions. While various pedagogical practices value and elicit different forms of participation, in face-to-face classes participation is often marked, at the very least, by physical presence in the course along with related behaviors such as asking questions, taking notes, participating orally in group work, and engaging in nonverbal communication such as nodding or looking confused. Faculty are able to perceive face-to-face participation primarily through visual cues; a student who is visibly present in the classroom is achieving a baseline form of participation.

However, relying too heavily on physical presence and visual cues as indicators of participation may reinforce (and reify) expected norms that may seem innocuous but may actually be harmful as they rely on ableist assumptions about how students' bodies can and should be able to perform. Dolmage (2012) argues that "normalcy is used to control bodies; our normate culture continuously reinscribes the centrality, naturality, neutrality, and unquestionability of the normate position; our culture also marks out and marginalizes those bodies and minds that do not conform" (p. 110). In fact, even seemingly commonplace strategies such as attendance policies, designed to solidify physical presence and participation, may bear questioning. While having students physically and visually present in class can lead to desirable learning outcomes such as forming a class community and being able to visually "read" student understanding, many physical attendance policies also reinforce norms like those Dolmage describes.

The shift to online and virtual formats precipitated by the global pandemic offers an opportunity to productively disrupt commonplace assumptions about students' visual presence in a course as a prerequisite of learning and participation. In particular, the use of synchronous learning platforms such as Zoom allows for a more nuanced approach to fostering student presence and participation in virtual classes, particularly with regard to camera preferences and policies and the affordances of tools like Zoom to expand participation to more types of student bodies than might feel comfortable participating face to face.

The emerging conversation about Zoom policies from university teaching and learning offices, individual faculty, mental health experts, and others offers insights about the possible effects of, for example, camera-on policies in online spaces. Some faculty may prefer for their students to have their cameras on for multiple reasons, including reducing the sense of isolation, encouraging discussion, monitoring student attention, and responding to nonverbal cues, just as they might be able to do in a face-to-face classroom. In addition, faculty might presume that if they cannot literally see their students through their cameras, the students may not be fully present and engaged in the learning activities of the course. However, examining definitions and practices of presence and participation may work to productively disrupt our emphasis on visual cues as proof of participation.

While Zoom and other synchronous virtual meeting spaces are far from perfect, they do offer certain affordances that can help us value multiple means of participation in a classroom space. Where traditional face-to-face classrooms often favor students who feel comfortable and adept speaking in front of people, Zoom spaces can de-emphasize the dominance of those visual cues and open up opportunities for more students to make substantive contributions to class discussions and activities. For example, regardless of whether cameras are on, students can participate orally, by unmuting their microphones, or they can type questions, comments, and ideas in the chat space. Students can also share their own work in large or small groups, or they can work collaboratively on electronic documents easily shared through Zoom. In many ways, Zoom offers more students the opportunity to make meaningful contributions to class learning, thereby providing the potential for more inclusive participation practices.

Current discussions about cameras and camera policies in Zoom often focus on the many valid reasons why faculty might allow students to leave cameras off in virtual classrooms, including mental health strain, "Zoom fatigue," competing obligations, privacy concerns, and access issues (Moses, 2020). But in addition to these valid concerns, allowing students to choose whether to have their cameras on also allows for deliberate consideration of what participation is, why we value it, and how we can expand its application in the classroom. These practices can help us reconsider not only participation in virtual classrooms but also in our return to face-to-face instruction to create lasting social change.

Disruptive Writing Practices: Challenging a Mainstream Notion of Error

In addition to participation, disciplinary teachers can review the way they engage with writing as an opportunity to create productive disruptions. While disciplines have various contexts and purposes for writing, Waite (2017) emphasizes "writing as a transformative, self-reflexive, and exploratory act" (p. 69) rather than writing as the static transcription of knowledge. We argue that the practices promoted within our discipline of rhetoric and composition—such as revision, flexibility, self-assessment, and questioning normative power structures embedded within language and writing (Baker-Bell, 2020; Dolmage, 2012; Waite, 2017)—provide possibilities for continually reevaluating our teaching practices. For example, Patterson (2013), who teaches a Religion and Ecology class, intentionally includes writing and revision as part of a resilient pedagogy. Because the sustainability of the planet is in question, Patterson writes, "I came to view the course as a living system" (2013, p. 281) and, as a result, "had to grow, adapt, and change my pedagogies, texts, and field-based exercises" (p. 281). Patterson notes how, "As we upended 'business as usual' through observation and reflective and analytic writing, we realized how trapped our learning can become" (p. 282). For Patterson, writing made space for productive disruptions and facilitated resilience.

That said, writing, like any disciplinary content, is not neutral but carries ideological connotations based on power and privilege. As composition teachers and writing program administrators, we take this opportunity to make our own productive disruption to the commonplace, and often deficit-based, assumption that strong student writing should be error-free. Critical language scholars trace the connections between error, language, and racism (Baker-Bell, 2020; Canagarajah, 2006; Inoue, 2015), which force us to question how our everyday language practices and expectations maintain dominant ways of knowing. Additionally, in their work on race and silence within writing programs, García de Müeller and Ruiz (2017) critique terms such as "basic writer" or "marginalized writer" that often equate raced identities with deficit or marginalized positionalities, assumptions that have been harmful to students of color "because these tropes reduce them to metaphors that connote deficits rather than assets" (p. 21).

In her article entitled "*We Been Knowin: Toward an Antiracist Language & Literacy Education*," Baker-Bell (2020) argues instead for an antiracist pedagogy that "critically interrogates White linguistic hegemony and Anti-Black Linguistic Racism" (p. 9). Baker-Bell intentionally uses the phrase "been knowin" to emphasize the power of Black Language and lived experiences. As Baker-Bell clarifies, the word "been" in this context is a feature of Black language that "is used to mark the remote past" (p. 3) and to emphasize the Black community's long-term knowledge surrounding oppression, survival, and resilience. In privileging the phrase "been knowin," Baker-Bell not only describes resilient practices, but also argues that transformative change cannot happen unless pedagogies are attentive to the collective knowledges and lived experiences of those

most marginalized and oppressed by society—a stance we argue must be incorporated into any resilient pedagogy.

While this use of "been" would traditionally be considered an error if interpreted solely through White standardized academic discourse, Baker-Bell (2020) intentionally makes this productive disruption to interrogate racist language practices—a vital practice, we argue, in resilient pedagogies that seek to do more than maintain oppressive systems. Those who have been taught to value primarily White mainstream English may initially reject or (mis)interpret this challenge to "error-free" writing, not understanding that scholars who argue for more flexibility in language are actually asking students to draw more intentionally on their own lived experiences with language—and to be more rhetorically aware (and resilient) in their writing, not less (Canagarajah, 2006). In other words, as critical language scholars (Baker-Bell, 2020; Canagarajah, 2006; Inoue, 2015) remind all teachers of writing, linguistic negotiation often creates more powerful discourse than language conformity, and an emphasis on speakers' linguistic assets can disrupt colonial and racist tropes of language deficiency. To be clear, we are not suggesting that writers (whether they be students or teachers) submit final drafts that have not been revised, nor are we suggesting that all moments of error are rhetorical. However, we do suggest that teachers focus less on error and more on rhetorical intent as a way of disrupting standard expectations. We suggest that disciplinary teachers, rather than responding to students with the comment "please correct," instead respond with "please analyze" to emphasize students' linguistic agency. By interrogating the connection between race, racism, and error-free expectations, critical language scholars create a productive disruption in the pedagogical practices of all who assign and teach writing.

Disrupting Beyond Our Present Moment: A Framework for Resilient Pedagogies

Soon after the pandemic began affecting our daily lives, people began asking when we would return to normal. However, the political unrest sparked at the time by the deaths of George Floyd, Breonna Taylor, and others in the Black community highlighted and problematized any uncritical desires for normalcy. As we, the authors of this article, strove to respond to both the immediate shift to virtual course delivery formats and the renewed calls for sustained racial justice and antiracist approaches in our teaching and program practices, we realized that we needed a framework to guide us in this work—one that could help push against our natural tendency to want to return to normal. Because resilient pedagogies should do more than respond to the current moment, we also sought a way to encourage productive disruptions as a long-term, recursive process. Therefore, we began developing a framework that provides opportunities for both short- and long-term evaluation of pedagogical practices. In developing this framework, we asked ourselves the following questions: How can we use pedagogical revisions as opportunities to disrupt inequity? How can our first-year composition program further engage in the renewed conversations on racial justice? And how can we prepare for flexible approaches to our course delivery methods? The questions raised within the framework encourage

us to prepare for a variety of disruptions, some productive to challenging dominant perspectives and others that might potentially distract us from this important work. In the face of challenging circumstances, sometimes all we can do in the moment is seek what was once normal. However, a resilient pedagogy is, or should strive to be, purposefully responsive rather than a default to the normative. Our goal is to lay frameworks of responsiveness that productively disrupt commonplace practices that may reinforce inequity, regardless of the current moment.

In this section, we provide a framework for how teachers committed to pedagogies of equity and inclusion might disrupt their curriculum in productive ways. Rather than create a traditional resilient pedagogy that (relatively) smoothly anticipates all disruptions, we instead focus on the kinds of disruptions that challenge maladaptive systems that perpetuate inequity. We frame our examples in this section around the ongoing evaluation of the everyday programmatic, curricular, and individual classroom practices within our composition program. We recognize that these types of evaluations are part of an ongoing revision process, and we invite all disciplinary faculty to take this moment to intentionally focus on possibilities for disrupting their everyday practices. We connect our composition-based examples to other disciplines to challenge the disciplinary siloing that often occurs in academia—a practice that reinforces dominant ways of thinking since the structure ensures teachers have fewer opportunities to question their practices and engage with multiple perspectives. In contrast, we suggest that intentional dialogue between disciplines can encourage and facilitate productive disruptions across the university. Additionally, we hope that by describing key features of our own field we can provide all faculty with a better understanding of the work we do in first-year composition.

The framework we describe below, rather than being linear, should be understood as cyclical and recursive. It consists of five actions that teachers likely already practice: question, seek, pause, reflect, and revise. Rather than claim a brand-new framework for resilient pedagogies, we instead highlight familiar practices so that teachers can begin making immediate changes, even small ones, to their pedagogies. While the commonplace definitions of these actions are easily understood, we complicate their initial simplicity by analyzing them through the lens of power and equity. For ease of reading, we follow the same pattern for each of the five actions: First, we include a theoretical paragraph to contextualize the concept. Next, we apply the theory to teaching and describe our attempts to disrupt our own teaching of first-year composition, which we describe broadly enough so that teachers in various disciplines might connect our efforts to their own teaching. Finally, we end each section with three to four questions teachers can ask as we all continue to engage in resilient pedagogies grounded in equity.

Question

Questioning what we do not know is key to making space for productive disruptions and should be engaged in frequently and recursively. This questioning should help both faculty and students seek multiple perspectives that can aid in the dismantling of harmful resilient systems. A resilient pedagogy is about

questioning in order to navigate the unexpected. Such questioning involves an element of trust—trust in our students, trust in ourselves, and trust that the systems we are in should continually be questioned. As Patterson (2013) and Inoue (2017) emphasize, a resilient pedagogy must involve students, which simultaneously requires that we give up some of our control in the classroom. Courses that involve discussion and that invite students to contribute their voices to ongoing conversations offer one way for both teachers and students to question the standard practices in their disciplines. Through promoting questioning in our composition courses, we can productively disrupt by asking students to question what they commonly believe to be true about writing, research, and other forms of communication. Waite (2017) describes a lesson in which they take their students through the process of questioning the standard names we have given to describe writing: thesis statement, conclusion, and body paragraphs. Waite emphasizes that this process of creating productive disruptions, of being disruptively resilient, can be uncomfortable. By embracing this discomfort and allowing students to think more critically about language, they are better able to analyze the relationship between language, equity, and power.

While we promote questioning as a framework for creating productive disruptions in a resilient pedagogy, we also recognize the ways in which questioning is often used to delegitimize the lived experiences of people who are marginalized by society (Baker-Bell, 2020). When we encourage faculty to question what they know to be true, questions that invoke harm or promote a fixed perspective do not create productive disruptions, as is often the case when significant scientific concepts like climate change or historical events like the Holocaust are questioned in ways that maintain systems of power. Teachers who intentionally seek productive disruptions should be aware of the ways in which even their most useful approaches can be appropriated.

We suggest that practitioners of resilient pedagogies begin to engage with questions in the following areas:

- **Question the Field of Study:** What is true in your field? In what ways might it not be true?

- **Question the Practices:** What are some of the most unquestioned practices of our disciplines? Why are these practices promoted? What practices go unnoticed? How do these practices connect with issues of equity and inclusion?

- **Question the Privilege:** Who do our disciplines and classes privilege? How can we more intentionally privilege student knowledge and lived experience?

Seek

When designing resilient pedagogies, teachers need to intentionally seek places of productive disruption, spaces that include discomfort and dissent, and that challenge fixed ways of knowing. As Carr & Micciche (2019) argue, "To imagine or insist on action that does not expect dissent is to overwrite the possibility of

change from the start" (p. 212). Being open to such change requires that we seek multiple perspectives that challenge dominant narratives—including the narratives we ourselves might tell. Baker-Bell (2020) provides one example of the importance of this practice, an example we highlight for disciplines that study the media, communication, or culture. After the murder of Trayvon Martin in 2012[1], images in White mainstream social media demeaned 17-year-old Martin and cast his killer in a positive light. In seeking alternate perspectives and privileging a variety of sources, Baker-Bell "witness[ed] the ways that Black people were using antiracist critical media and Black digital activism (Mcilwain, 2020) to disrupt the media's role in anti-Black racism, racial violence, and the maintenance of White supremacy" (2020, p. 4). Intentionally seeking multiple perspectives, privileging lived experiences, and relying on a wide range of sources in our teaching can facilitate these disruptions.

In applying this framework and responding to Baker-Bell (2020), we sought additional possibilities for disrupting the way we teach research. Because we were also simultaneously revising our composition program outcomes, we underscored in our outcomes the importance of emphasizing critical information literacy practices, which require students to do more than simply find and use sources to support an argument. Our curriculum now specifically asks students and teachers to consider issues of power and equity in the research process; deliberately seek alternative perspectives that challenge dominant narratives; and consider additional forms of credibility, including lived experience and personal authority, in a wide range of sources and texts. In disrupting the teaching of research, teachers from all disciplines can ask students to intentionally seek, rhetorically listen to, and incorporate these multiple perspectives—not as an add-on, but as a foundational part of the assignment and research process.

As teachers seek to disrupt dominant ways of thinking and knowing, they might consider the following questions to guide their resilient pedagogy and curriculum design:

- **Seek Missing Perspectives:** What perspectives in my curriculum, readings, and background knowledge am I missing? How can my students and I more intentionally seek out and apply these perspectives? Is my discipline overlooking cross-disciplinary conversations?

- **Seek Multiple Perspectives:** How can I frame my class so that students are guided, challenged, and supported as they seek multiple perspectives? How can I create curricular content that seeks marginalized perspectives?

- **Seek to Disrupt Traditional Notions of Credibility:** What practices challenge traditional notions of credibility? How can my pedagogy seek and recognize the credibility of sources and groups that are often

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1. Trayvon Martin was an unarmed teenager who was shot and killed by George Zimmerman in Florida in 2012. Zimmerman was acquitted in 2013 (Bates, 2018).

ignored, dismissed, or silenced?

Pause

As Carr and Micciche (2019) argue, "Resilience, through a feminist lens, signifies sustained, collective readjustment aimed at liberatory change with no end point, no resting posture. For this reason, duration and pacing are important to acts of resilience" (p. 211). Here we introduce rhetoric's concept of *kairos*, or timeliness, into this conversation. A resilient pedagogy framed within normative concepts of time might always expect teachers to respond productively in the moment; such a version of a resilient pedagogy would be expected to be engineered to predict potential disruptions and defuse them, rather than open them up as places of growth. But a resilient pedagogy that highlights frameworks of responsiveness is not only focused on the present moment. Rather, it also responds to past—and future—moments of tension in order to effect productive change.

As we approached the possibilities inherent in revising our first-year composition curriculum, we began by deliberately pausing to consider how we could both build upon existing practices and foreground equity. As we began to revise, we also sought to create space for students to pause; to rhetorically listen to perspectives, voices, and arguments that may be different from their own. We provided readings that ask students to consider the intersections between race, language, power, and identity. Rather than simply ask students to respond to these readings, we first asked students to summarize them as part of a major assignment. Summary, a process practiced by many compositionists, can be conceptualized as a means to encourage rhetorical listening. Rather than moving immediately to respond, argue, deflect, or defend, we intentionally ask students to carefully, ethically, and accurately reflect the author's perspectives using words and ideas the author would likely recognize as their own. Summary asks instead that students pause; to pay attention to the author's argument and what the author is actually saying—a crucial practice to engage in, particularly when reading authors and texts whose voices and perspectives challenge dominant narratives and which are therefore often dismissed or silenced by society. Summary is not the end goal, of course, as students still need to analyze a text and incorporate their summary and analysis into their argument—but without careful attention to summary and rhetorical listening, teachers and students risk ignoring or silencing critical perspectives. Teachers from all disciplines can emphasize the importance of summary as a rhetorical strategy when reading challenging texts in order to put into practice meaningful pauses between reading and responding.

Questions teachers might ask when pausing are:

- **Pause to Encourage Openness:** Where in my classes can I create time to pause? What strategies will encourage rhetorical listening and openness to multiple perspectives?

- **Pause to Disrupt Dominant Perspectives:** In what ways can I use pauses to disrupt normative

perspectives? How might my own deliberate pauses create space to reconsider my pedagogies and practices?

- **Pause to Examine the Curriculum:** How can my curriculum make space to listen closely to marginalized arguments and perspectives? What resources might/should be provided by my institution to support teachers as we pause?

Reflect

A resilient pedagogy requires frequent and critical reflection on our teaching practices. While not all disciplines share the same definition of reflection, rhetoric and composition utilizes reflection to promote metacognition on a process, to question what we believe we know, and to provide possible spaces for change and revision. However, here we draw from interdisciplinary conversations on reflection to disrupt our own understanding of the concept. In connecting science studies, physics, philosophy, queer theory, and feminist studies, Karen Barad (2007) complicates many disciplinary definitions of reflection. According to Barad, uncritical reflection acts as a mirror: "To mirror something is to provide an accurate image or representation that faithfully copies that which is being mirrored" (p. 86). When framed this way, reflection becomes "a pervasive trope for knowing" (Barad, p. 72), which can suggest fixed meanings and knowledges, rather than the productive change we seek. Barad instead argues for practices based on "differences that matter" (p. 89), that do not seek neat and tidy representations of reality, but that are grounded in "accountability and responsibility" (p. 90) for one another. We highlight this conversation as a productive disruption to our own understanding of what reflection, meta-cognition, or self-assessment might do in our teaching, so that reflection can more intentionally become "a critical practice for making a difference in the world" (Barad, p. 90).

In composition, teachers routinely build in opportunities for students to reflect on their composing and revision practices. These reflections come in multiple forms: in-class writing prompts in which students self-assess their own understanding of a text, weekly reflections in which students analyze their engagement with course content, and reflections that accompany major writing assignments in which students discuss the metacognitive process of composing. When framed within the context of seeking multiple perspectives and rhetorically engaging with texts that argue for antiracist practices (e.g., Kendi, 2019), reflection asks students to connect everyday lived experience with the structures that influence and inform their perspectives. Collectively, reflection also serves as a form of dialogue between student and instructor, ensuring that the student and their lived experience remains a central focus of the class. As we reflected on the need for engaged dialogue on antiracist and critical pedagogies, our composition program began monthly professional inquiry sessions so that teachers could come together as a community to pause and reflect on our teaching, supporting and challenging each other in our continued efforts to disrupt dominant teaching practices. Our

goal in these classroom and program reflections is for students and teachers to do more than simply mirror what they already know, but to utilize reflection as an ongoing means of engaging in critical work.

Questions teachers might ask to encourage critical and ongoing reflection include:

- **Reflect to Challenge Current Practices:** In what ways does my curriculum and pedagogy mirror what I already know, or believe I know, about a particular concept? In what ways do I hope my pedagogy might become a space for critical practice?

- **Reflect on Meaningful Differences:** How can my pedagogy be accountable to differences that matter? How might our pedagogies reject the need for neat and tidy representations and seek meaningful and disruptive differences?

- **Reflect on Structural Influences:** How do racism and normativity shape my disciplinary context? How do issues of power and privilege influence my everyday teaching practices?

Revise

Revision in writing is often conflated with editing or proofreading. Writers may consider revision as the act of tidying up or fixing errors rather than considering nearly every step of the writing process as part of an ongoing revision of ideas. In fact, some writers may consider revising as a concrete step or moment in time that marks the period just prior to completion: once writing is revised, writing is finished. But revision is most usefully practiced as a process of reconsidering meaning, complicating thinking, and questioning what we originally knew. Cathleen Breidenbach (2006) describes how writing can become more than mere editing and, in fact, become illuminating and rewarding. She writes that as we revise, "the words we write reveal truths we didn't know we knew; language can create knowledge; revision can facilitate discovery. This business of revising can be revelatory, inspiring, and deeply satisfying" (p. 200). Revision can help us recognize new insights as well as the potentially fraught realization that we might be wrong. As a result, revision is an investment in understanding and in the creative process—one that may require great effort in a search for forms, ideas, and structures that productively disrupt previous knowledge and understanding.

Revising our composition curriculum to foreground equity and respond to the pandemic was, at its core, an exercise in the recursive, complex process of revision, one that faculty in many disciplines engage in regularly as they reconsider course delivery and instruction. While our revised curriculum included practices common to composition, the process of revision allowed us to make explicit and deliberate moves to respond to the exigencies of the current moment, in addition to embracing established practices within composition and rhetoric that are designed to enact equity in the classroom (Baker-Bell, 2020; Inoue, 2015; Waite, 2017). In addition to reconsidering how the work we assigned fit into the learning outcomes of the course, we also

needed to revise how and whether our curriculum promoted the principles of equity and inclusion we value as a program. Reading lists became more flexible and diverse. Assignments included more opportunities for collaboration and drafting. And our final assignment for the class became an opportunity for students to engage in a more complex revision process that asked them to "remix" a previous essay to connect with new audiences and genres. As a result, revision continues to be part of the implicit and explicit work of the course, encouraging students to reconsider their own work as part of an ongoing conversation that understands knowledge as socially constructed and inherently collaborative.

Questions teachers might ask as they revise include:

- **Revise to Consider Inclusion:** How do current disciplinary practices allow for equity and inclusion? How can I embrace flexible design principles to increase equity in my course delivery?

- **Revise to (Re)Design Learning:** How do I model the effort and reward of revision in the course materials and assignments I teach? In what ways do I purposefully engage in ongoing revision to reconsider how I might disrupt commonplace practices that can equitize learning for my students?

- **Revise to Promote Revision:** How might my current teaching practices benefit from including opportunities for students to meaningfully revise their work?

Recursive Resilience: An Ongoing Conclusion

A resilient pedagogy that makes space for productive disruptions must be recursive and grounded in equity. Because the systems that create and reinforce structure oppressions are continually shifting, so too must any framework be flexible enough to respond to these ongoing shifts. As such, the framework we describe above—question, seek, pause, reflect, and revise—is not intended to be static, but instead designed to be fluid and responsive to more than the current moment. Carr and Micchiche (2019) "theorize resilience as processual, recursive, and creating incremental changes that move toward culture change, one hesitation at a time" (p. 210). As a result, resilience is not something to be achieved but a process to continually undertake. Therefore, we must also allow for failure. As Carr and Micciche note in their own conclusion, "resilience strategies also make space to acknowledge that we are going to get it wrong a lot of the time" (p. 221).

Yet we also acknowledge that engaging in resilient pedagogies can be exhausting, particularly for those whose identities and positionalities require that they stay continuously engaged in this work. Kalish et al. (2019) argue that resiliency is often forced onto teachers and students with the fewest resources, and so, while we encourage resilient pedagogies grounded in equity, we also seek to complicate the expectations of resiliency. Because resilient pedagogies can also be sources of emotional labor, teachers must have resources and springs of renewal. Teachers who seek productive disruptions should also seek the support system of

critical friends, allies, or accomplices who can collaborate with them in this work—and then pause together to reflect on their collaborative work. As Carr & Micciche (2019) emphasize, "Resilience is a response to systemic, structural problems rather than individual ones. It is a group activity, a protracted, evolving response to evolving situations or problems" (p. 211). We hope our emphasis on interdisciplinary dialogue underscores the importance of challenging systems of inequity together, drawing on the strengths of each teacher and discipline as we continue this work. As Patterson (2013) reminds us, classrooms can be framed in terms of an ecosystem wherein all parts of class—teachers, students, cultural influences, and present and future moments—are connected. This model of thriving ecosystems may help us define what resilient pedagogies are and can be—not practices immune from change, damage, or failure, but instead adaptive and collaborative in process, and grounded in inclusion and equity.

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3.

HOW ADULT EDUCATION CAN INFORM OPTIMAL ONLINE LEARNING

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How Adult Education Can Inform Optimal Online Learning

David's Story

I first met Krissy Wilson in 2015 when I was asked to design a new graduate course at Northwestern University on learning environment design. Krissy was part of the talented Distance Learning team in the School of Professional Studies. I was a teacher, instructional specialist, and reluctant learning management system administrator at an arts-based city college where I had worked for almost 15 years.

During the development of the course, I created a one-week-long module titled "Preparing for the Apocalypse: Using the Internet to Survive Downtime." In my introductory video of the week's subject matter to the class, I said, "I know the title of this module sounds very dramatic, and I wanted it to be. Being an educator in the information age requires careful and critical reflection about how we view technology and the relationship of people to technology."

Little did I know how prophetic this title would turn out to be. While I was referring to intranets and school learning management systems at the time, I never dreamed it would be the actual school itself that would be shut down, yet in both scenarios the message that the internet operates as a communication safety net holds true.

I was fortunate enough to be able to join the Distance Learning team at Northwestern in 2017 as a learning designer and still teach Learning Environment Design. Krissy and I have teamed up on several research projects and presented at conferences as we explore optimal online learning and emerging pedagogies.

Krissy's Story

I got to know David Noffs first as a faculty member in the Master in Information Design and Strategy program in the School of Professional Studies at Northwestern University. Before he joined the Distance Learning team as a learning designer, he was already well-known to all of us as "power faculty," the kind of instructor who took online course development both seriously and creatively and *always* showed up for professional development.

While I knew David first as a faculty member and then as an instructional designer, my path was the inverse of his. Prior to being a learning designer, I was a part-time instructional designer in the adult and continuing studies college at another private university in Chicago, a position I grew into from a student elearning content developer position. It was only after David and I had been working together for a few years that I began to teach professional writing at another Chicagoland university. Although I had a perennial interest in education, I was formerly a teaching assistant, tutor, or writing fellow; now, as the news of COVID-19 broke and we all sheltered in place to begin working remotely, I found myself teaching my first course solo.

Prior to COVID-19, our team was working successfully with one remote day per week. Many of the faculty members we partnered with on course developments were not in the Chicagoland area, and we used video conferencing tools, shared documents, webcams, headphones, microphones, and the learning management system to develop coursework without ever meeting each other in person. We thought we had it figured out. Our team joked that we had no need for an office, that we could do our jobs entirely remotely. Why didn't we? Why *shouldn't* we?

Despite the circumstances, David and I have continued to collaborate on research projects and conference presentations, and I am grateful for his guidance and support.

A Note on Form and Style (The Medium is the Message)

In this chapter, we rely heavily on reflection and conversation. It is intentionally autoethnographic, as we demonstrate the values espoused by the theorists we cite. For example, the reflective stories we tell hark back to Mezirow's (2009) priority to "[Encourage] a reflective practice" (273). Consider bell hooks' 1994 conversation with Ron Scapp in *Teaching to Transgress* a model for our tone (pp.131–165). As we participated in a university-wide online teaching practicum this summer, we held conversations with faculty that helped to develop the framework we share here. In other words, the form and structure of this chapter

speak to the content, and honors not only the educators whose research we rely on but also our own recent experiences teaching online in a global pandemic.

The Difference Between Emergency Remote Teaching and Optimal Online Learning

The idea behind this chapter began when the instructors at Northwestern University's School of Professional Studies were in the process of grading final projects and exams from the Winter 2020 quarter. As part of the Distance Learning team (along with Northwestern IT, the library, the Searle Center for Advanced Learning and Teaching, and other faculty support staff across campus), we prepared to train over 1,000 faculty members in little over a week on how to move their course content, rethink their activities, and start teaching online for the spring quarter. We were witnessing and were a part of "The Great Onlining of 2020," as George Siemens (2020) tweeted on March 11th.

And it wasn't just Northwestern that moved rapidly; according to a survey conducted by Bay View Analytics and published in Inside Higher Education (Ralph, 2020), 90% of American colleges and universities had about a week to move their courses, instructors, and students online. As a result, the quality of instruction understandably suffered. For example, 80% of instructors used synchronous video to teach, while 48% said they lowered their expectations for the amount of work students would be able to do. Another 32% said they had "lowered the expectations about the quality of work that my students will be able to do."

Several months into The Great Onlining of 2020, there appears to be a consensus among many academic researchers and scholars that the move to emergency remote teaching, now commonly referred to as ERT (Hodges et al., 2020), has created a two-tiered system of online education: ERT courses and thoughtfully designed online courses. We would like to place ERT on the lower tier and optimal online learning (OOL) on the upper tier. The speed with which thousands of courses were moved online is staggering. Development cycles that are normally six months were reduced to mere weeks. While ostensibly only a temporary or emergency fix, this has led to the inevitable comparison between online learning and face-to-face learning.

Hodges et al. (2020) warn us that "Online learning will become a politicized term that can take on any number of meanings depending on the argument someone wants to advance" (para. 3). Trollish articles have already appeared with sweeping and uninformed headlines. Some examples include "Trump Says, 'Virtual Learning has Proven to be Terrible,' Threatens Cuts to Federal Funds" (Singman, 2020); "The Results Are In for Remote Learning: It Didn't Work" (Hobbs and Hawkins, 2020); and "The Real Reason Why The Pandemic E-Learning Experiments Didn't Work" (Christensen, 2020), to illustrate just a few. The usual theme is that distance learning does not work or is inferior.

Many universities scrambled to ramp up their online preparedness by mandating summer boot camps for full- and part-time faculty. These practicums, in which we have participated as consultants, are intended to address the obvious deficiencies in ERT courses. However, despite these efforts, there is still a gap in the underlying practice of online instruction that has become exposed under these extraordinary conditions.

Even under the best of circumstances, how can online learning possibly fill the needs of students yearning for human contact and a sense of college community? While virtual teaching can present the curriculum, how will schools address the social, emotional, and experiential needs that physical campuses offer?

But what is missing from ERT? Below is a list of some of the missing components:

- Learner-centered teaching

- Community building

- Experiential learning opportunities

- Opportunities for critical thinking

- Meaningful self-reflection

- Transformative learning

While many educators may shrug their shoulders at this dilemma, leading adult educators and philosophers such as Eduard Lindeman, John Dewey, Jane Adams, Cyril Houle, Jürgen Habermas, Abraham Maslow, Carl Rogers, Malcolm Knowles, Paulo Freire, bell hooks, Jack Mezirow, Maryellen Weimer, Stephen Brookfield, Rena Palloff, and Keith Pratt have long extolled the virtues of community building and creating learner-centered cultures in learning communities.

Challenging undergraduates, for example, not only to participate in but to create and lead virtual communities can fill some of the voids laid bare by half-empty campuses and student groups struggling to meet socially. By leveraging extensive research conducted on the roles of online learners and teachers, and by making self-governance and action learning pillars of online learning, we may be able to nurture a new age of online learning, informed by adult education theory.

Before we begin discussing adult education strategies that can improve the online learning experience, we felt that it may be helpful to provide our own glossary of key elements we will reference often, specifically in the context of online learning.

Glossary of Key Elements Used in OOL

Learner-Centered Teaching

The subtle yet important difference between learner-centered teaching and student-centered teaching can be confusing. Maryellen Weimer (2002) persuades us to lean toward the former in our own design and teaching practice. She points out that the term student-centered teaching places an emphasis on student needs rather than learning needs. Student-centered teaching implies a paradigm where education is a product served up by faculty to student consumers. Providers of such student-centered teaching are more likely to include LinkedIn Learning authors and YouTube channel creators. Learner-centered teaching, on the other hand, "focuses attention squarely on learning: what the student is learning, how the student is learning, the conditions under which the student is learning, whether the student is retaining and applying the learning, and how current learning positions the student for future learning" (p. xvi).

Community Building

Community building is a core tenet of adult education. Habermas' (1984) critical theory of communicative action and emancipatory knowledge along with Mezirow's (1991) theory of transformative learning hinge upon creating a reflective community of learners.

Martin Dougiamas, who wrote the original code for the Moodle Learning Management System, and Peter Taylor (2003) describe the online pedagogy behind their work to create an open-source learning management system as a natural progression based upon social constructivism and social constructionism. Through the perspectives of collaborative discourse and the individual development of meaning, "learners are apprenticed into 'communities of practice'" (p. 3).

Moreover, Palloff and Pratt (2007) organize the elements that must be present to support the formation of online communities into three groupings: people, purpose, and process. They assert that "the outcome of a well-constructed, community-oriented online course is reflective/transformative learning" (p. 17).

Experiential Learning

John Dewey, Confucius, and a host of educators and scholars agree that a student learns more from doing than from only listening or seeing. Experiential learning acknowledges that people learn from experiencing a new activity or solving a problem. Kathleen Cercone (2008) combines many prominent adult learning theories in her compilation of precepts that include Knowles' (1984) principles of andragogy and Mezirow's (2000) transformative learning theory. The following are selected recommendations from her list:

- Adults need to be actively involved in the learning process.

- Adults need to see the link between what they are learning and how it will apply to their lives. They want to apply their new knowledge. They are problem-centered.

- Adults need to feel that learning focuses on issues that directly concern them and want to know what they are going to learn, how the learning will be conducted, and why it is important. The course should be learner-centered vs. teacher-centered.

- Adults need to test their learning as they go along, rather than receive background theory.

- Adult learning requires a climate that is collaborative, respectful, mutual, and informal.

- Adults need to self-reflect on the learning process and be given support for transformational learning.

- Adults need dialogue and social interaction must be provided. They need to collaborate with other students (pp. 154–159).

Transformative Learning

Mezirow's theory of transformative learning was first published in *Adult Education Quarterly* in 1978. After decades of discussion and refinement, Taylor distilled the theory into six key elements to introduce *Transformative Learning in Practice* (2009), in which Mezirow acknowledged it as "an evolving theory" with "a coherent group of general principles" (p. 18). These principles include individual experience, critical reflection (see Self-Reflection), dialogue, holistic orientation, awareness of context, and authentic relationships, and typically begin with a "disorienting dilemma" (p. 19).

A case study by Dirkx and Smith (2009) in the same text anticipated pushback to emergency remote teaching online, observing that "educational technology in general, and online or e-learning in particular, seems an odd location in which to look for and consider the poetry and mystery of transformative learning" (p. 57). Faculty have made transformative experiences happen in their face-to-face classes and are now working to emulate those experiences online; however, they are hampered by the assumption that transformative learning is more effective when students are all in the same physical location. Dirkx and Smith also assert—and we agree—that "online environments provide evocative contexts for . . . dimensions of adult learning," including and beyond the "rational, reflective, and instrumental" (p. 58).

Self-Reflection

Taylor acknowledges self-reflection as a vital component of the transformative learning model and defines it as "Questioning the integrity of deeply held assumptions and beliefs based on prior experience" (p. 7). He goes

on to describe critical reflection as a skill that students can develop and suggests that instructors create opportunities for three kinds of reflection: "content (reflection on what we perceive, think, feel, and act), process (reflecting on how we perform the functions of perceiving), and premise (an awareness of why we perceive)" (p. 7). Taylor, citing Kreber (2004), considers premise reflection crucial for instructors themselves, in order to raise awareness of "why they teach [more] than how or what to teach," (p. 8) a goal of this chapter.

In 2020, the Great Onlining and move to ERT functions as Mezirow's "disorienting dilemma," the conduit for premise reflection for both instructors and students. If we are to change our own assumptions—and others' assumptions—about the potential for optimal online learning, it will require self-examination. For many, this could be a fraught process. We are not just questioning the theories that guide our instructional decision-making; instead, we embody our pedagogies and are faced with examining, critiquing, and ultimately changing ourselves. hooks observes, "one of the things blocking a lot of professors from interrogating their own pedagogical practices is that fear that '*this is my identity and I can't question that identity*'" (hooks' emphasis, p. 135).

Critical Thinking

The Stanford Encyclopedia of Philosophy (2018) succinctly defines critical thinking as "careful thinking directed to a goal," (para. 1) but critical thinking still escapes easy definition for most academics. For a brief glimpse into its complicated history with adult education, consider that Dewey's 1910 coining of the term cited anachronistic examples. Well-known educational tools such as Bloom's Taxonomy (1956) rely on critical thinking theory to support their frameworks, but they also pull critical thinking theory apart, as in Ennis' "proposed 12 aspects of critical thinking as a basis for research on the teaching and evaluation of critical thinking ability." As recently as 2019, scholars have sought to continue classifying and structuring critical thinking models to make them more approachable, comprehensive, and usable. (Recursively, academics also study *other* academics' perceptions of the definition of critical thinking.)

So, while we acknowledge that any single definition of critical thinking may be contested, it is important to distinguish it from self-reflection. They share an origin in Dewey, who commonly interchanged the terms "critical thinking" with "reflective thinking." While critical thinking and decision-making may be informed by past personal experience (hence, reflective thinking), critical thinking asks students to respond in the present moment. Given a situation—either in real life, or in a case study or scenario—what would you do?

In the context of The Great Onlining of 2020, critical thinking is a term we must not only personally define, but a skill we must personally cultivate. In order to successfully interpret and modify activities and materials from a face-to-face course for online learning, we must think critically. If we are literally and figuratively extending the boundaries of our teaching, we must return to our basic Stanford definition and exercise careful thinking with a goal in mind. By careful, we don't mean tentative; instead, we mean *with* care.

Our shared goal as instructors is optimal online learning, and we can create activities and assignments designed to develop critical thinking skills in our students to help accomplish that. However, it is not enough to coach students without developing these skills in ourselves.

In 2018, Christopher Schaberg wrote an opinion piece for *Inside Higher Ed* titled "Why I Won't Teach Online," insisting that he could not develop meaningful relationships with students or successfully hold a seminar discussion, complete with "awkward silences."

Imagine our surprise when, in September 2020, he published another opinion piece titled "Why I'm Teaching Online." Among his reasons? "It's a chance to learn," he writes. "I can use this time to try new teaching methods and to make my pedagogical values newly vivid." He goes on to describe how he has students collaborate using Google Docs and is "teaching media literacy while also using the internet as a living archive, ready for interpretation and critical thought" (Schaberg 2020).

This experience serves as an excellent example of how an instructor may use critical thinking to examine their own pedagogy, and in turn create new opportunities for critical thinking among students. (And, to draw continued connections, demonstrates the power of the disorienting dilemma when paired with self-reflection.)

NOTES

Optimal Online Learning Strategies

Now that we have provided an overview of the difference between ERT and OOL and a glossary of key elements for effective teaching guided by adult education theory, we will provide some practical examples and strategies for OOL.

Table 1 shows how adult education imperatives we have discussed in this chapter may or may not be addressed in online learning environments.

Table 1
The Difference Between ERT and OOL Approaches to Online Learning

Adult Education Imperative	ERT Approach	OOL Approach
Teacher-Centered Learning	ERT classrooms often resort to Freire's (2010) "banking model" by relying on synchronous "webcam lectures."	OOL classrooms leverage bell hooks' (1994) "teaching to transgress" model, encouraging students to question assumptions and power relationships.
Community Building	ERT classrooms pay lip service to the community of online learners.	OOL celebrates communities and individual learners, their life stories, and builds on Knowles' (1980) idea that learners like to solve specific problems that are relevant to them and allow them to be part of the planning process.
Experiential Learning	ERT classrooms lack opportunities for open dialogue and experiential learning.	OOL classrooms nurture facilitated asynchronous discussions in which students feel that they can speak openly, sharing life stories and engaging in consensus building.
Critical Thinking	ERT classrooms tend to be outcome-driven, and critical thinking is viewed as too difficult to achieve. Proctored virtual exams represent rigorous learning.	OOL values critical thinking by having students openly share their unique perspectives in group settings, engage in problem-solving activities, and debate-style discussions. Solving complex problems represents rigorous learning.
Self-Reflection	ERT classrooms lack opportunities for self-reflection.	OOL encourages self-reflection through reflective essays, online journaling, ePortfolios, and other strategies
Transformative Learning	ERT classrooms lack opportunities for transformative learning.	OOL strives for "transformative learning" by having students challenge one another respectfully through role-playing and allowing for difficult discussions. Disorienting dilemmas are welcome (Mezirow, 2000).

While we hope Table 1 helps clarify the difference between ERT and OOL, we feel it is important to go from the theoretical to the practical. The following sections show how the OOL strategies described above can be applied to virtual classrooms.

Going from Zoom Lectures to Asynchronous Discussions

One of the most common features of ERT is the over-dependence on synchronous learning and lectures through the use of web conferencing software such as Zoom and Webex. During our work with faculty members over the spring and summer of 2020, we were part of a team that struggled at times to convert new online teachers to the practice of asynchronous discussion boards. Ironically, our struggles during the pandemic reflect a struggle that adult educators have had for the better part of the 20th century and now continuing into the 21st century.

Paulo Freire (2010) introduced his "banking model" of teaching in his seminal work, *Pedagogy of the Oppressed*. While adult educators, researchers, and social activists like John Dewey, Eduard Lindeman, and Jane Adams had long extolled the virtues of engaging learners in the lifelong process of education rather than solely lecturing to them, Freire drove home the notion that learners were not passive vessels waiting to be filled with information the teacher would share at the appropriate time and place of learning.

According to Freire, "In the banking concept of education, knowledge is a gift bestowed by those who consider themselves knowledgeable upon those whom they consider to know nothing" (p. 72).

But while Freire was challenging state-controlled education systems after being exiled from his native Brazil in the late 1960s, his ideas resonated with adult educators who supported a more humanistic and liberating approach to education throughout North America and Europe, in particular. Moreover, his approach reinforced a trend in education in the United States that had been growing since the mid-20th century. Namely, an increasing focus on the learner as a "unique individual in whom all aspects of the person must be allowed to grow in the educative process" (Elias & Merriam, 2005, p. 124).

Merriam notes that education has historically gravitated to perpetuating the mainstream culture and societal norms. She also believes there is an assumption that knowledge is a commodity that is passed on from generation to generation and that "society's elders know what knowledge and skills are necessary for maintaining the cultural status quo" (p. 123).

While educators have made great strides to empower students with a more humanistic style of teaching, including learner-centered teaching and experiential learning, ERT became a retrograde force compelling many teachers to instinctively fall back to a position of "taking back control" of the classroom through lecture-based, albeit virtual, instruction.

During our normal course development process in distance learning, we spend a great deal of time with faculty not only talking about the importance of asynchronous discussion boards but actually modeling their use during six weeks of online workshops with each faculty developer. The lack of time spent demonstrating the advantages of asynchronous discussions often leads to ERT faculty omitting their use entirely.

Online discussion boards are foundational to successful online learning communities. They embody many adult learning constructs, some of which include:

- Critically reflective writing

- Community-constructed knowledge

- Exposing learners to different worldviews

- Giving voice to all

Giving students time to think about answers to questions raised in class is a distinct advantage that asynchronous learning environments have to offer. And yet, this clear advantage is often underutilized and sometimes entirely overlooked in ERT.

According to Doug Lederman (2020), ERT led to 80% of instructors in one survey resorting to synchronous video "consistent with overwhelming anecdotal reports that many professors, especially those inexperienced in incorporating technology into their teaching, responded to this transition largely by clinging to the familiar—delivering lectures or holding class discussions with students via webcams."

One of the most difficult transitions teachers can make is going from lecturer to listener. Another theme passed down through generations of adult educators is the importance of listening to others and making sure that everyone has a voice. Eduard Lindeman (1926) developed the "circular response exercise" in the 1930s which was used by David Stewart (1987) and then passed on to Stephen Brookfield (2017) who describes it as a way to "democratize group participation, to promote conversational continuity, and to give people some experience of the effort required in respectful listening" (p. 124).

The circular response exercise essentially requires students (optimally 8 to 12) to form a circle. One student starts the discussion on a given theme, then each student speaks, one at a time, for two minutes, going around the circle paraphrasing the previous speaker's comments, then adding their own contribution. While they do not have to agree with the previous speaker, they must incorporate the ideas of the previous speaker into their own contribution. They are not free to speak out of context nor is anyone else permitted to interrupt in any way. The conversation then opens up into a free discussion with no ground rules.

In asynchronous discussions, the problem of managing extroverts and introverts is largely solved by the medium itself. All that is needed is for instructors to take advantage of the medium and inject the theme and

rules of engagement.[1] This, in itself, is a skill that online instructors need to nurture and develop. However, one can easily see the influence of the circular response exercise in the usual instructions provided to students in online synchronous discussions; post a substantial opening statement to the group, and then reply to at least two other students.

To emphasize the importance of asynchronous discussions, Flower Darby (2020) says, "As a veteran online teacher, I view discussion forums as the meat and potatoes of my online courses. They are where my teaching happens—where I interact with students, guide their learning, and get to know them as people. The joy I've come to find in online teaching stems directly from those interactions."

Nimble Redesign of Critical Thinking Activities

In The Great Onlining of 2020, "Almost two-thirds [of instructors] said they changed 'the kinds of assignments or exams' they gave to students" and 46% "dropped some assignments or exams," (Lederman, 2020).

In an emergency remote teaching context, in which faculty have a very short amount of time to develop and teach their course in a completely different modality, critical thinking is often the primary strategy abandoned. First, instructors, pressed for time, consider critical thinking activities too difficult to achieve in online learning; but also, and more fundamentally, instructors do not feel that time spent applying critical thinking skills to their individual course design contexts is worthwhile.

The first assumption, that critical thinking activities are not well-suited to online instruction, may be driven by experiences with computer-based training (CBT), predominantly self-paced instruction in the form of a slide-based interactive. If an instructor's only prior experience with online learning is compliance training—voiceover slides followed by multiple-choice questions—it is difficult to imagine all of the possibilities that online learning affords.

The second assumption, that time spent thinking critically about creative activities and assessments is time wasted, may stem from either a lack of teaching experience (as in the case of graduate students who may be new to teaching) or from many years of teaching experience (as in the case of the long-term instructor who receives rave reviews as an engaging face-to-face lecturer).

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1. While a full discussion on the impact of effective asynchronous discussions is not possible here, the reader can find numerous articles on the topic, including this blog post by one of our own colleagues, School of Professional Studies lecturer Leslie Fischer, "Five Instructor Practices that Cultivate Online Discussions" (2015).

From speaking with instructors on both ends of the spectrum in the university-wide practicum, it was clear that instructors both chose not to critically engage and also felt that they were not capable of critically engaging due to a lack of technology skills and/or time. As a result, they felt trapped in an online learning environment that they were not comfortable using and overwhelmed by the amount of time spent developing course materials that they felt were destined to be less effective, such as video lectures. In such a circumstance, there is simply no way to squeeze in time to develop OOL strategies. Understandably, they focused on direct translation of course materials as opposed to transformation.

A situation from Krissy's class, a five-week asynchronous online professional writing course for undergraduate business students, provides one example of how an instructor could apply critical thinking to course design and structure to modify a critical thinking activity for the unique needs of a COVID-19 online teaching environment.

She began the course with an exercise about audience, in which students write three emails on the same topic to three different groups: a team of four peers, a team supervisor, and to the entire organization. It seemed pragmatic to choose remote work policies as the core content for the activity, as business students would likely encounter such a topic in their future workplaces. She composed three case studies:

- How would you email a group of four peers to learn more about their opinions of remote work and what policies they would prefer if you were to advocate for them?

- Assuming your peers would like to work remotely at least some of the time, how would you email a supervisor to share your peers' opinions and request time to discuss?

- Assuming you met with your supervisor and they agreed to your plan, how would you inform everyone in the office of the changing work-from-home policy?

This assignment worked well in winter 2020, for the first section of the course in January and even for the second section of the course in early March. However, by the time the Spring term came around, it was clear that some changes needed to be made.

For spring, she gave students the choice between two slightly different scenarios. One assumed that the office had abruptly started working remotely due to COVID-19, and that work-from-home policies needed to be codified. The other looked to the future, asking students to imagine a return to the office after COVID-19, and requesting a work-from-home policy having proven that they had already worked remotely successfully.

Come August, as it became clearer that COVID-19 would affect our lives for longer than a few weeks or months, she tweaked the first scenario for the Fall class again. This time, the student role-plays an employee taking stock of hastily established work-from-home policies in order to problem-solve for needed changes. It

was important to her to still provide the second option, allowing students to mentally fast-forward to a time when COVID-19 is no longer a concern.

This activity stands in stark contrast to typical outcome-driven ERT, in which critical thinking is considered too difficult to achieve. The focus is on converting content such as slides and lectures, and then delivering it to students, as if they are vessels to simply receive knowledge. Optimal online learning more broadly develops critical thinking activities and then considers what resources students will need to respond in an informed manner.

In this activity, students encounter a disorienting dilemma in order to achieve transformative learning through self-reflection and open sharing of unique perspectives (Mezirow, 2000). This activity does not ask students to memorize or recall, but rather to use resources to complete complex tasks and form complex arguments and opinions. It is the exact opposite of "teaching to the test," in that every student will compose a different message; there is no correct response, but a range of effective and creative responses.

Early in the course, students take stock of their prior knowledge through self-assessment and goal-setting activities. Throughout the course, students revisit those goals, take stock in their progress, plan for forthcoming activities, and identify both strengths and opportunities for improvement. Toward the end of the course, students synthesize their experiences prior to and throughout the course to reflect both topically and metacognitively. What writing strategies did they develop, certainly, but how did their perspective change?

Of course, it is critical to cultivate an OOL environment where students feel comfortable sharing prior experiences, challenging each other, and encountering disorienting dilemmas while in a respectful, facilitated environment.

From Teaching to Students to Nurturing a Community of Learners

In over 15 years of working with faculty members, we cannot count how many times we have heard the phrase, "I learn so much from my students." And yet, in ERT we have paid lip service to the concept of a community of learners. In our day-to-day teaching and especially in online learning communities, building a community of learners inclusive of the teacher is paramount to OOL.

Palloff and Pratt (2007) point out in their seminal work, *Building Online Learning Communities*, that

> the principles involved in the delivery of distance education are basically those attributed to a more active, constructivist form of learning—with one difference: in distance education, attention needs to be paid to the developing sense of community within the group of participants in order for the learning process to be successful. The learning community is the vehicle through which learning occurs online. (p. 40)

In David's class on learning environment design, he has students create a community charter in a shared, cloud-accessed document while working on their other readings and assignments during the first couple of weeks of class. With few instructions provided by him, it is as much a lesson in self-governance and democratic participation as it is an opportunity to get to know one another and negotiate working relationships, roles, and responsibilities. Students often reach out to tell him how difficult the activity is, but by the end of the class, many of those same students report it as being one of the most rewarding and enlightening experiences they have had in an online class.

Malcolm Knowles (1984) built his life's work upon the European concept of andragogy to describe the art and science of helping adults learn. However, while his initial work saw pedagogy, the education of children, being different from that of andragogy, as he developed his theories he came to the regard "the pedagogical and andragogical models as parallel, not antithetical" (p.12).

Knowles once said that he regarded Eduard C. Lindeman as "the single most influential person in guiding my thinking," (p. 3) and in turn, Knowles' own andragogical system of concepts has now become a guiding force for a new generation of adult educators, learning designers, and those of us who advocate for OOL.

While Knowles originally summarized andragogy as being premised on four assumptions, he later expanded them to six. We have summarized them here:

- **Self-Concept**: Adults believe they are responsible for their lives and they want to be treated as capable and self-directed.

- **Life Experiences**: Adults come into an educational activity with different experiences than younger learners. These unique experiences should be respected and taken into account when designing learning activities.

- **Readiness to Learn**: Adults become ready to learn things they need to know and do in order to cope effectively with real-life situations.

- **Practical**: Adults are task-centered/problem-centered in their orientation to learning.

- **Goal Oriented**: Adults want to know why they need to learn something before undertaking to learn.

- **Motivation**: Adults are responsive to some external motivators (e.g., a better job, higher salaries), but the most potent motivators are internal (e.g., desire for increased job satisfaction, self-esteem).

With the massive transition to online learning, the parallel paths of pedagogy and andragogy have moved closer together. OOL requires an active and constructivist approach to learning as Palloff and Pratt (2007)

stated. Some of Knowles' assumptions can and should be applied not only to adults learning online but to adolescents as well.

Mike Klein (2019) uses an activity with his master's- and doctoral-level students called "I am from . . . ." He frames the activity as an exercise in self-knowledge, intersectional identities, and critical pedagogy. Klein states that "as practitioner-scholars, self-knowledge is essential in order to problematize and evaluate identity construction, and to understand biases, prejudices, and racialized assumptions" (p. 89).

He describes the "I am from" activity as a face-to-face discussion that takes place as follows:

- A 2- to 3-minute introduction in which the instructor passes around a worksheet with the phrase, "I am from . . . " at the top of the page. Klein suggests the instructor model the activity to "set expectations for the quality of the responses" (p. 92)

- 10–12 minutes for students' written responses

- 15 minutes for students to read their responses out loud

While Klein's full worksheet of "I am from . . . " responses is too extensive to list here, he includes responses such as:

- I am from (geography)

- I am from (gender)

- I am from (class)

- I am from (ethnicity/race/nationality)

. . . and many more.

Klein provides an example of the type of answer he is expecting with his own answer to what class he hails from.

> I am from . . . a lower-middle-class family who made me feel rich without having material wealth, substantial income, or financial resources (p. 92).

Lott Hill, Soo La Kim, and Megan Stielstra (2016) used to kick off all-day faculty workshops at the Center for Innovation in Teaching Excellence at Columbia College in Chicago with a similar activity called the "mapping exercise." The questions were similar, but the participants were asked to move around in space as if

positioning themselves on a map to describe where they were from, then where their families were from, and lastly, where they themselves called home.

Such simple activities inspired by the critical pedagogy of adult educators like Paulo Freire (1976), and bell hooks (1994) can have a profound impact on OOL if only adapted to a fully online environment.

Here is our own adaptation of Mark Klein's "I am from . . ." activity to an online class:

- Create a 2- to 3-minute video where the instructor introduces the activity, provides instructions and gives an example of how they would answer one or more of the questions.

- Create an asynchronous discussion board and allow students to post their answers to five possible "I am from . . ." queries by mid-week (allowing them time to critically reflect on their identities and self-knowledge).

- Ask students to respond to two other students' answers with follow-up questions in written, audio, or video format.

More than just a virtual icebreaker, the "I am from . . ." online activity demonstrates how adult education activities designed for face-to-face environments can be effectively leveraged for a wider audience using asynchronous discussion boards and multimedia.

NOTES

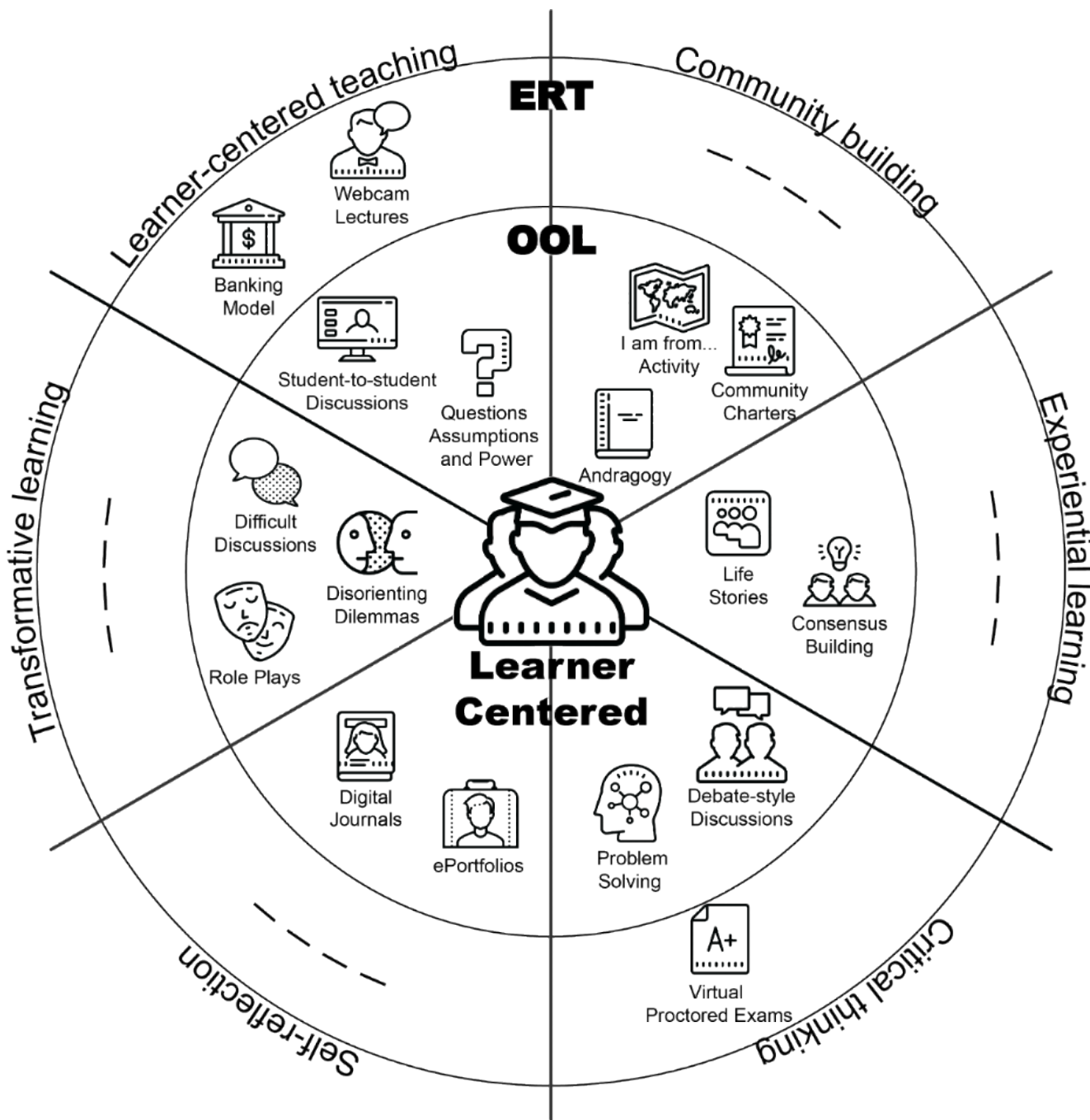# OOL Encapsulates Adult Education Strategies to Deliver Effective Online Learning

Figure 1 Optimal Online Learning Compared to Emergency Remote Teaching Strategies (Note: The Figure 1 shows how OOL encapsulates multiple adult education strategies in online learning environments. On the other hand, ERT lacks a comprehensive approach to support online learners. Designed by Laurie A. Noffs (2020).)

Coming Full Circle

dance round in a ring and suppose,

But the Secret sits in the middle and knows.

ROBERT FROST

The Great Onlining of 2020 has been the disorienting dilemma that has awakened our curiosity and made us question, once again, what it means to interact, teach, and learn in virtual communities. Academia seemed content to exist with boundaries between online learning advocates and skeptics. The urgency and inevitability of online learning as a result of COVID-19 has brought the two sides together, albeit reluctantly. But inevitably, we tend to pick up where we left off with our old assumptions.

As if to accentuate how disorienting this dilemma is, it seems we cannot even agree on the shape of our virtual classrooms. In Schaberg's first opinion piece (2018), before his experience teaching online, he felt that,

> We can't sit in a circle online. I recognize that not everyone configures the classroom in a circle. Some instructors even think that rows are the natural, default shape of education. Anyway, I usually like to have my classes arranged in circles, ovals or weird amoebas so the students can see one another and so that my authority is less automatically pronounced. (p. 1)

Stephen Brookfield (2017) also feels the circle represents a more desirable learning space:

> If it was at all possible I would get to class early to move the chairs out of their arrangement in neat rows and put them into a circle. . . . Why would I spend so much time on pedagogic feng shui? Well to my way of thinking the circle is a physical manifestation of democracy, a group of peers facing each other as respectful equals (pp. 77–78).

To this end, David usually starts his regular weekly web-conference sessions by asking students to "go around the room for a quick check-in" before starting his regular session. We often refer to learner-centered teaching as if that's where learners are supposed to be!

The shape of our virtual classrooms is anything we want it to be. It's an abstract concept that we need to nurture, and the technology will follow. Although learning-management systems provide linear, chronological ways to organize course content and activities, following a modular structure, and videoconferencing podiums or desks to pontificate behind, instructors can cultivate democratic, circular activities in OOL: bouncing ideas back and forth in discussions, looping back with reflection, revisiting critical thinking activities, patterning feedback and revision, and always returning to the learner at the center.

Conclusion

In this chapter we have described the difference between optimal online learning (OOL) and emergency remote teaching (ERT). While we do not criticize the need for ERT during The Great Onlining of 2020 caused by the COVID-19 pandemic, we also do not find the lack of preparedness among academic institutions reassuring. Academic scholars and researchers, including adult educators, epistemologists, learning designers, and pedagogical researchers have long understood and advocated for many of the ideas we have put forth here.

However, adult theorists have often taken the lead in applying many of these key elements to their face-to-face teaching. We believe that these same key elements can also be leveraged for the new reality of immediate and urgent well-designed online learning environments. We described the key elements of OOL as including:

- Learner-centered teaching

- Community building

- Experiential learning opportunities

- Opportunities for critical thinking

- Meaningful self-reflection

- Transformative learning

In addition to summarizing in Table 1 how OOL addresses these key elements and how ERT addresses them unsatisfactorily or often omits them entirely, we described in detail some examples of how specific adult learning theory can be applied to online learning environments.

Throughout our examples, we showed how online learning activities often use technology for specific pedagogical or andragogical purposes. Technology is not used to entertain or merely maintain interest in an online course, but rather to elicit specific behavioral, cognitive, constructivist, or connectivist learning. In some cases, our examples have been used in online environments, and in other cases, as in the "I am from . . ." activity, they are yet to be adapted.

Lastly, in Figure 1, we show the relationship between learner and teacher/facilitator and how OOL encapsulates the key elements we have discussed in the chapter. This leads us to our closing argument that we need to see the traditional confines of classrooms as being liberated by the abstract shapes and relationships that can be found and sometimes forged in the new terrain of OOL.

We hope you will be the first to try it, for optimal online learning has the potential to impact the very learners most in need of engagement, such as first-generation students and students of color. Using OOL strategies may lead to increased persistence and degree completion by inviting personal connections with peers, faculty, and other members of the academic community such as advisors and librarians. Students who are successful in OOL may feel more affinity for their college or university and better advocate for their needs in other courses. For any student asking "Why? Why are we learning this?" "Why are we learning this *now*?" "Why is this structured this way?"—OOL provides the answers.

While not a panacea for the daunting challenges that face online education in current and postpandemic academia, OOL leverages the formidable work of adult educators across generations. At this critical juncture, it is more important than ever to listen to our peers from another place and time who, also daunted by challenges, nevertheless found ways to reach learners made distant through culture, race, or poverty.

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4.

ADVANCING AN APPROACH OF RESILIENT DESIGN FOR LEARNING BY DESIGNING FOR EXTENSIBILITY, FLEXIBILITY, AND REDUNDANCY

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Advancing an Approach of Resilient Design for Learning

The impact of the COVID-19 crisis on educational systems requires actors across those systems to develop adaptive capacity and embed resilient thinking into approaches and frameworks for decision-making and design (DeVaney & Quintana, 2020). Events surrounding the COVID-19 crisis have set off a period of rapid adaptation across the higher-education ecosystem and have necessitated that educators consider new pedagogical approaches and frameworks that are responsive to the changes we are witnessing in our contexts of teaching and learning (Chraa et al., 2020; Donovan, 2020; Moorhouse, 2020; Quintana & Quintana, 2020; Zhu & Liu, 2020).

Instructors at all levels now have a promising opportunity to adopt new learning design approaches that can effectively anticipate and respond to fluctuating conditions and disruptions within instructional environments (Adedoyin & Soykan, 2020; Blankenberger & Wiliams, 2020). At the same time, the current circumstances create opportunities for institutions of higher education and actors to develop adaptive capacity and to embed resilient thinking into decision-making and resource allocation. These efforts can support an enduring transformation and result in both enhanced learning outcomes and risk mitigation across learning environments and academic programs. In this chapter we advance an approach to resilient teaching that focuses on the capacity of instructors to rethink the design of learning experiences based on a nuanced understanding of changing educational contexts. We do so by articulating three guiding principles for resilient design that can be adopted by individual instructors or instructional teams possessing agency. At

the same time, we recognize that the full implications for the widespread adoption of this approach is dependent on other factors, because designing for these contexts is actually a complex systems problem that requires enhancements to the system at the programmatic, institutional, state, national, and global level.

Early in the COVID-19 crisis, educational leaders framed the rapid transition to online instruction as emergency remote teaching (ERT). Hodges et al. (2020) elucidate on this rapid transition:

> ERT is a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances. It involves the use of fully remote teaching solutions for instruction or education that would otherwise be delivered face-to-face or as blended or hybrid courses and that will return to that format once the crisis or emergency has abated. (para. 13)

ERT was initially coined to underscore the temporary and suboptimal conditions instructors and students faced early in the COVID-19 crisis. Yet, even within the early days of the crisis, Moore and Hill (2020) began to outline a possible progression of four phases in higher education's response to the COVID-19 crisis, beginning with ERT, progressing to (re)adding basics into online courses, moving toward an extended period of turmoil, and then finally settling on what these authors characterize as an "emerging new normal."

Coinciding with the articulation of these four potential phases, pedagogues began to advance a new way of framing how instructors could approach pedagogical design in order to withstand the first three phases of the progression outlined by Moore and Hill (2020) and to thrive within the projected "new normal" of teaching and learning in higher-education settings. Now that many instructors have recent practice with ERT and are now operating within the altered teaching landscape, we can draw on their rich experiences to inform and deepen our understanding of resilient teaching approaches. In fact, even if instructors could return to their previous methods and modes of instruction, we posit that lessons learned through the extraordinary period of innovation necessitated by the COVID-19 crisis should ideally be extended to future instructional contexts.

In this chapter, we advance a learning design framework called resilient design for learning (RDL). This framework developed from emerging conversations throughout the higher-education ecosystem, including instructional design circles and academic publications. The ideas presented in this chapter were first developed by the authors of a community-oriented massive open online course (MOOC) that launched on the Coursera platform in June 2020 (Quintana & DeVaney, 2020). The creation of the MOOC was motivated by our perception that although universities mobilized quickly during the emergency remote teaching phase, instructors required approaches that would uphold them beyond the early phases of the crisis brought on by the COVID-19 pandemic. Indeed, at the time of writing this chapter (fall of 2020), it seems that sustainable pedagogical approaches are needed to address challenges faced by instructors throughout the continuing crisis and beyond. At this juncture, we aim to produce a more robust and scholarly account of the approach that we present in the MOOC, drawing from academic literature and disciplinary frameworks. We also highlight responses from learners in the MOOC who reflect on their own experiences and design

intentions within the course's discussion forums, as we believe that their perspectives extend the range of examples we can show to exemplify the framework we present in this chapter.

The RDL framework that we detail in this chapter draws from disciplines that either exemplify resilience themselves (e.g., biology) or utilize ideas related to resilient design (e.g., business management). It is also inspired by ideas about systems thinking (Meadows, 2008) and universal design for learning (UDL; Rose & Meyer, 2002). Systems thinking (Meadows, 2008) helps us consider course design as a set of interconnected elements that are coherently arranged and constructed so as to meet a specified purpose. Furthermore, courses are systems integrated within larger institutional systems, and these systems are interdependent (Bhamra et al., 2011). UDL provides a useful direction for considering learner and environmental variability in designing resilient learning experiences. Thus, RDL synthesizes views of resilience from a range of disciplines, systems thinking, and educational design frameworks in order to articulate three guiding principles: designing for extensibility, designing for flexibility, and designing for redundancy.

While we will expand on these three principles later in the chapter, we provide a high-level overview here. We start with the principle of extensibility, because it allows us to plan for present and future design contexts simultaneously. When designing for extensibility, instructors are able to foresee changes or additions to a course design that may be required or desirable. This design principle is premised on the notion of the "minimum viable product," where an initial version of a course is created with the intention that existing course elements could be extended or added in a systematic and iterative manner. We then move to the principle of flexibility because it encourages instructors to think about how they might practically apply designs for learning, even if the learning environment is different from what was originally expected. When designing for flexibility, instructors are able to anticipate and respond to unfolding changes in a learning environment by attending to variability within the learning environment itself. Here we build on ideas from UDL and posit that this educational framework provides a way of thinking about facilitating interactions in support of learning that are effective and sustainable across multiple environments, even if they must be modified or altered to suit a different context. Finally, we turn to the redundancy principle, which allows instructors to make progress toward longer-term, sustainable goals. When designing for redundancy, instructors first analyze their course design plan to identify components that may be particularly vulnerable and then create components that can perform similar operations and are thus interchangeable. To operationalize the redundancy principle, we return to ideas from UDL and focus on two of its three tenets: multiple means of representation and multiple means of action and expression. Collectively, these three guiding principles represent the ability to reimagine and repurpose complex interactional elements within the design of a course.

Envisioning Resilience in Design

Basic definitions of resilience foreground the capacity of an object or entity to successfully return to its original state in the face of disruption or change. The definition offered by Meadows (2008) encapsulates this idea: Resilience is the "ability to bounce or spring back into shape, position, etc., after being pressed or stretched. Elasticity. The ability to recover strength, spirits, good humor, or any other aspect quickly" (p. 76). This notion of resilience is also exemplified in Aesop's fable of "The Oak and the Reeds," when a storm destroys a mighty rigid oak tree, and the flexible reeds survive because of their ability to accommodate and respond to changing conditions (Aesop, 2018). As we think about expanding capacity for resilience, we should shift from a reactive stance to a more proactive one that anticipates the need to accommodate change. We can perceive times of turbulence and disruption as an opportunity for growth and improvement. We can think of resilience as embodying ideas of flexibility, adaptability, and foresight; for example, Fiksel (2006) defines resilience as "the capacity to survive, adapt, and grow in the face of turbulent change" (p.15).

Within the context of this chapter, we want to emphasize that we are advocating for a definition of resilience that goes beyond attending to the responsiveness of an individual, to cultivating strategies that allow us to design for resilience within systems and institutional contexts. We view adversity as an opportunity for growth and resilience as a characteristic that can be the focus of design efforts. We see connections to Peter Senge's (2006) concept of the learning organization, which he characterized as a place where "people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together" (p. 3). In taking up the ideas of resilient design for learning that we advance in this chapter, we advocate for approaches that move beyond recovery toward a framework that enables more sustainable forms of learning design and teaching, situated within communities of practice (Lave & Wenger, 1991; Quintana & DeVaney, 2020).

Connecting Resilience to Academic Discourses and Disciplines

The notion of resilience has been adopted by a variety of academic discourses and disciplines. Across these domains, systems thinking has emerged as a cross-cutting theme within resilient design. In this section, we will draw on literature from business management, ecology, and biology to showcase how diverse scholars have turned to systems thinking as a foundational principle for resilient design. We will conclude this section by attending to a definition of systems thinking offered in Meadows (2008) and use it as the basis for conceptualizing a basic course system.

Within the field of business management, Fiksel (2015) develops a concept of systems resilience that focuses on the dual characteristics of business connectivity and hierarchy. While business connectivity arises from "strategic partnerships, joint ventures, and extended supply chains," business hierarchy arises from "the structural layers that typify the modern enterprise" such as organizational hierarchies, product hierarchies, and processes hierarchies (p. 39). For Fiksel, systems resilience represents a radical shift in mindset: from business management approaches that tended to focus on discrete things (products, customers, etc.), to the broader systems these things are agents in.

Ecologists have similarly adopted a systems view of resilience. For instance, Walker et al. (2004) define resilience in a social-ecological system as the capacity to "absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks" (p. 2). They further detail four "crucial aspects" of resilience within a social-ecological system: latitude, resistance, precariousness, and panarchy. In this framework of resilience, latitude characterizes the maximum amount a system can change, resistance characterizes the difficulty of changing a system, precariousness characterizes how close a system is to its breaking point, and panarchy characterizes the relationships between systems of different scale (e.g., macro-scale systems such as global climate change and oppressive politics triggering local systems changes in towns, villages, and regional ecosystems).

Systems thinking has also been taken up in biology, notably in the field of systems biology. While definitions of systems biology are diverse, a general definition offered by the Institute for Systems Biology (2019) states that "It is a holistic approach to deciphering the complexity of biological systems that starts from the understanding that the networks that form the whole of living organisms are more than the sum of their parts" (para. 1). This definition is also well aligned with definitions offered by Korth and Katze (2013) and Westerhoff and Alberghina (2005), as they similarly note that systems biology attempts to understand principles of biology by focusing on interactions among biological elements. The Institute for Systems Biology (2019) further notes that the field is largely concerned with predicting systemic change and developing "solutions to the world's most pressing health and environmental issues" (para. 1). The notion that systems biologists would work toward predicting systemic change as a means of developing solutions toward pressing problems neatly aligns with our previous notion of a resilient design, which similarly underscores the need to anticipate changes in dynamic contexts.

For instructors and course designers, the notion of resilient system design advanced by scholars from business management, ecology, and biology highlights the importance of thinking systematically, contextually, and hierarchically within a resilient design for learning. Rather than looking at a learning environment as a collection of discrete objects, these scholars prompt us to think about the ways in which students, instructors, curriculum, assessments, activities, and sociopolitical landscapes necessarily inform each other within complex, hierarchical systems.

To further develop the connection between systems thinking and course design, we can also turn to Meadows (2008), who proposes that systems are "an interconnected set of elements that is coherently organized in a way that achieves something" (p. 12). The three essential elements that comprise systems in Meadows's definition can also be applied to learning environments: purpose, elements, and interconnections. Beginning with purpose (as purpose often defines many of the elements of a course), a course is designed to fulfill stakeholders' goals (institution, students, instructor) and its design is guided by a set of learning goals or intended learning outcomes that are usually articulated by the instructor (Wiggins & McTighe, 2005). To identify course elements, instructors and course designers would likely focus on aspects such as course topics, course readings, lectures, and activities. Finally, the instructor or course designer should consider the interconnections they want to foster that enable the course to function by connecting those different course elements to the purpose of the course. Designing a course then involves simultaneously considering the purpose, elements, and interconnections (interactions) that make up a course.

The Resilient Design for Learning Framework

Having drawn on a diverse selection of disciplines to envision an RDL predicated on systems thinking, we now turn toward articulating and expanding on three guiding principles of RDL. These guiding principles are intended to serve as foundational ideas for instructors and course designers as they seek to design learning experiences that are capable of adapting to fluctuating change.

First Guiding Principle: Designing for Extensibility

The first guiding principle of the RDL framework is extensibility. We draw on ideas from software systems design that define extensibility as "the capability of a software system to enable the implementation of extensions to expand or enhance the system with new capabilities and features with minimal impact to the existing system" (Bode & Riebisch, 2010, p.184). When designing courses with the extensibility principle in mind, instructors and course designers should endeavor to foresee additions or changes to a course design that may be required or desirable. When considering additions or changes that might be *required*, instructors should attend to the situational factors of their course (Fink, 2013) such as number of students, course level (i.e., undergraduate or graduate), length and frequency of class meetings, and mode of instruction (e.g., face-to-face, online, hybrid). Within the context of COVID-19, instructors might especially anticipate shifts in modes of instruction due to the rapid changes in circumstances surrounding the spread of the virus. When considering changes or additions that might be *desirable*, instructors should attend to aspects of their course design that they would ideally like to develop but are not currently able to due to impediments such as time or resource constraints.

In considering what it means to design for extensibility, one helpful construct can be borrowed from the startup world—that of the minimum viable product (MVP; Müller & Thoring, 2012). While some pedagogues might be suspicious of the entrepreneurial undertones of the MVP, the basic concept can be helpful when thinking about course design and development. We can think of the MVP as the most basic version of some product that would minimally fulfill enough of the purpose that it could be released to the public. In the context of course design, the goal of the MVP is to ensure that a well-designed (although perhaps lean) version of a course is offered that will allow students to make progress toward learning goals that the instructor has articulated.

Another helpful framing for extensible design might be to adopt goals associated with designing for meaningful learning experiences (Fink, 2013) and ask, "What is the special pedagogical challenge of the course?" (p. 80). Relatedly, Sobel et al. (2009) recommended that instructors locate the central problem of a course and develop corresponding manageable units of instruction. From there, instructors can consider incorporating elements that enhance the original aspects of the course design.

The MVP also provides instructors with a point of reference for evaluating the first iteration of a course design, which can be used as a foundation for future improvements (Hodges & Fowler, 2020). After a course design is established that includes a set of elements that work together to enable desired interactions that support learning goals across current and future contexts, we can consider two additional facets: (a) increasing the *capacity* of existing elements and/or (b) adding entirely new elements. These "extensions" should be used in support of strengthening existing interactions or creating *new ways* of supporting interactions in support of learning (Cohen et al., 2003). Thus, instructors could systematically grow the MVP version of a course through careful refinement, adding well-conceived, well-constructed, and well-managed elements. These additions can be added, and changes can be made piece by piece, with adjustments only made if new and altered course elements align with established learning goals.

When operationalizing the extensibility principle, it is essential to be able to hold two design contexts in view simultaneously—the present context and an anticipated future context. The idea is to create a course design that will allow and accommodate changes. In other words, extensible courses are the opposite of brittle ones. If courses are designed from the outset with the intent that they are likely to be modified in some way, future alterations should not fundamentally damage the course design. While the first version of a course might be thought of as the MVP, instructors and course designers should simultaneously design the initial version of the course with a future version of the course in mind. It is important that instructors and course designers have both views in mind concurrently in order to create MVPs that are readily extensible, serving as suitable building blocks for future design efforts.

Participants in our Resilient Teaching Through Times of Crisis and Change MOOC articulated how they were using the extensibility principle to think about an MVP version of a course, while simultaneously considering how they might alter and improve their course designs in the future. One participant stated that

their MVP plan was to develop a set of short videos with corresponding multiple-choice quizzes. Their design was extensible because they intended to subsequently develop synchronous activities to complement these resources and assessments. The structure of these activities could be tailored to the learning context, whether the course is held in person or online. Another participant similarly suggested that their plan was to create a set of short videos as their MVP, with the intention of utilizing a video player that allows for annotation and interaction between the instructor and students. The videos could initially stand on their own as media resources; then the instructor could create an activity that asks students to view the videos using a player that allows students to add written reflections at specified moments within the video. Yet another participant articulated that the extensibility principle allows them to make progress toward advancing goals related to inclusivity and diversity by allowing them to offer an initial set of examples that will be expanded to include a wider range of perspectives and ideas. These participants simultaneously considered their current design context and available time and resources to envision how an initial MVP could serve as the foundation for future iterations. These anticipated changes and additions should be easily integrated because the original design was made to accommodate them.

Second Guiding Principle: Guiding for Flexibility

The second guiding principle of the RDL framework is designing for *lexibility*. When designing for flexibility, instructors should cultivate and apply strategies for responding to unfolding changes in a learning environment by attending to variability within the learning environment itself. These changes might be anticipated or unanticipated. Here we build on ideas from universal design for learning (UDL) and suggest that this framework provides a way of thinking about facilitating interactions in support of learning that are effective and sustainable across multiple environments, even if they must be modified or altered to suit a different context.

Developed at the Center for Applied Special Technology by David Rose and colleagues, UDL builds on ideas from universal design and extends them to designs for learning within K–12 contexts (Bowe, 2000; Johnson & Fox, 2003; Orkwis & McLane, 1998). At its most basic level, the UDL framework is organized according to a "why," "what," and "how" structure. The "why" relates to the importance of keeping students engaged to advance their learning, the "what" is through multiple means of representation, and the "how" is through multiple means of expression and action (Center for Applied Special Technology [CAST], 2018). The three main tenets of UDL are multiple means of engagement (related to interactions and motivation), representation (content), and action and expression (assignments and assessments).

UDL posits that designing for learner variability—even before instructors know their students personally—is the most effective way of reducing individual accommodation needs. "UDL is a way of thinking about the interactions that we have with our learners so that they do not have to ask for special treatment, regardless of the types of barriers that they face—time, connectivity, or disability" (Tobin & Behling, 2018, p. 130). The

flexibility principle builds on these ideas and suggests that designing for variability within the learning environment itself is the most effective way of ensuring that course designs can adapt and respond to disruption or changes in learning contexts. As instructors think about their course designs, they might need to consider a range of contexts or circumstances in which they will teach their courses. Then, as they think about the different interactions they want to support, they can think about complementary strategies as alternatives that they can adopt to facilitate desired interactions within a range of circumstances.

The original intent of UDL was to focus on increasing access for all students, including those with disabilities (Hitchcock et al., 2002; King-Sears, 2009). However, the framework gained traction in broader contexts and application areas, including in institutions of higher education where instructors and designers are thinking about students who may be accessing courses with a focus on mobile devices and online settings (Tobin & Behling, 2018). The flexibility principle is most closely related to the first tenet of UDL: multiple means of engagement, which pays particular attention to how students engage with each other, instructional content, and the instructor. Another way of thinking about this idea is by paying attention to how interactions are supported. As instructors think about designing interactions in support of learning, they consider how they will facilitate interactions such as how students will interact with other students; how students will interact with content; and how students and instructors will interact with each other (Cohen et al., 2003; Hart-Davidson, 2020). As instructors and course designers anticipate that learning environments will change (with varying degrees of fluctuation), they must give thought to how they will be able to continue to facilitate desired interactions, even if the means of supporting these interactions must be adjusted. When planning for and enacting the flexibility principle, instructors and course designers will need to keep the unique context of their course in mind, including important situational factors that are related to the teaching and learning situation (Fink, 2013).

Although designing for flexibility might seem like a new requirement necessitated by the COVID-19 crisis, in reality, educators have long dealt with unpredictability with respect to their teaching contexts and have had to adjust accordingly. For example, instructors have commonly coped with some uncertainty around student characteristics and situational factors (e.g., class size, classroom configuration). Before a course begins, instructors likely know very little about the characteristics and needs of their individual students. Thus, instructors have had to design courses based on assumptions about what their students would be like, such as students' motivations for taking the course, their background knowledge and relevant experiences coming into the course, and how they would likely engage with the material. They might base their understanding of what future students would be like on their previous teaching experience, wisdom from the literature, or advice from colleagues. Then, throughout the semester, they could adjust their teaching approaches if student characteristics were different than expected. Similarly, instructors have had to plan their courses based on their current understanding of situational factors (e.g., class size, classroom configurations), with the knowledge that these characteristics could change after a course has started. Now, with the uncertainty surrounding what higher-education learning environments will look like in the future, instructors will need to be even more

intentional about designing with a wide range of contextual factors in mind. They will need to plan for the "unknown" learning environment in addition to the learners they have not yet met. Furthermore, instructors will need to make a plan of action for how they will implement various contingencies that they have identified.

Participants in our Resilient Teaching Through Times of Crisis and Change MOOC discussed how designing for environmental variability could allow them to realize positive learning outcomes and advance learning in the face of normal conditions, minor disruptions, and different types of crises. Participants articulated that implementation of the flexibility principle allowed them to invest a lot of mental effort and time in advance, which they anticipated would allow them to more fluidly apply their plans if minor or major disruptions occur. Additionally, these educators saw benefit in being able to respond to variability in their students' interests and needs, having already created a range of options for implementation. Participants noted that their ability to respond to their students' needs (e.g., broadband capacity) increased when they had already given consideration to the potential for variability within students' remote learning environments and how these differences could influence their students' experience of a course. Thus, by designing for redundancy, participants would be able to anticipate and then enact necessary changes to their course design based on a close reading of the shifting contexts of their instructional environments.

Third Guiding Principle: Designing for Redundancy

The third guiding principle of the RDL framework is designing for *redundancy*. When instructors and course designers design for redundancy, they look for alternative ways of accomplishing a given instructional goal in case any disruption to their instructional environment forces them to remove one or more elements from their course plan. They might first look for areas where course plans might be "brittle" and vulnerable. Another way to think about this is to identify what one could call "single points of failure"—an aspect of a course design on which the success of the course hinges. Once these vulnerabilities have been identified, instructors can develop "backups" or contingencies that will allow the course to recover from the potential failure of one or more course elements or instructional strategies. The idea behind designing for redundancy is that if one or more course elements fail, the interactions that instructors have designed for can still be facilitated, albeit in alternative ways. The redundancy principle is related to the idea of structural resilience. A system of distributed electric generators (e.g., fuel cells) connected to a power grid is more resilient to disruption than a central power station (Fiksel, 2015). Similarly, a system of geographically distributed workers linked by telecommunications technologies could be more impervious to catastrophic events than a group of colocated workers (Fiksel, 2015). By creating redundant course elements (i.e., backups), instructors can ensure that their course system is relatively stable and less likely to fail if disruptions occur.

The redundancy principle can be operationalized by once again attending to ideas from UDL, specifically tenets two and three: multiple means of representation, and multiple means of action and expression. First, as

we examine multiple means of representation, we consider that students differ in the ways they perceive and comprehend information (Rose et al., 2006). The goal here is for instructors to evaluate how information is represented within their course and how presentation of content could be potentially diversified. Providing multiple means of representation is helpful to learners who may prefer one format over another and could potentially ensure that students do not fall behind (i.e., if a given single-stream format is not well-suited to particular students). Second, as instructors and course designers attend to multiple means of action and expression, they acknowledge that besides providing students with various ways of acquiring information and knowledge, it is equally important to offer students alternatives for demonstrating what they have learned. For example, instructors could encourage students to solve problems using a variety of strategies and be flexible in assignment submission formats. The key is not to assess the form of expression, but rather to assess how students are able to demonstrate and apply knowledge, connected to course learning goals.

Thinking about developing alternatives for course elements can be daunting and overwhelming. In response to this reality, Tobin and Behling (2018) advanced a "plus one" approach, in which they advocate that instructors should *incrementally* and *systematically* add content, assignments, and assessments in alternative formats to their repertoire of course resources. "By adopting this plus-one mindset, UDL becomes a process of identifying the areas of greatest need, based on their previous experiences, and addressing those needs in order to keep students motivated, on task, and learning" (Tobin & Behling, 2018, p. 136). As we have already discussed, instructors can begin by examining their course design for areas of vulnerability and focus on materials or approaches that shore up those areas. Specifically, instructors could ask: "What components of the course rely on single-stream materials?" (i.e., materials provided in one format). Instructors could also ask: "What assessment types are implemented using a single format?" (e.g., multiple choice quiz, written reflections). For each area that is identified, instructors can begin to develop one additional means of representation or action and expression. This is the "plus one" approach. The idea is that over time, instructors can gradually build up a set of materials that support multiple means of representation (in presentation of content) and action and expression (through assignments and assessments). Although the premise of UDL is to support a wide variety of learners to the greatest extent possible, we can see that following these guidelines actually allows instructors to design for redundancy. If one of the means of representation or expression fails, then an alternative format that has already been identified or created can be used instead. By minimizing dependence on certain tools or activities, the course will still largely function, even if original course elements fail or are lost due to a disruption.

Participants in our Resilient Teaching Through Times of Crisis and Change MOOC shared insights on how they have operationalized the redundancy principle by first identifying aspects of their course that are the most brittle and then by taking steps to address these vulnerabilities by creating multiple, viable alternatives. Participants identified unstable aspects of their course designs, such as exclusive reliance on synchronous lectures and discussions, as not all students will have access to high-speed internet and a quiet learning environment. To remediate this weakness, instructors planned to prepare lectures in multiple formats (e.g.,

video recordings, written scripts), and create backups of lectures that are delivered synchronously (i.e., file uploads), so that students can access them should their technology fail or if they are absent. Some participants noted that their original course design relied on written tests, but intended to include multiple means of evaluation such as online quizzes, individual and collaborative projects, and oral online examinations.

Conclusion

In this chapter, we have outlined a framework for RDL based on three guiding principles: designing for extensibility, designing for flexibility, and designing for redundancy. We view these three guiding principles as reciprocal, reinforcing, and giving shape to a learning design framework that can be applied and (re)interpreted across learning contexts. The adaptability of these principles stem from a more general course design approach that seeks to understand learning experiences as systems. While systems thinking has been adopted by a diversity of other fields, for educators and course designers, this turn toward systems thinking represents an opportunity to see resilience in teaching and course design.

Born out of the COVID-19 pandemic, the RDL framework charts a vision for resilient teaching beyond our current circumstances. We posit that an aspirational vision for resilient teaching can be summarized as follows:

> Resilient teaching is the ability to facilitate learning experiences that are designed to be adaptable to fluctuating conditions and disruptions. This teaching ability can be seen as an outcome of a design approach that attends to the relationship between learning goals and activities, and the environments they are situated in. Resilient teaching approaches take into account how a dynamic learning context may require new forms of interactions between teachers, students, content, and tools. Additionally, they necessitate the capacity to rethink the design of learning experiences based on a nuanced understanding of context.

Future learning environments in higher education require instructors at all levels to be even more intentional about designing with a wide range of contexts and potential disruptions in mind. As we look ahead and attempt to understand what these future learning environments will look like, we know even our best predictions are plagued with uncertainty. However, this uncertainty for the future only motivates the need to advance a resilient design approach that builds capacity for the unpredictable. It is this uncertainty that asks instructors of all levels to be intentional about designing for change and disruption. And it is this uncertainty that asks the system of higher education to develop adaptive capacity and to embed resilient thinking into decision-making and resource allocation to support an enduring transformation.

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5.

LESSONS FROM ANTICIPATORY INTELLIGENCE: RESILIENT PEDAGOGY IN THE FACE OF FUTURE DISRUPTIONS

Resilient Pedagogy in the Face of Future Disruptions

Briana D. Bowen

The COVID-19 pandemic has disrupted universities across the globe in unprecedented ways, requiring many teaching faculty to reexamine and transform approaches to pedagogy. As higher-education institutions have grappled with various methods of hybrid and remote delivery in an effort to best preserve student instruction through the pandemic, most have fervently looked ahead for a more satisfying "new normal." Yet this moment of unease and transformation is one of critical opportunity for universities and their teaching faculty. Educators are seeing in vivid form how an unexpected "threat"—in this case, a global health challenge—can profoundly disrupt pedagogy, and the immense adaptive innovation necessary to preserve universities' most important functions through a sustained period of difficulty. Equally important are lessons concerning the varying degrees of success experienced between institutions based on different levels of proactive planning and the quality of resilience-building strategies.

The reality is that a pandemic is far from the only major disruptive event that could impact teaching on a localized or global scale. In an increasingly complex and interconnected world facing growing disruptions from climate change and the rapid pace of technological advance, faculty are better served by looking at the COVID-19 pandemic as a template and a testing ground for future disruptions rather than a once-in-a-generation challenge. The diversity of these future disruptions and their impacts on university teaching may range from the short-term, acute, and localized (such as a cyberattack taking down university internet servers for a day) to the long-term, chronic, and large-scale (such as a severe solar weather event that could black-out portions of the US electric grid for weeks or months). There is real value, therefore, in looking ahead to the horizon of possible disruptions to pedagogy and examining how not just administrators but individual teaching faculty can play an active role in building more resilient university communities.

This chapter offers a practical tool kit for faculty to cultivate a mental orientation toward planning, adaption, and innovation in the face of future disruptions to university life. These insights are drawn from the field of anticipatory intelligence, which concentrates on emergent disruptive security challenges and their

implications for human society. An expert grasp on specific potential threats is not required in order to benefit from the thought exercises offered here, nor is it the goal of this chapter for faculty to gain perfect foresight of the next major disruption. Rather, engaging with these tools, including the 4R resilience modeling framework developed by Utah State University's Center for Anticipatory Intelligence (CAI), can offer faculty a foundational primer in anticipatory thinking and proactive planning to better prepare for the continuity of excellent teaching despite a range of challenges in uncertain times to come.

Understanding Anticipatory Intelligence

To equip faculty with a set of practical tools from the anticipatory intelligence domain, this chapter will provide a brief stage-setting primer on the field of anticipatory intelligence, present a simplified framework for assessing categories of potential disruptions to university teaching, and walk through the 4R resilience modeling framework with specific application to pedagogy.

The field of anticipatory intelligence is a developing area of interdisciplinary scholarship whose origins hail from the professional world of national security. The concept of anticipatory intelligence started to gain broad attention in the US intelligence community around the early 2010s as a result of the rising complexity and heterogeneity of challenges facing US national security interests after 9/11 (Kerbel, 2019, para. 2, 6). By the end of the decade, the US National Intelligence Strategy highlighted anticipatory intelligence as one of three key priority areas for US intelligence agencies (Office of the Director of National Intelligence [ODNI], 2019a, p. 7, 9). A cousin concept can also be found in Russian military doctrine—*predvideniye*, or "foresight"—and actually has a longer pedigree of active practice (Bartles, 2016, p. 31). Defined in the US National Intelligence Strategy:

> Anticipatory intelligence involves collecting and analyzing information to identify new, emerging trends, changing conditions, and undervalued developments, which challenge long-standing assumptions and encourage new perspectives, as well as identify new opportunities and warn of threats. . . . Anticipatory intelligence explores the potential for cascading events or activities to reinforce, amplify, or accelerate conflict. . . . [It] assesses risk, intelligence gaps, and uncertainties by evaluating the probability of occurrence and potential effects of a given development on U.S. national security. (ODNI, 2019a, p. 9)

In comparison to traditional strategic intelligence, which tracks data points and developments in known domains of US national security interest (e.g., the size, composition, and dispersion of the Russian nuclear weapons stockpile), anticipatory intelligence is oriented toward on- and over-the-horizon developments whose nature, implications, or intersection with other security challenges is unclear (e.g., could the rapid advance and democratization of gene-editing tools like CRISPR-Cas9 hold national biosecurity implications?).

As the field of anticipatory intelligence has grown in academia, it has been applied to a much broader scope of assessment than just US national security, ranging from global security down to organizational security and even to individual risk and security. In an increasingly complex world, these levels of security are becoming less distinct and discrete, and a rising range of threats hold implications for security on multiple levels simultaneously. For example, hurricanes slamming ashore with more ferocious strength due to longer incubation periods in a warming global climate not only displace communities through a region but can destroy crucial national defense assets (Achenbach et al., 2018). Advances in commercial drone technology have been an asset to photographers, but also to narcotrafficking cartels seeking novel ways to move product across national borders (Fiegel, 2017). Foreign national adversaries to the US government have used cyberattacks and cyberespionage against US private companies and universities to advance geopolitical goals (Brown & Singh, 2018; Asokan, 2020). To the extent that national security issues were once the exclusive jurisdiction of federal government agencies, a rising number are increasingly the concern of other public and private sector entities, including universities.

Utah State University's Center for Anticipatory Intelligence (CAI) has done much of the pioneering work in drawing over the concept of anticipatory intelligence from the national security space into the academic arena. Theoperational frameworks this chapter offers reflect CAI's approach to anticipatory intelligence and draw on the work of students in USU Anticipatory Intelligence academic programs. Because of this, a brief snapshot of CAI's structure and design may be useful to the reader.

NOTES
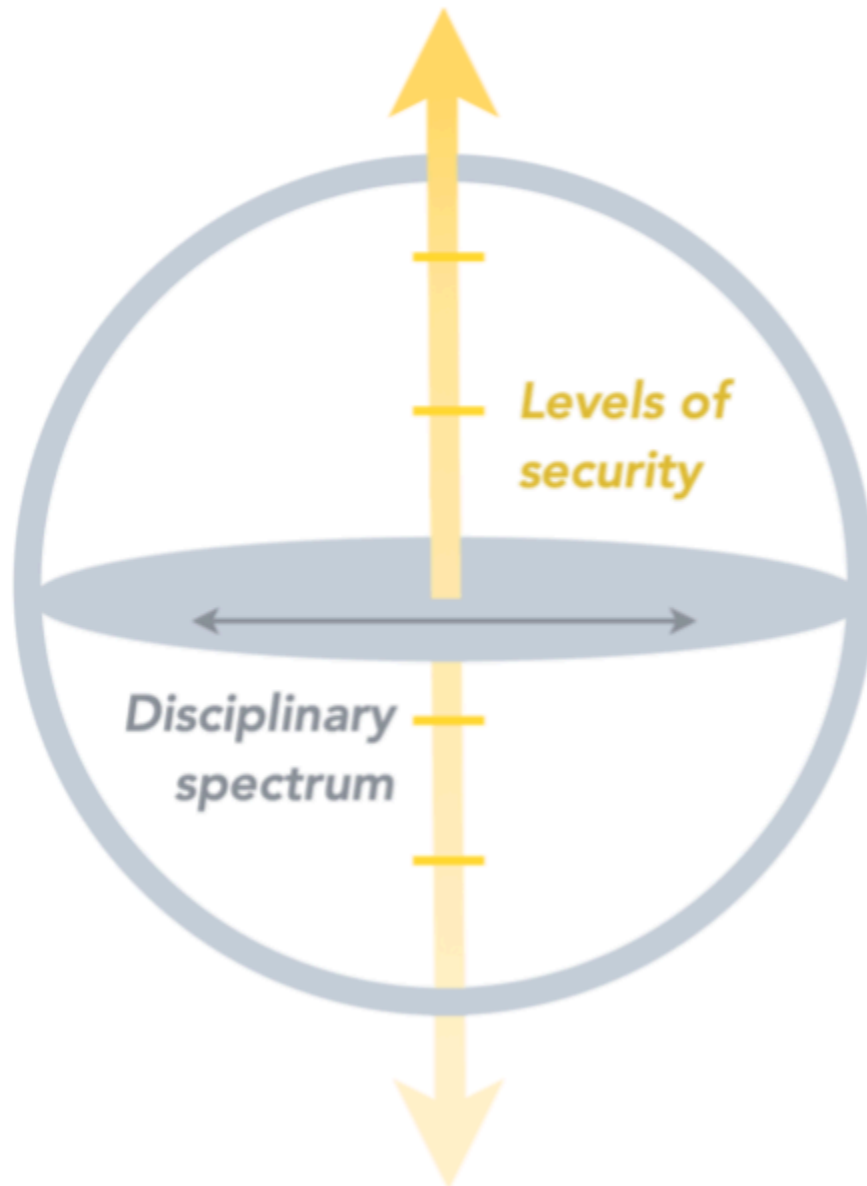
Figure 1 Scope of Focus for USU's Center for Anticipatory Intelligence

Responding to the complex intersectionality of emergent security issues, CAI's scope of focus encompasses levels of security from the international down to the individual domains and examines problem sets originating from or impacting the full disciplinary spectrum, incorporating STEM fields, the social sciences, and the humanities. These security challenges include intentional, malicious, and actor-driven threats; unintended consequences of human action or technology development; or environmental disruptors from anthropogenic or natural origins (CAI, 2020a).

Administratively located within USU's College of Humanities and Social Sciences, CAI is a fully interdisciplinary center with faculty collaborators and students at the undergraduate, master's, and PhD levels

collectively hailing from all eight USU colleges. CAI places a rigorously interdisciplinary orientation to security thinking and resilience design as its most central principle. This approach to anticipatory intelligence is prioritized because the vast majority of problem sets in this field fit under the categorization of "wicked problems"—deeply complex and interconnected issues with myriad stakeholders that are not fully preventable or solvable (Rittel & Webber, 1973)—and require a richly heterogeneous approach to make meaningful advances in threat mitigation and resilience building.

Threat and Resilience Frameworks

A principal goal for practical scholars and practitioners of anticipatory intelligence is to glean proactive insights into challenges that may be on or just over the horizon for an organization or industry—with a better-than-educated-guess sense of the disruptive intersectional dynamics that may come into play—thereby giving more lead time for institutions and individuals to prepare for the challenge and to head it off when possible or better absorb it when not.

Anticipatory intelligence thus has an intrinsic relationship to security thinking, emergency planning, and risk management, or the preparation and processes that go into designing secure systems and safe events. Naturally, these areas are by no means limited to the field of anticipatory intelligence, and most universities and large companies have established offices dedicated to this type of planning and assessment. In many institutions, however, these assessments are limited to specific *events* (e.g., a high-profile visiting speaker) or are focused on protecting against a specific *threat category* (e.g., cybersecurity) rather than surveying the frontier of both known and on-the-horizon challenges that could threaten or disrupt the system.

While a discussion of best practices for risk management and security offices is outside the scope of this chapter, this is a domain in which an anticipatory intelligence mindset could bring value to the proactive planning of universities and other institutions in order to have better informed and more productively imaginative institutional responses teed up for times of crisis. Building on this concept, the following sections offer a simplified tool kit that faculty can work through as a personal mental exercise or a group discussion with colleagues to envision general types of disruption to universities and develop responses for resilient pedagogy through a disruptive event or period. Teaching faculty as well as department heads and graduate program directors may be unaccustomed to viewing this type of assessment and planning as a personal or departmental responsibility, but engaging in these thought exercises can yield significant return on investment for individuals and institutions.

NOTES

Simplified Threat-Assessment Framework

Because this chapter is concerned with a *specific impact* (disruption to pedagogy) to a *defined system* (higher education), isolating categories of disruptive *impacts* to teaching—rather than a comprehensive lineup of all possible sources of disruption—can serve as a suitable foundation for building features of resilience. This is because, first, the same "package" of adverse impacts to university instruction can originate from a wide range of disruptive sources, and second, in happy reverse, it is well established in evidence that a system designed to be robustly resilient against one threat is often significantly more resilient against a host of other threats, whether they are directly or loosely related. Therefore, faculty do not need to utilize a comprehensive threat assessment framework nor become experts in identifying the legion emergent challenges across the "threatscape." Instead, this simplified framework can be used to think through a basic matrix of disruptive impacts affecting university pedagogy:
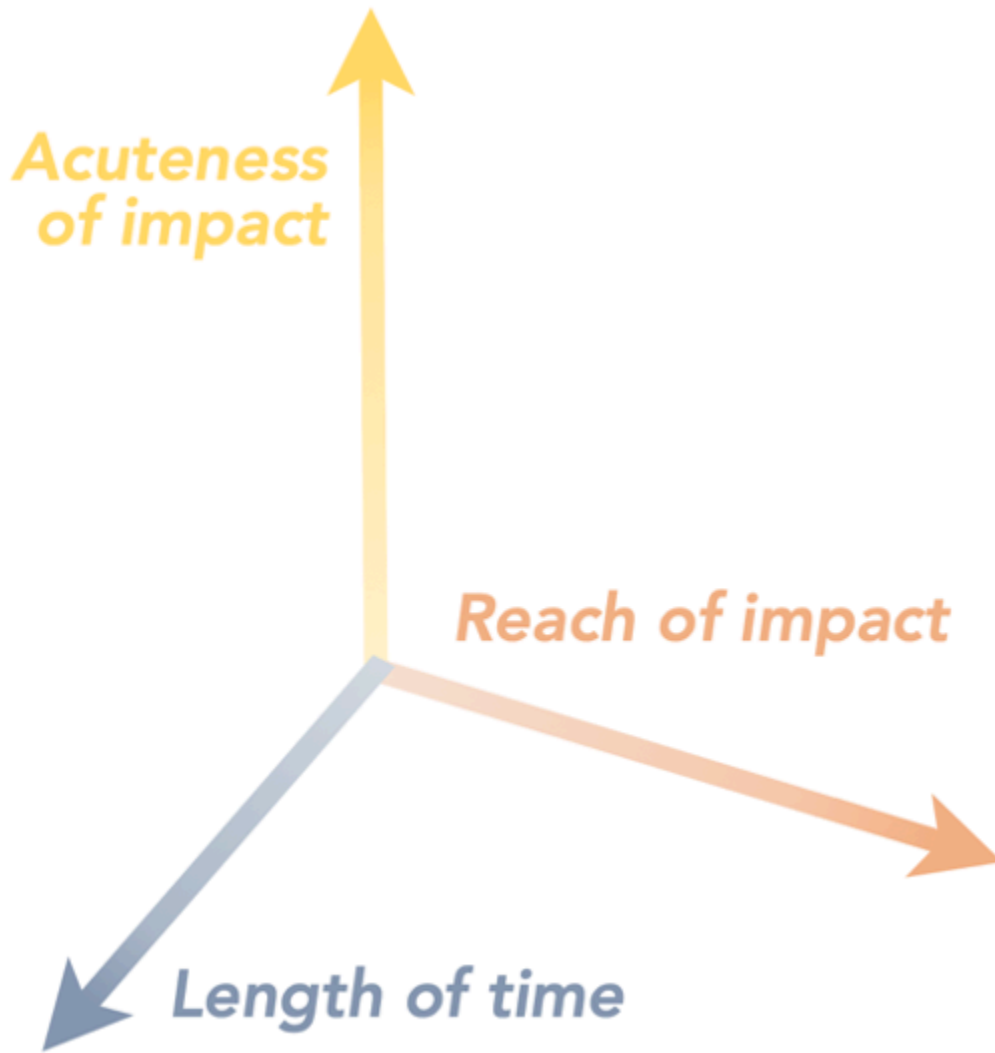
Figure 2 Simplified Threat Model

NOTES

Categories of Disruption to Pedagogy			
Reach of impact	Localized (individual/ department)	Campus-wide	Community-wide or beyond
Acuteness of impact	Inconvenience for teaching	Requires major adaptations in teaching	Makes teaching impossible
Length of time	Day or days	Weeks	Semester or longer

Figure 3 Simplified Threat Matrix

To illustrate a basic sampling of scenarios satisfying combinations of these categories, the following three examples assess how multiple types of threats could land teaching faculty in the same broad circumstances.

Reach of impact	**Acuteness of impact**	**Length of time**
Localized (individual/department)	Inconvenience for teaching	Weeks

Example 1

A disruption creating a *localized*, *weeks-long inconvenience for teaching* could originate from a sophisticated ransomware attack aimed at a university or personal computer on which a faculty member stores local files of lecture notes, past quizzes and exams, and class plans—encrypting all files and risking permanent loss if the demanded sum is untenable to pay or if the files are permanently corrupted even upon payment of the ransom. Likewise, a standard physical security breach could naturally land an individual in the same position through theft, damage, or mechanical failure of a computer whose files are stored locally, or through loss of single-copy printed teaching materials. In conditions like these, faculty are faced with weathering significant (and likely preventable) personal inconvenience as they continue usual instruction.

Reach of impact	Acuteness of impact	Length of time
Campus-wide	Makes teaching impossible	Day

Example 2

A disruption creating a *campus-wide, day(s)-long interruption to teaching* could originate from a severe cyberattack aimed at university servers that cuts off internet or user access to key online teaching platforms, making most instruction (especially in the remote teaching era) impossible for a day or several days while IT personnel work to restore internet access. Other campus-wide emergencies like region-specific extreme weather events (e.g., blizzard, tornado, hurricane) could have a similar impact. In cases such as these, teaching is simply made impossible for a short period and faculty are limited to cancelling classes and deciding how to best reschedule or revise coursework around the disruption.

Reach of impact	Acuteness of impact	Length of time
Community-wide or beyond	Major adaptations in teaching	Semester or beyond

Example 3

A disruption creating *community-wide, long-lasting effects requiring major adaptions* in teaching includes, of course, the situation that most universities around the world faced in 2020 due to the COVID-19 pandemic. But a severe solar weather event that unleashes large-scale disturbances on the ground-based electric grids and space-based assets that underpin much of modern life (including power, internet, GPS, and more) could also land universities in the same type of long-term, major-adaptation response zone—as could a sizeable earthquake that compromises physical infrastructure, food and water supply, and basic services for the broader community or region. In cases like these, faculty must negotiate two phases: the "moment of impact" disruption that may interrupt teaching for a period while the university or broader community recuperates to a new functional baseline, and the sustained disruption period, during which an adapted "new normal" is implemented for university instruction.

Visualizing Personalized Scenarios

Using these brief snapshots as a kickstart, faculty can gain the most value by employing the simplified threat assessment framework to think through permutations of the matrix above and visualize a range of plausible scenarios that could yield such impacts for their own institutions. Assembling this personalized list of scenarios best prepares faculty to directly and productively apply the 4R resilience modeling framework below. The thought exercise of compiling this list can be conducted individually in a quiet brainstorming

session, a collaborative tabletop exercise in department or college meetings, an interdisciplinary workshop with campus colleagues, or a class exercise with students interested in the concept of resilience. Department heads, graduate program directors, and other faculty with administrative responsibilities related to teaching may find particular benefit in doing this exercise with key stakeholders. As noted above, the intent of this simplified framework is not to perfectly predict or foresee specific events, but rather to usefully draw on productive imagination to glean more sophisticated insights into the intersecting challenges, complicating variables, and human dynamics that could significantly shape a disruption down the road. Conducting thoughtful "mental imaging" of a diverse array of scenarios cultivates a mental orientation toward planning, adaption, and innovation and equips faculty to design resilience plans for pedagogy that are tailored to their individual circumstances. Mental imaging also offers an opportunity to bolster personal resilience—conceptually "practicing" a variety of disruption scenarios actively lessens shock and stress when a disaster does strike, and it heightens nimbleness and confidence in prepared reactions and adaptions.

For those interested in seeking a better sense of potential disruption sources, a robust stockpile can be found in the annual *Worldwide Threat Assessment* produced by the Office of the Director of National Intelligence (2019b) and the *Homeland Threat Assessment* generated by the US Department of Homeland Security (2020). In addition, USU's Center for Anticipatory Intelligence produces the *CAI Student Research Reports* (2020b) white paper series, offering an open-source reservoir of research specifically oriented toward tracking the spectrum of emergent security challenges.

4R Resilience Modeling Framework

Armed with a sense of the possible categories of disruption to university teaching, faculty are equipped to engage next with the 4R *resilience* modeling framework. Within the field of anticipatory intelligence, the term resilience is conceptualized as the ability of a system to rebound quickly from disruption and maintain its most essential integrity and functions through periods of friction or stress. Drawing on a wide interdisciplinary survey of literature, including work spearheaded by USU Anticipatory Intelligence students (Johnson, et al., 2019), CAI's 4R resilience modeling framework captures a range of best practices for building systemic resilience around four elements: *resistance*, *recovery*, *retention*, and *resurgence*. These components are not intended to be necessarily linear or chronological and sometimes naturally overlap in areas.

The 4R framework offered below has been adapted to specifically assess how university faculty members might build resilience into their own practice of pedagogy through a range of disruptive events. This framework is designed to "click in" to the simplified threat assessment and personalized scenarios developed above and can be mentally worked through in the same types of individual or collective settings previously suggested.

Resistance

> What can be done to mitigate or prevent the disruption from happening?

The Concept

Resistance planning centers around measures that can be taken to interdict a threat before it hits the system. In any setting, decisions made by stakeholders to achieve positive resistance are rife with one of the fundamental premises of security thinking: security is always a question of *trade-offs* with other values or goods—convenience, personal freedom, accessibility, and so forth (Schneier, 2003). For the challenges across the threatscape that are possible to proactively mitigate or prevent at a reasonable trade-off level, planning and investing in resistance measures is often the sensible move from a rational economic lens: An ounce of prevention does, in fact, shake out to about a pound of cure. Furthermore, in an increasingly complex and hyper-connected world, resistance measures that are taken—or fail to be taken—by an individual against a specific threat can ramify throughout the security and resilience of an entire system.

Resistance in Action

In a university setting, some resistance-building decisions simply fall outside the jurisdiction of typical faculty members, residing primarily with administrators and facilities personnel. But as discussed below, these resistance measures have important effects on individual faculty, and sometimes the line of shared responsibility for shoring up resistance lies closer to faculty than expected. A useful illustration of resistance measures in action is the physical security of university facilities. For university buildings with sensitive contents or operations, emphasis on conscious facility design and location, deterrents like perimeter or building surveillance, and multiple-redundancy access requirements (e.g., passcode, dual authentication, and biometric scan) can significantly enhance security. Yet from the era of medieval fortresses down to modern secure research or teaching laboratories, total impregnability is a fantasy—any system ultimately has weaknesses if the scale or willful determination of the threat is significant enough or even if human error has one of its more spectacular days. The goal of resistance instead becomes using finite resources to make a security breach simply *hard enough* that most willful actors or natural disasters will have little meaningful effect in disrupting the core functions of the system.

With each layer of resistance measures installed, however, trade-offs in the form of accessibility accumulate. Some years ago, the author participated in organizing a conference of academics and policy experts collaborating on a federally funded grant project. Even though the conference and project were to be fully conducted at the unclassified level, the conference was held at a secure facility affiliated with one of the

project's principal investigators. In order to enter the building, attendees had to relinquish phones, laptops, thumb drives, and other electronic devices for the day's full eight-hour session—an oddity, mildly put, in the modern world. While the enhanced physical security of the space guaranteed the uninterrupted privacy and focus of the proceedings, the convenience tax on attendees was steep. When considering the potential threats or disruptions averted by physical resistance measures in a university setting (intellectual property theft; vandalism; manipulation of records; physical harm to faculty, staff, or students), there is little question of the value at stake, but the security trade-off threshold that administrators and faculty agree on will be calibrated differently between a standard office suite and an advanced virology lab.

Application to Pedagogy

In some domains, faculty may have significant capacity to personally implement meaningful resistance measures against possible disruptions to pedagogy. One area where individual resistance can combat a pervasive threat is faculty cyber hygiene. While some progress has been made in recent years by institution-wide mandates to implement dual authentication and require regular password changes, personal cyber hygiene among many faculty remains less than auspicious. Careless habits like using an institutional single-sign-on (SSO) password for other accounts, failing to use a virtual private network (VPN), letting vigilance against spear phishing slide, or neglecting home router and smart device cybersecurity can allow malicious actors to seize university credentials and penetrate systems to do mischief that may have far-reaching impacts. The disruptions to pedagogy that can derive from the universe of cyberattacks are myriad—from the individual inconvenience of the ransomware scenario described above to a more serious and damaging attack on university-wide services or infrastructure. The additional rising risk of intellectual property cybertheft should drive home to faculty members both the personal and institutional importance of wearing the digital facemask of good cyber hygiene. Though not a hermetic seal between the individual and the dangerous elements of the cyber environment, a serious and committed regime of personal resistance measures in cybersecurity is a sensible trade-off in helping to contain the spread of harmful elements that could have much wider negative systemic impacts if unchecked.

Self-Assessment Questions

With a personalized list of possible disruption scenarios in hand, faculty can engage in resistance planning by conducting a mental "mapping" exercise with these questions:

- For threats or disruptive challenges that could directly impact me or my department, what measures are within my power to actively decrease or prevent the likelihood of a disruption to my teaching? How can I sustainably implement these measures?

- Are there any specific security issues that could originate in or penetrate through my department and impact teaching in the wider university community? Have I put appropriate measures in place to

mitigate or prevent these?

- What are the right balances for me or my department in elevating resistance against certain types of threats or challenges given the actual cost and opportunity cost of the associated trade-offs?

Recovery

What can be done to rebound from disruption to a minimum functioning threshold?

The Concept

Recovery shifts gears to assess the best responses once a disruption to a system has taken place, perhaps despite best efforts to prevent it. In general terms, the goal of the recovery phase is to move a system out of a state of acute disruption, in which the system's core functions have been halted, to one of at least baseline operations. The nature and length of recovery hangs on the scope and severity of the disruption itself: The recovery phase may be limited to reaching the minimum functioning threshold for the system and learning to make do with a "new normal" (this leads into *retention*, below), or it may offer a path all the way to a complete rebound from disruption. In either case, recovery measures are about the crucial zero-to-sixty acceleration to most efficiently get key system elements back up and running after a disruption.

Recovery in Action

A perennial worry among threatscape watchers is the unlikely but grim possibility of a significant solar weather event resulting from a coronal mass ejection (CME) or a solar flare hitting the Earth, impacting both critical ground- and space-based assets with electromagnetic radiation, magnetic field-embedded plasma, and energetic charged particles. Depending on the strength of the solar weather event, radiation and energetic particles could short out in-orbit satellite constellations and magnetic field-embedded plasma could induce currents that surge through electric grids, blowing difficult-to-replace transformers and blacking out portions of the globe unlucky enough to take the direct brunt of the radioactive debris (Fraley, 2020, pp. 4–7). In both the mild (days to weeks of recovery) and apocalyptic versions (18+ months of recovery) of this scenario, one central point is vividly captured: electricity and the internet are the two "single points of failure" in modern life, upon which nearly all other systems of contemporary human society rely. Blackouts can originate, of course, from a wide range of natural or willful sources—similar impacts for more limited geographic areas could derive from malicious actors carrying out a physical attack or cyberattack on critical infrastructure like transformers or internet exchange points, or simply from a major storm that takes down a significant number of power transmission lines in a region.

We do not have a version of modern university life that operates without electricity and internet, meaning that resilience in this genre of disruption centers around recovering to basic operational levels of power and internet connectivity. As with most wide-scale challenges, external entities would play a crucial role in the mechanics of recovery from any blackout, tending to damaged portions of the electric grid and restoring service in stages to communities. The more severe a disruption of any kind, the greater the number of recovery elements that must be handled primarily at government or university leadership levels—and, obviously, there are some catastrophic challenges during which regular university functions simply would not be the priority for a stretch. But even in these rarer cases, as well as more modest and probable disruptions, individual faculty would still be responsible for a host of important recovery measures, beginning with emergency communications to and from students, modifying classes and coursework around the blackout period (literal or metaphorical), and figuring out how to rebound to a new minimum functioning threshold within their own pedagogy as soon as university conditions allow teaching to resume. As the COVID-19 world shifts ever more rapidly into the virtual universe, no institution should fail to have a weather eye on these two single points of failure and be actively considering the zero-to-sixty recovery plans within the institution's power to rebound to a baseline level of core functions—even if an acceleration to previous freeway cruising speeds is not possible for some time.

Application to Pedagogy

When the COVID-19 pandemic hit critical scale in March 2020, most university faculty across the United States experienced some version of the transition that Utah State University implemented in shifting all Spring 2020 classes to fully remote instruction. Over the course of four days, faculty needed to quickly assess how to reconstruct courses in order to go from a state of totally suspended instruction to a new minimum functioning threshold in order to finish out the semester. Despite the steep and turbulent learning curve this placed on faculty, the COVID-19 transition at USU and many other universities is a prime example of quick recovery to a new operational normal that allowed instruction to then continue through a period of heavy societal disruption. While federal, state, local, and university leadership each had crucial decision-making roles in the policy responses to the pandemic in that interval, very few faculty members escaped the rigorous task of designing their own recovery plans essentially overnight. Assessing individual-level recovery strategies for rebounding pedagogy from *full-stop* to *basically workable* across a range of disruptions from the simplified threat framework can help orient faculty to the best practices necessary to more capably weather future recovery periods—small or great.

Self-Assessment Questions

Drawing on personalized scenarios for their own setting and institution, faculty can engage in proactive recovery planning by considering these questions:

- What are the key ingredients I need in order to hit baseline functionality in my teaching? How could I develop a pedagogical "72-hour kit" of sorts that could prepare me to quickly go from "zero to sixty" in a recovery scenario?

- What are localized "single points of failure" in my teaching—what disruptions would make it very difficult or impossible for me to continue to teach? Are there ways I could build backup or alternative mechanisms into these areas?

- Do I understand and have good communications with the stakeholders across my university who will be involved in recovery processes from stress or friction events? Have I considered backup communication methods with my students?

Retention

> What can be done in the midst of friction/stress to maintain core critical functions?

The Concept

Retention concentrates on retaining the most valued and important features and functions of a system through the duration of exposure to stress, friction, or disruption. Entering the retention phase implies that the system has reached at least a baseline level of functioning (recovery) if it has encountered a sharp disruption, but the system is compromised in its ability to operate at normal levels. Central to the planning and successful implementation of the retention phase is a deliberate assessment of what those most vital identities and operations of a system are, both tangible and intangible. This assessment is most useful when it includes not only the formal functions of a system (e.g., company sales, university instruction) but the value-based priorities and stylistic preferences that ideally define the system (e.g., company culture, certain classroom dynamics). Retention of these *core critical functions* through disruption or stress is dependent on the resilience of both the people and the material systems involved in sustaining these elements.

Retention in Action

Some years ago, the author attended a military training exercise in which service members were simulating a deployment to a foreign area of operations. The multiple-day exercise in full gear took place in a setting that approximated the basic conditions and tasks service members would be likely to encounter in a real deployment. Halfway through the exercise, however, a brilliant twist in the simulation was imposed: as a result of an imagined electronic warfare (EW) attack, service members "lost" the ability to use most electronic

devices and services, including standard communications and myriad systems that underpin military situational awareness and physical security. This development plunged service members into a brief *recovery* moment, figuring out how to scramble back to a minimum operating threshold, followed by a prolonged *retention* phase. With no option to simply stop or call it a day, service members had to determine how to sustain their primary mission—their core critical function as a military force—under significantly disadvantaged conditions. Participants moved quickly to develop new sustainable communication methods, implement amended logistics protocols, and make the best of low-tech physical security measures as the simulation stretched into subsequent days.

When facing challenges that fall in the middle-term to long-term categories of the simplified threat matrix, university faculty can expect a significant effort toward a retention mindset: assessing how to preserve one of their core critical functions—offering the highest realistic standard of excellence in teaching—through long-haul disruptions to university life. In a scenario of sustained local or national civil unrest that impacts university campuses, a faculty member's well-considered plan for sustainably retaining the most important substantive and stylistic elements of their teaching through the period of disruption would be a significant asset. When facing more localized disruptions, recovery and retention mindsets may sometimes naturally link together. For example, despite commitment to good cyber hygiene, a sufficiently sophisticated ransomware attack may still penetrate through an unfortunate faculty member's defenses, encrypting all local files and positioning the attacker to demand a hefty sum for their return or threaten their permanent loss. In this circumstance, the key to both recovery and retention lies with the proactive measures that have been put in place to ensure that such an attack will not cripple a faculty member's basic ability to continue duties including teaching, research, mentorship, thesis or dissertation supervision, tenure processes, grant management, and so forth. These measures often fall into the domain of *positive redundancy*, or alternate methods of guaranteeing a specific capability. For example, primarily storing files in a cloud server (especially a university-authorized one) and keeping a regularly updated offline encrypted external hard drive in a secure location both offer relatively low-cost ways for faculty to be able to circumvent the disruption of a ransomware attack and regain access to important or irreplaceable materials.

Application to Pedagogy

For threats that may impose lasting stress and disruption on university teaching, implementing a retention focus means identifying not only how to safeguard the basic mechanics of instruction but the value-based or stylistic features of teaching that are most important to a faculty member, program, or department. An illustration from my own experience was the task of determining how to preserve the most valued stylistic features of the USU Anticipatory Intelligence program through the disruptions imposed by the COVID-19 pandemic during 2020. The central organizing principle of the USU Anticipatory Intelligence curriculum is the concept of a richly interdisciplinary cohort of students that learns to function together as an analytic team, actively valuing the personal and disciplinary diversity that each cohort member brings—and the blind

spots they flag—for their fellow students as they collectively tackle "wicked problems." In a typical year, cultivating this culture involves dedicating a significant portion of class time in foundational courses to in-person exercises, intensive role-playing simulations, and in-state and out-of-state field trips that cumulatively develop a sense of problem-solving cohesion and interdependence between students that range from undergraduates in anthropology to master's students in data analytics and doctoral students in aerospace engineering.

In order to safeguard retention of this valued dynamic in the incoming 2020/21 cohort, the USU Anticipatory Intelligence program implemented innovations to accomplish these key "intangible" goals. Over the summer of 2020, several CAI faculty members and nearly a dozen CAI alumni from previous cohorts facilitated a virtual "boot camp" series for students in the incoming cohort, combining brief introductory lectures on curriculum concepts with breakout exercises that paired three or four incoming students with a CAI alum to work through a problem set and to be introduced to the principle of drawing on other students' divergent expertise and perspectives in problem solving. By participating in five virtual "boot camp" sessions over the summer, the 2020/21 cohort entered classes in fall 2020 already equipped with the central orientation of the program, which significantly enhanced interconnectedness and cohort cohesion despite the physical separation between in-person and remote students and the restrictions of social distancing. Through the fall 2020 semester, additional efforts to retain the program's organizing principles were built into hybrid class discussions, simulation exercises designed to accommodate both in-person and remote students, and a virtual adaptation of the annual CAI Speaker Series. Even in semesters with unfavorable teaching circumstances, consciously assessing and identifying the substantive and stylistic priorities of a course, department, or program can help inspire adaptations to better preserve the most valued core features during periods of chronic stress to a university system.

Self-Assessment Questions

As faculty consider the retention-planning questions below, another tool that may be useful to integrate is proactively simulating a friction or stress event in a tabletop exercise. Similar to the military training exercise described above, tabletop exercises allow a group of colleagues to envision and informally act out a specific disruptive scenario and can offer university faculty and administrators valuable insights into otherwise unforeseen stress areas, colliding challenges, and gaps in response plans. There is a robust body of resources from the government and policy realms on designing and running tabletop exercises to be both realistic and "intellectually liberating" (Ready.gov, 2020; UK Ministry of Defence [MOD], 2017; RAND Corporation, 2020).

- What are the most important substantive and stylistic elements of my teaching or programs I administer that I want to find a way to preserve even when experiencing disruption?

- What proactive measures could I begin trialing or instituting now that would better equip me to preserve these elements when facing localized or widespread disruption to normal teaching?

- What material systems do I rely on in my teaching? How could I proactively prepare to preserve my substantive and stylistic priorities during a period when these material systems are compromised or fail to function for a stretch?

Resurgence

> What can be done to leverage the opportunity of disruption to build a stronger system?

The Concept

Resurgence seeks to identify the windows of opportunity created when disruption impacts a system, forcing a reevaluation of system features that deserve to be recovered and retained—and those that perhaps should be jettisoned and replaced (Taleb, 2016). The resurgence orientation recognizes that both positive and negative elements of a system can be doggedly enduring, and sometimes moments of disruption or even crisis are a valuable catalyst to break down counterproductive features. A resurgence mindset views the overarching concept of resilience not as a mandate to preserve the system status quo in its entirety, but––drawing on the concept of retention above—as an opportunity to refine and actively expand the most positive features of a system in the wake of disruption.

Resurgence in Action

One of the most vivid recent examples of resurgence in the international security domain originates from the small Baltic country of Estonia, a former Soviet state bordering Russia. In 2007, Estonia was the target of a massive, multifaceted cyberattack campaign from Russia—one of the earliest such cyberattacks on record. The slew of digital assaults from various Russian actors on Estonian financial institutions, government services, and communications created mass confusion and disruption of some essential services while the Estonian government and private industries worked to sort out what was happening and restore services (Davis, 2007). This event left a searing impression in the Estonian national psyche, compounding existing anxieties about the potential threat Russia poses to Estonia's internal security and even its modern existence as an independent nation. In the wake of the 2007 cyberattacks, the Estonian public and private sectors united to implement a significant overhaul of its national approach to cybersecurity intended to make a repeat of the attacks impossible, bolstering Estonia's secure electronic identity system for citizens and creating the world's first "data embassies" in other nations that serve as offsite cloud backups for government data and

critical services (Ross, 2020; Organisation for Economic Co-operation and Development [OECD], 2018). Major efforts were also invested in training the Estonian population on individual responsibilities in cybersecurity as a matter of both personal resilience and national security (Ruiz, 2020, para. 4–6). When confronted with later cyber challenges—the WannaCry ransomware attacks, NotPetya malware attacks, and myriad issues presented by the COVID-19 pandemic—Estonia's resurgent cyber infrastructure allowed the country to weather the disruptions far better than many other nations (McLaughlin, 2019; "Covid-19 Strengthens," 2020, para. 3, 6). Estonia's experience underscores the broadly transferrable principle that building a system to be resilient against one category of threats significantly strengthens its ability to successfully weather a host of other challenges.

Application to Pedagogy

A range of resurgent transformations to academia can be envisioned on the other side of the COVID-19 pandemic, which has challenged many basic assumptions about the character of university pedagogy. Naturally, not every challenged assumption should result in a policy change, but the pandemic does provide an opportunity for a remarkably global conversation about a renewed and improved generation of best practices going forward. One concept that seems to hold significant promise as a resurgent innovation in academia is the integration of an online/remote participation option for public events like featured guest speakers, panel discussions, and student forums. Integrating a hybrid (virtual) participation option for events that are held primarily in-person creates a more open and inclusive global learning and information-sharing environment. Students and scholars across higher-education institutions have more rich opportunities to cross-pollinate research and findings, especially from universities that have specialized centers uncommon across most institutions (the University of Oxford's Future of Humanity Institute is a prime example). Students with disabilities or chronic health issues have better routes to more fully participate in university programs from afar when hybrid participation options are facilitated. Last, but not least, growing hybrid coverage of university talks and events gives evidence-based expert opinion a more frequent and public platform to be heard and shared in an era when disinformation prevails on the internet and facticity is undervalued. While I believe that the in-person elements of higher education are being shown to be more important than ever in the era of COVID-19, there is ample room to integrate a wave of high-value resurgent innovations deriving from the pandemic into university norms going forward.

Self-Assessment Questions

In creating space for resurgent adaptations in individual teaching portfolios, faculty may benefit from considering the following questions:

- In looking at disruption as an opportunity for resurgence, what elements of my teaching could merit reevaluation and restructuring during current or future disruptions I experience?

- As I adapt to disrupted teaching environments, what previously untouched skill sets, approaches, or platforms could I consider integrating into my pedagogy?

- Are there bureaucratic or cultural ruts associated with pedagogy that I, my department, or my university could positively interrupt as a result of stress or friction our system experiences?

Conclusion

A strikingly consistent lesson of history is that humans struggle to take seriously threats or challenges that they have not personally experienced. The opportunities for proactive resilience and innovation lost because of this are myriad—and unnecessary. By mentally engaging with a range of productively imaginative disruption scenarios and considering individually tailored resilience strategies to address them, university faculty can equip themselves with greater personal confidence in their own ability to weather future disruptions. Furthermore, faculty can develop enthusiasm for renewed and improved adaptions in teaching that are inspired by active resilience building. Full university communities—faculty, administrators, staff, and students—benefit when anticipatory thinking is applied to cultivate a rich communal and collaborative orientation toward resilience through planning, adaption, and innovation.

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6.

RESILIENT AND FLEXIBLE TEACHING (RAFT): INTEGRATING A WHOLE-PERSON EXPERIENCE INTO ONLINE TEACHING

Christina Fabrey and Heather Keith

When venturing into wild or unknown territory such as a swiftly moving and ever-changing mountain river, a raft may be a necessary tool for basic survival. But what if during the careful navigation of rapid currents around rocks and other obstacles, you discover that your buoyant and flexible tool helps you to float through the fast and turbulent waters in a way that is meaningful, awe-inspiring, and exciting? As COVID-19 first hit our campuses, many of us switched to emergency remote education as a survival raft, just trying to stay afloat long enough to get to the other side of the semester without drowning. We quickly abandoned in-person teaching and jumped aboard online platforms, scrambling to provide continuity in learning and curriculum for our students. But as we begin to further explore these new waters, perhaps we will see our pandemic year as a catalyst for building a better equipped, sturdier, and more graceful model of resilient and flexible teaching (RAFT).

RAFT, a holistic, student-centered pedagogy, engages our learners in the best practices of our brick-and-mortar environments but within a flexible setting that allows them to navigate turbulent waters. RAFT not only provides for a flexible and resilient format but also engages students in a way that they become more resilient themselves. With rates of depression and anxiety increasing in young people (Chirikov et al., 2020) coupled with our national unrest and increasing global crises such as the pandemic and the effects of climate change, education needs to be flexible while also providing students with the tools necessary to navigate chaos. Instruction and services need to be offered to students in a way that they can easily access and integrate resources into their complicated lives. Resilient and flexible teaching integrates student support into the content and delivery of courses, and emphasizes both academics and well-being, helping students become better able to withstand disturbances.

By incorporating simple and holistic support strategies into the classroom, institutions have the capacity to shift from a pre-COVID, siloed campus environment to a post-COVID community in which integrated campus partners are empowered to build a more resilient teaching experience that prepares students to negotiate uncertain futures. The added benefit of the RAFT approach is that the holistic student experience creates opportunities for more equitable access to learning. In this chapter, we will discuss the RAFT model

and offer examples of how to weave high-impact pedagogical strategies and essential student support services into excellent teaching, regardless of the format or location.

Paddling Quickly: What is Flexible Teaching?

With the onset of COVID-19, faculty and students were thrown into turbulent water and forced to paddle quickly in survival mode. Boulders and snags popped up as we moved students online with little support in the middle of the Spring semester. In addition to health concerns about the virus, students experienced unemployment, food and housing insecurity, and increased rates of depression and anxiety. These issues were especially problematic for students in historically disadvantaged groups (Anderson, 2020). Many institutions were loosely aware of these issues and tried to accommodate students in our emergency remote spring and summer. By the Fall 2020 term, however, most higher-education professionals became familiar with any number of better organized online and hybrid design models in teaching, from asynchronous to synchronous, blended to mostly in-person (Maloney & Kim, 2020). "Hyflex" teaching, for example, rose to prominence for many campuses with students split between face-to-face and remote environments. It is defined as using hybrid teaching (blending both classroom and online learning) to create flexible paths for students, such as offering student choice in the mode by which they complete the course (Beatty, 2019). Hyflex and other hybrid approaches work during times of disruption because they allow students to learn in an evolving context that includes the desire for face-to-face interaction as well as the need for quarantine and isolation. Whether students are ill, in quarantine, or sometimes simply choosing to learn from the safety of their homes, the greater flexibility of many of our current education models benefits learners and should be maintained whether in the rough water of a crisis or the still(er) water of the new normal. We note that this flexibility does not absolutely necessitate synchronous online class time for students at home (which can sometimes be impossible for faculty as well as students); there are many other ways faculty can offer flexibility to the class experience by offering multiple opportunities and venues for success.

In addition, flexible education goes beyond format. Faculty can mitigate student barriers, especially those presented during COVID, by utilizing best practices in online education. Universal design for instruction (UDI), or the "proactive design and use of inclusive instructional strategies that benefit a broad range of learners including students with disabilities," is based on principles that enable instructors to design and deliver their courses in ways that consider diverse learners and make learning accessible to a wide variety of students (Scott et al., 2002). Crises can impact in-person learning experiences, so courses that are inclusive and accessible are more important now than ever before. By incorporating strategies aimed at flexibility, UDI allows all students to continue to learn in a high-quality instructional environment despite obstacles. The UDI framework provides a starting place for flexible teaching and learning aimed at the resilience and persistence of all students.

During the pandemic, we also found that faculty could offer greater flexibility, whether hybrid or online, by making course materials easily accessible electronically. Having a robust online presence, even in largely face-to-face courses, allows students to make health-conscious decisions about quarantine or other obstacles to interacting in person. This could be as simple as offering alternative assignments on the learning-management system (LMS) for students missing class meetings to a fully flipped class in which all materials and assessments are available to students outside of class time.

With as many as 6% of students on college campuses testing positive for COVID-19 in fall 2020 (Lederman, 2020), allowing an immediate opportunity for students to continue class while in quarantine is particularly useful during a pandemic, or even during university closures due to inclement weather or other emergencies. Zoom and other video conferencing tools allow teaching and learning to continue in real time. Constant improvements in the technology make possible small group discussions, back channels (such as chat), spotlighting main speakers, use of whiteboard features, and other ways of mimicking an in-person classroom experience online. While this can be done with a laptop or phone, technology-enhanced classrooms allow for students in the classroom and at home to learn together somewhat seamlessly.

Whether in person, online, or both simultaneously, faculty can also make their courses more flexible in simpler ways in order to allow students to continue learning during a pandemic or other personal or global emergencies. For example, flexible or floating deadlines can allow students to showcase their learning while taking into account student or community contingencies such as illness or quarantine (Boucher, 2016). Ungrading (Stommel, 2018) and competency-based education (Johnstone & Soares, 2014) have an individualized and flexible approach built into the system that may benefit students at a time when their ability to march lockstep through a semester is limited. With these kinds of examples in mind, we can design courses that can withstand rough waters and keep all members in the boat as we navigate particularly complicated semesters.

Flexible pedagogy will be especially relevant as we start to see older students return to higher education as they seek reskilling or upskilling to help them negotiate a difficult employment landscape due to economic stressors such as the pandemic (Karra, 2020). With the potential for an increasing number of working students, parents (now perhaps homeschooling their children), and other nontraditional students entering our courses, flexibility becomes more essential to student success (Soares & Smith, 2020).

Prior to this model, many students were counseled to take a withdrawal in class due to circumstances that forced them out of the traditional classroom setting—a working student who is required to take a different work shift to stay employed, a student with a temporary injury or flare-up of a chronic condition that needs attention, a death in the family that requires student travel, or a pregnant student obliged to bedrest. Through instituting a flexible model, students can retain their ability to learn and persist while facing life's changing and challenging circumstances, ultimately leading to a more inclusive learning environment and likely higher institutional retention and graduation rates (Matheson & Sutcliffe, 2017). Varied student needs and

environmental constraints can be addressed through the simple process of instituting ongoing flexibility in our course design.

Encountering Turbulent Waters: Teaching for Resilience

As institutions support flexible teaching strategies, educating during a global emergency also requires that we consider practices designed to foster resilience in our learners, teachers, and systems. Resilience thinking, long studied in ecology and community development, is increasingly part of the academic lexicon (Parker & Keith, 2019). According to Walker and Salt (2006), "Resilience is the capacity of a system to absorb disturbance and still retain its basic function and structure" (xiii). Practices aimed at building resilience in students, as well as in academic communities, can be high-impact learning strategies that are relevant even in smooth waters or the integration of support and wellness services and tools available on campus and beyond that times of turbulence make increasingly necessary. Strategies and course decisions that foster student learning that may be especially relevant in rough water are often simple and easy to incorporate.

- **Provide many low-or-no-stakes assignments.** Students (and faculty) new to online or hybrid education may need practice with the LMS prior to higher-stakes assessments. Requiring many small (but meaningful) assignments in the first part of the term offers students the chance to ensure they are meeting the mark (or gives them a chance to fall in the river and be rescued without as much risk of being left behind) and alerts the instructor to students' challenges before it's too late to respond.

- **Scaffold major assessments.** Breaking higher-stakes assignments or projects into small pieces has many of the same benefits as low-stakes assignments. If possible, building timely and constructive instructor feedback into the system will enhance student learning and increase the likelihood of successful outcomes (Caruana, 2012).

- **Make activities transparent.** Transparency in learning and teaching (TILT) is an approach that involves small changes to assignments in order to increase the transparency of elements such as how an assignment meets student learning objectives, how students can successfully complete the assignment, and what a successful product looks like. Transparency has specific benefits for first-generation and minoritized students (Winkelmes et al., 2019), and are especially relevant in online and hybrid settings when students may feel they have less access to faculty members.

- **Choose inexpensive course materials.** Especially during the economic recession resulting from the pandemic, students may find it difficult to afford course materials. In fact, the increasing cost of textbooks may impede student success even in a normal year (Popken, 2015). When possible, consider using open educational resources or inexpensive books in order to remove extra financial pressure on students.

- **Consider exams or signature projects that don't require proctoring.** Though there are a few cases in which traditional exams must be administered, the move to remote and online courses makes them more difficult. In response to concern about student cheating, there are an increasing number of software options for proctoring exams and surveilling students. However, there is a cost (including financial). Students express concerns about access to technology and about privacy, and some report greater anxiety as a result of surveillance (Harwell, 2020). Ethical considerations are arising for students of color, women, students with disabilities, and transgender people who may be flagged for cheating at greater rates by surveillance services (Swauger, 2020). When possible, formative signature assessments such as projects, portfolios, and even take-home exams and essays can be used to evaluate student learning without the financial and social costs of proctoring.

- **Offer an "oops" token.** Similar to low-stakes assignments, incorporating an "oops" token gives students the opportunity to make a small mistake, such as a missed quiz or daily discussion, without penalty and have it removed from their grade. It also gives them a sense of agency in their learning, which is likely to increase motivation for success (Darby & Lang, 2019).

Resilient pedagogy is more than making decisions about particular assignments and class materials. On many campuses, services that support resilience and persistence are siloed or lacking, especially in an online environment, but faculty can integrate resilience supports and tools right into their courses. Services including academic support, mental health counseling, and diversity and social centers and activities are central to the student experience, whether face-to-face, online, or hybrid. A benefit of brick-and-mortar institutions is that they provide these support services within close proximity to a student's living and learning environment. When waters get rough, a student can easily make an appointment for counseling services, access the campus meditation space, jump on a treadmill, or find their people within campus hubs. These services increase student engagement, support student success, and ultimately build resilience as students face waves of change within an otherwise stable setting. Enriching faculty-student interactions as well as taking advantage of resources that promote academic success such as learning centers, mental health support, and office hours have been shown to positively influence retention (Wyckoff, 1998; Habley, 2004). Taking it a step further, Tinto (2004) notes that when academic supports are integrated into credit-bearing classes, students are more likely to engage in services and succeed.

In an online or hybrid format, especially in an institution unaccustomed to remote learning, these services are often less available or accessible. In addition to academic stress, undergraduate and graduate students are currently experiencing higher and more frequent levels of depression and anxiety (Chirikov et al., 2020). The American College Health Association (2020) reports that 60% of students indicate that the pandemic has made it more difficult to access mental health care. As a result of the pandemic and lack of access to care, they experience lower levels of psychological well-being. From racial tension to global climate change to financial and health-related stress, college students are experiencing unprecedented levels of need with less institutional

support. As we face the continuation of the COVID era and even future personal or global crises, instructors need to find a way to embed these services into the curriculum as a way to support students. Colleges and universities should consider using resilient and flexible teaching to enable the success of their students, rather than impede progress through lack of services during turbulent times.

A resilience mindset is a set of skills and dispositions that can be built intentionally over time. Csikszentmihalyi's (2008) theory of "flow" provides an interesting model for the kind of mindset students and adventurers need to meet challenges. Flow is a state of being that is characterized by intense concentration, control, and intrinsic reward; and that avoids boredom, stagnation, and frustration. It is experienced when an individual achieves a balance of skill and challenge—the rapids are big enough to be interesting and challenging, and even a bit risky, but the rafter's skills are strong enough to meet the task. Growth occurs when this balance is maintained, though the challenges may increase over time. In the classroom, flow is also achieved by the right balance of skill and challenge, though students, just like rafters, need constant and consistent skill development and support in light of the changing waters of the educational landscape. With this in mind, we can take the best of the traditional campus supportive experience and integrate it into the online or hybrid experience in order to build resilient and resourceful students, even if they face constant disruption in their learning environment.

To begin with, faculty can create courses that show an empathetic attitude toward life challenges and also provide support through integrating practices traditionally provided through the external services of a brick-and-mortar campus. Empathy is the ability to deeply understand another's situation, beliefs, and feelings and to express appropriate concern. Creating an empathetic learning community provides students with lifelong skills toward understanding themselves and their own needs while building collaborative relationships with others. Empathic classrooms increase the affective quality of the student experience and aid in retention but also allow students to feel a sense of connection in an otherwise disjointed and hyper-digital world.

In addition to modeling empathy in our interactions with students as they face the unusual circumstances that the world has presented to them, resilient pedagogy teaches students about empathy and having care for others around them despite differences or obstacles. Embedding simple practices into your online classroom does not take a lot of time and allows students to reflect on their learning and their relationships in class and beyond and allows instructors to assess their engagement. Faculty can express, model, and cultivate empathetic care in some of the following practices:

- **Use icebreakers and temperature checks.** Take the first few minutes of class to provide an icebreaker or "temperature check" on student well-being. An icebreaker might be a question, short activity or game designed to build community and warm a class up to further conversation. A temperature check is simply asking students how they are doing that day. It can take place in the form of a single verbal emotion; a gesture such as thumbs up, sideways, or down; or by using a metaphor like the weather or a

thermometer. Icebreakers or temperature checks can be performed in-person or through online features such as a Zoom chat, poll, or LMS discussion board.

- **Set community norms and ethical classroom expectations.** Throughout the term, it is important to discuss and model community norms and expectations. At the intersection of multiple national and international crises, our learning environments should showcase strong communities with respect for diversity and a shared goal of creating resilient individuals. This could be in the form of a "do it yourself" list of rules or standards for discussion, classroom norms (such as turning video on or using other technology during class), or even a collaborative syllabus (Hudd, 2003).

- **Collect data from students on their progress and well-being in class or beyond.** Simple classroom critical incident questionnaires (Brookfield, 2005) can be used not only to deepen student engagement by asking them to reflect on their learning; they can also be used to give students a chance to express challenges, weigh in on instruction, and note any concerns they may have about inclusivity. Offer virtual office hours and encourage students to drop in regularly for face-to-face feedback.

- **Include syllabus statements for mental health, support for students with disabilities, and inclusive classrooms.** Building statements into your syllabus that evidence care and concern for student needs can set the tone in creating the kind of learning environment that you want a student to experience. Through adding statements geared toward student mental health, course access, and inclusive classrooms, you provide a warm and inviting tone to your students and provide transparency around support and additional resources. Presenting these resources at the beginning of class as a best practice for learning normalizes the process for students to ask for help.

- **Highlight diverse readings and resources.** Show students that you are intentional about decolonizing your course on the syllabus and throughout the activities of the course.

- **Ensure that students have full access to their learning.** The water we're in is often choppy enough without faculty creating unnecessary disturbances. Accessibility practices should be engaged in every aspect of teaching and learning. From creating text descriptions to providing accessible documents, the accessibility of the course can reduce barriers that would otherwise need to be mitigated through external campus services, preventing resilience and persistence. Additional resources like DO-IT at the University of Washington (2011) provide faculty with guidelines for universal design for online learning. Accessibility checkers, such as on Microsoft Word or Google documents are quick tools that faculty can employ to evaluate their course with an eye toward access.

- **Assess your instruction.** Invite a trusted colleague to observe a class meeting, explore your online platform, or interview your students in a midcourse review to gauge their progress and response to your instruction. Discussing feedback with an educational development specialist can help to determine

whether your instructional methods are likely increasing student learning, or whether it's time to change course.

In addition, increasing students' awareness in the environment of their own needs allows them to better prepare and decrease stress as they encounter rough waters. Well-being practice can be woven throughout the classroom experience. Starting with the use of syllabus statements, faculty can embed traditional brick-and-mortar support services into their online classroom while also creating a culture of support and care for their students. Mental health statements, accessibility statements, and diversity and inclusion statements can send a message of support to students in the face-to-face or online classroom in addition to developing class norms.

Another relatively simple way of incorporating resilience strategies and services into a course is to highlight campus support systems in the learning-management system. Providing LMS widgets for counseling services, tutoring and academic coaching, online fitness opportunities, and campus support groups, for example, can communicate to students that their learning context is holistic and that the instructor cares about their well-being in addition to their performance in a specific course. Inviting members of student support offices to visit class, especially online, connects students immediately to activities, such as tutoring or coaching, which bolster their chances of success. These are simple ways with a very small-time investment that faculty can expand the circle of support for each student.

Strategies aimed at wellness, such as preventative and contemplative practices, can even be incorporated directly into course content. Some faculty begin and end class with meditation and reflection in order to help students deepen their learning while at the same time modeling stress relief and wellness (Kirby et al., 2020). These practices support student mental health as they move through daunting times while also providing lifelong habits to increase emotional regulation, decrease reactivity, increase flexibility, as well as increase focused attention and well-being (Davis & Hayes, 2012). Examples of contemplative and reflective pedagogical strategies include:

- **Engage in deep breathing and visualization.** Allow time for students to settle into class through deep breathing or visualization. Granting time for a few deep breaths before class begins is an example of a preventative practice that can help to reduce stress and anxiety. In addition, having students visualize the concepts you are discussing for the class or helping them relax through mentally visualizing the day or the class, or even their success during the semester, can also be useful.

- **Provide a moment of silence**. In a life surrounded by noise pollution, students can benefit from structured silence or time for reflection and contemplation during class. One study suggests a connection between silence and new brain cell growth (Kirste et al., 2013).

- **Promote growth mindset.** Growth mindset is the belief that intelligence can be developed through effective use of strategies, effort, and support from others (Dweck, 2007). Faculty can use growth

mindset language in feedback on assignments and in class meetings. In addition, faculty can notice and acknowledge fixed mindset language and can help flip it in order to see a challenge as an opportunity for growth.

- **Embrace mantras for self-support.** Encourage students to use mantras—phrases of self-support—around their capacity to succeed as a student. You might introduce your students to a short growth mindset phrase like "I am going to embrace new challenges in this class" or "I'll ask for help when I need it" or "learning is hard, but worth it."

- **Consider embedding additional health and wellness resources.** In addition to embedding campus resources into your class syllabus, consider embedding additional outside resources for students. It could be a tip or challenge around health and wellness or a video and links to national organizations like the Mayo Clinic or the National Alliance on Mental Illness. National resources offer numerous strategies and tips on topics like sleep, exercise, and stress management.

Many of these strategies are consistent with a growing understanding of trauma-informed pedagogy. In addition to classroom and campus strategies, we need to help students, and each other, sit with our situation. As Mays Imad states, "the social isolation and loneliness of the COVID-19 pandemic present significant emotional and physical health risks that make us feel disconnected and put us on high alert, triggering the body's stress response" (2020). During the pandemic, we must remember that we and our students are teaching and learning in an environment where just going to the grocery store may feel dangerous.

Resilient and flexible teaching should acknowledge the inevitability of rough waters of the learning experience, and not just in our courses. Faculty and staff should model resilience strategies by incorporating them into our own lives. Institutions are reckoning with policies that create more disturbance during a crisis, such as requiring on-campus work for parents with kids at home or elders to care for (Mangan, 2020). While it is beyond the scope of this chapter to make sweeping recommendations for institutional policies, there are some simple ways to support colleagues during a crisis.

Oar to Oar: Paddling Together

With the stresses of health concerns, physical distancing, potential job loss, and caring for others, faculty and staff are also living through a pandemic and experiencing depression, illness, and burnout (Flaherty, 2020). At the same time that faculty and staff are steering the boat, they are also taking care of the student crew. They are caring for themselves and their families while also experiencing the emotional strain of caring for others within their classrooms. Increased workload as a result of crises can contribute to further stress. Helping faculty to both reduce stress and increase positive experiences can help them to build resilience and continue to steer with confidence through rough waters.

To reduce stress, developing habits of self-care and resilience serves us well in good times as well as times of crisis, and modeling resilient behavior for our students helps them, too. Berg and Seeber (2017) note that faculty stress affects student learning, but that modeling healthy academic behavior around time management and workload expectations can have a positive effect on our learners.

During challenging times, it can also be useful to refocus on hope as well as reconnect with our own teaching values. Consider asking what brings you happiness within your teaching and capitalize on these joyful activities. Reflect on what brought you into the profession and what you enjoy most about this work. Finally, it is important to reflect on what you and your students need right now. While it can be hard to let go of important content, meeting your needs and the needs of your students should take priority.

Teaching centers and faculty-development professionals can help by providing resources for resilience, such as support groups, faculty wellness activities, social media gratitude campaigns, or just regular check-ins and consultations. Teaching centers are designed to support faculty, and their personnel are willing to help, whether that be through providing individual support, leading campus workshops, or facilitating comprehensive online and RAFT instructor training. A teaching and learning environment that promotes a resilient, flexible, humane, and empathetic community is good for student learning, for faculty wellbeing, and for a world that needs, now more than ever, educated citizens prepared and interested in using their knowledge for good. Here's a checklist of simple ideas for making your course and your professional role more resilient and flexible.

RAFT Checklist

- Inclusive, engaging, and clear syllabus

- Syllabus statements and LMS widgets on inclusivity, accessibility, mental health resources, tutoring/coaching, and other relevant campus resources

- Alignment of campus events, services, and activities with course content

- Clear guidelines for building class community and establishing norms

- A plan for incorporating mindfulness, reflection, and contemplation

- Growth mindset language and the use of mantras for student (and faculty) success

- Clear routines and policies

- Accessible and affordable class materials

- Welcoming language and support for those with specific challenges, such as students with learning

disabilities, working students, caregivers, etc.

- Scaffolded, transparent assessments with clear but flexible deadlines and/or paths to completion

- Icebreakers and temperature checks

- Inclusion (on the LMS and in class) of holistic wellness resources or activities

- Multiple formats for engaging with course material and peers

- Opportunities for feedback, such as critical incident questionnaires

- A plan for assessment of instruction (course observation or midcourse review)

- Space in the term for faculty wellness and community

Staying Afloat: Avoiding Snags and Holes

Experienced whitewater rafters know that riffles and rapids are great fun when you're up to the challenge, but also that there is danger in hazards such as snags (branches that can drag you under) and holes (when water cycles both up and downstream and can pull the boat under). Likewise, there are positive and negative consequences to our pedagogical choices. Even with all we have learned about supporting students and ourselves in turbulent times, we also have to be aware of the tools we use. In rocky waters, we need a sturdy but lightweight vessel. A raft that is bogged down by extra equipment is unwieldy and dangerous and is more likely to get trapped in a snag or hole. A course that uses too much or too many kinds of new tools and material threatens the learning process. Since the beginning of the pandemic, faculty and staff have been inundated with emails and calls from established and startup educational technology companies with short-term free trials and other offers aimed at getting more people to buy hardware, software, and apps. While many of these may be useful, students (and faculty) may be overwhelmed by the overuse of such tools (especially if multiple faculty members are experimenting with different tools in addition to what may be an overcomplicated and clunky learning management system). In a time of crisis, resilience rests partly on stability and expectations. A student faced with multiple ways to engage in classes, a variety of ways to turn in assignments, and too many apps to keep track of may find it difficult to maintain an eye on the goal and to navigate an over-complicated learning environment. Further, we know that the overuse of screens can have negative effects on humans (Domingues-Montanari, 2017). Allowing students to incorporate activities into their learning that build community, inspire creativity, and reap the healthy benefits of the outdoors (especially in light of a highly infectious disease) will likely have greater positive effects downriver.

Embracing the Ride: Turning Disruption into Adventure

As instructors embrace our new RAFT, we are provided with a unique opportunity to help our students understand that out of disruption comes a more resilient learner capable of handling a variety of life's challenges. Csikszentmihalyi's concept of flow might again be especially apt in thinking about teaching during an emergency. The sweet spot of flow in whitewater rafting occurs with the right mix of skills and challenge, and often with a crew leader who models an adventurous but skilled attitude toward risk; likewise, flow in teaching and learning results from having the requisite skills and support to actively embrace the challenges of learning, guided by a faculty member who successfully navigates the difficult terrain of teaching during a crisis. Research on flow experiences suggests that people are more likely to feel the joyfulness of flow when actively engaged with others (Walker, 2010). This makes the classroom an engaging environment.

The obstacles of learning during a pandemic must be met with a holistic circle of academic and affective support that offers a new and collaborative mind and skill set. While students may initially imagine being thrown off the boat into dangerous waters, teachers can help them navigate the rapids through a supportive teaching model like RAFT.

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7.

INNOVATIVE PEDAGOGIES FOR PROMOTING UNIVERSITY GLOBAL ENGAGEMENT IN TIMES OF CRISIS

Steven R. Hawks

Even as universities, institutes, and professional associations are renewing their commitment to global engagement and the internationalization of higher-education campuses, there are significant geopolitical and social challenges that are pushing back (van der Wende, 2017). The immediate crisis posed by the global coronavirus pandemic (COVID-19) has further hampered progress by bringing a number of critical global engagement activities to a sudden halt (Brimmer, 2020). In the midst of these challenges there is an opportunity to consider theory-driven pedagogical innovations that can move the global engagement agenda forward even in times of complexity and crisis.

This chapter begins with a careful review of the considerable ongoing efforts that many institutions of higher learning are putting forth to enhance global engagement activities and outcomes among students and faculty. The nature of these activities and the growing political, social, and health-related challenges to their full implementation are categorically presented and discussed. The body of the chapter presents a theory-based approach for designing and implementing pedagogical strategies that can meaningfully address key challenges, while at the same time moving forward important elements of the higher-education global engagement agenda. Specifically, I analyze and apply best practices from traditional study abroad programs, as informed by transformative learning theory, to new pedagogical frameworks that are capable of achieving similar results. Virtual study abroad and domestic study away programs represent two promising strategies for achieving global engagement outcomes that are comparable to traditional study abroad programs, and in some ways superior. By embracing these types of theory-based pedagogies, higher-education institutions can continue to be deeply engaged in the promotion and development of global engagement competencies among students and faculty even in the age of COVID-19 and other daunting challenges.

Declaration on University Global Engagement

According to the American Council on Education, "comprehensive internationalization" as it relates to university campuses entails a variety of interconnected components, including articulated institutional

commitment; administrative structure and staffing; curriculum, cocurriculum, and learning outcomes; faculty policies and practices; student mobility; and collaboration and partnerships (Peterson & Helms, 2013). Efforts to strengthen each of these components have become an important priority for many higher-education institutions in recent years as they seek to broaden and strengthen global engagement efforts (van der Wende, 2017).

As one encouraging example of this trend, President Ángel Cabrera of George Mason University led a group of international education leaders in 2017 in the development of a Declaration on University Global Engagement (Declaration on University Global Engagement, n.d.). Along with widespread endorsement by numerous universities across multiple nations, the declaration has been signed by several organizations, associations, and institutes such as the American Council on Education, the Association of Public and Land-Grant Universities, the Institute of International Education, and NAFSA: Association of International Educators (Signatories – Declaration on University Global Engagement, n.d.).

Significantly, the pledge is student oriented, competency-based, and specifically commits higher-education institutions to "educating students who can successfully live and work in our globally connected world and change it for the better" (Declaration on University Global Engagement, n.d.). Such strengths and abilities among university graduates will be essential as the world continues to face difficult geopolitical, social, cultural, and health challenges.

In order to achieve this outcome, the pledge (Declaration on University Global Engagement, n.d.) commits universities to a series of five actions, including:

- Developing the global competence of all students so they have the skills to productively engage with individuals from different cultural and national backgrounds.

- Increasing our students' understanding of the most pressing economic, social, and environmental challenges facing the world today.

- Significantly increasing student physical and virtual mobility across nations so that many more of our students experience realities outside their domestic contexts and deepen their understanding of challenges and opportunities in other parts of the world.

- Committing to cross-border and cross-sector research, knowledge sharing, and innovation in collaboration with our public and private stakeholders in pursuit of novel solutions to the SDGs [Sustainable Development Goals].

- Communicating publicly about the progress and importance of our global engagement.

The development of this declaration, the articulation of the outcomes it strives for, ongoing efforts to achieve the five actions it proposes, and the broad endorsement of the declaration by many key stakeholders are all deeply positive signs of a higher-education system that is committed to "discovering, producing, and sharing new solutions to the world's most pressing problems" (Declaration on University Global Engagement, n.d.). Implementing these five pledged actions, however, has become increasingly difficult due to a number of unexpected and troubling developments.

Global Engagement Under Fire

As part of its University Futures Project, the Organization for Economic Co-operation and Economic Development's Center for Educational Research and Innovation (CERI) published a 2006 report titled "Four Future Scenarios for Higher Education" (CERI, 2006). Some scenarios were predicated on expectations of greater cooperation among countries, the expansion of international networks, advances in civil society, and a growing culture of openness. At the time, there seemed to be widespread optimism that these underlying currents would characterize ever-greater levels of global engagement and interconnectedness among universities and well-trained students (CERI, 2006).

Of the four scenarios, Scenario 2, "Serving Local Communities," however, envisioned a darker future in which university global engagement would shrink based on a backlash against globalization, a stronger emphasis on nationalistic agendas, and skepticism in regard to internationalization due to the pervasiveness of terror attacks, threats of war, concerns about the loss of national identity, and intense political debate surrounding the perceived threats of immigration (CERI, 2006). Sadly, many aspects of this scenario, by far the bleakest and most unanticipated of the four, have become present-day challenges facing the internationalization and global engagement initiatives of universities (van der Wende, 2017).

Indeed, if anything, Scenario 2 understates the current challenges facing higher education in relation to the promotion of global engagement. Marijk van der Wende (2017) noted that support for open borders, multilateral trade, and cooperation are being weakened as evidenced by walls being built, borders closing down, and rising populist tendencies that reject internationalism. And all of these forces were in full swing when the COVID-19 pandemic hit.

The Impact of COVID-19 on University Global Engagement

The COVID-19 crisis has in many ways exacerbated the geopolitical challenges outlined above, while at the same time dealing a crushing blow to the specific role of international education and education abroad in the promotion of university global engagement (Brimmer, 2020; Rumbley, 2020). All aspects of comprehensive internationalization are being challenged by COVID-19, but especially the development of global

curriculum, faculty practices related to global engagement, student mobility, and international collaboration (Chan, 2020).

Since the arrival of COVID-19, for example, ongoing changes and challenges to visa requirements and eligibility for international students and scholars in the United States has universities and international students deeply concerned (Department of Homeland Security, 2020). It has been argued in the media that the proposed changes "could devastate science research and tech innovation nationwide"—and that it sends the message that international students and scholars are "not wanted" in the United States (Schnell, 2020). In the spirit of populism and nationalism, the current proposal indicates that national security trumps openness and exchange. Without providing any evidence that international students and scholars pose a new or growing national security threat, the justification for international student and scholar visa restrictions nevertheless states that "This change would provide the Department with additional protections and mechanisms to exercise the oversight necessary to vigorously enforce our nation's immigration laws, protect the integrity of these nonimmigrant programs, and promptly detect national security threats" (Department of Homeland Security, 2020). The proposal is being vigorously contested by many universities and organizations (NAFSA, n.d.-a). In the meantime, the education of students is being interrupted, lives are in chaos, and the financial impact to students, universities, and the Midwest college towns where these students live is substantial (Fischer & Whatley, n.d.; Gewin, 2020; Schnell, 2020).

Additionally, COVID-19 has ground the US study abroad complex to a halt, inflicting hardships on offices, institutions, and other entities that are funded in part by participant fees. At the same time, a large cohort of students has been denied the unique and powerful learning opportunities that experiential, study abroad programs afford. The potential role these traveling students and scholars could have played in integrating an international, intercultural, or global dimension back into their communities and home institutions' learning culture has been correspondingly diminished (Brimmer, 2020; Mitic, 2020).

Attempts to redirect global learning to technologically based, virtual, and online formats have been hampered—especially on the global stage—by unequal levels of, and access to, distance education technologies among institutions, educators, and students. Finally, US border closures, travel restrictions, and visa changes have reduced the flow of international students, researchers and educators into US higher-education institutions, and have thereby had a severe negative impact on the intellectual and cultural contributions of these visitors—not to mention a significant economic impact (NAFSA Financial Impact Survey Summary Brief, n.d.-b). At the time the crisis broke, for example, there were over 1,000,000 international students studying in the US contributing $48,000,000,000 to the economy and supporting 458,000 jobs (Brimmer, 2020).

In short, as national borders close, geopolitical events provoke hostilities, populist tendencies undermine open and equitable societies, and the COVID-19 pandemic rages, fulfilling the Declaration on University

Global Engagement pledge and realizing the internationalization of university campuses grows increasingly difficult (Table 1).

Table 1
Challenges Posed by Current Geopolitical and Pandemic Disruptions in Relation to the Five Actions Proposed by the Declaration on University Global Engagement

Current Geopolitical and Pandemic Crisis	Five Actions of Univ. Declaration
Populism Creates Skepticism Regarding Internationalization	Develop Global Competence and Engagement Skills of All Students
Nationalistic Agendas Diminish Global Concerns	Increase Student Understanding of Global Challenges
Travel Restrictions Halt Education Abroad	Increase Student Mobility to Experience Global Realities
International Students and Scholars are Hampered in Studies and Research by Visa Restrictions	Enhance Cross-border, Cross-sector Knowledge and Information Sharing
Importance of Global Engagement and Internationalization is Questioned	Communicate about Progress and Importance of Global Engagement Efforts

Due to these challenges and the threats they pose, it is becoming vitally important to take immediate, proactive steps to reframe strategies for achieving the ideals championed by the University Commitment to Global Engagement (Brimmer, 2020; Declaration on University Global Engagement, n.d.; van der Wende, 2017). Given that the five actions promoted by the Declaration on University Global Engagement are student-oriented and competency-based, one promising avenue that should be explored involves the development, implementation, and evaluation of innovative, theory-driven pedagogies that can lead to student mastery of the competencies described in the five actions—even within the current geopolitical environment and in the midst of the COVID-19 pandemic.

The Traditional Role of Study Abroad

One area where concrete action can be taken is in relation to strategies for maintaining study-abroad-type programs and experiences. Indeed, traditional study abroad programs have been one of the primary avenues for "educating students who can successfully live and work in our globally connected world and change it for the better" (Collins, 2019; Maharaja, 2018; Tarrant et al., 2014). The number of US students studying abroad has grown by 40% since 2008, exceeding 340,000 participants annually (Open Doors/Fast Facts, 2019), and over 90% of US higher-education institutions offer some type of study abroad program (Hoffa & Depaul, 2010). Study abroad programs that utilize sound pedagogy have been shown to promote intercultural competence, global awareness, global citizenry, and self-confidence in the face of growing diversity and globalization (Bai et al., 2016; Tarrant et al., 2014). Among past study abroad participants, such programs can also lead to higher levels of long-term civic engagement, philanthropy, global engagement, and voluntary

simplicity (i.e. avoidance of materialism and conspicuous consumption) (Murphy et al., 2014; Paige et al., 2009).

Decades of research have identified a number of best practices in relation to study abroad pedagogy that are associated with outcomes consistent with the Declaration on University Global Engagement. In general, successful study abroad programs require skillful instruction and facilitation, deep levels of culturally respectful engagement, and adherence to ethical principles and standards (Gammonley et al., 2007; Shah et al., 2019).

Faculty Engagement

For short-term, faculty-led study abroad programs, one study found that instructor facilitation of spontaneous learning, combined with the instructor's commitment to the importance and value of intercultural learning, was the most important variable predicting significant gains among students in intercultural development from pre- to post-travel (Anderson et al., 2016). High impact instructors placed emphasis on taking advantage of in-country teaching moments as they occurred rather than rigorously following the content outline for their course. This strategy allowed students to engage in an ongoing evaluation of their own value systems and assumptions, which helped them better comprehend content topics with greater appreciation for diverse perspectives (Anderson et al., 2016). More broadly, it is the responsibility of the faculty member to prepare clear, strong academic content that gains added value by being taught abroad (Donnelly-Smith, 2009).

The Centrality of Community Voice and Local Knowledge

As noted above, the role of engaged faculty members is paramount in designing courses that not only are academically strong, but also value intercultural competence and take spontaneous advantage of teaching moments. Of equal importance, perhaps, is a faculty-led course design that shares the stage with local instructors and experts who can provide an authentic voice for local knowledge in a community-based setting (Collins, 2019; Hartman et al., 2018). Being exposed to local knowledge by community members allows students to broaden perspectives that can build intercultural understanding and competence. It can also be immensely rewarding for local community members who feel that their long-held values and knowledge are being respected (Collins, 2019; Hartman et al., 2018).

Participatory Approaches

Numerous studies show that experiential education, service learning engagement, practicum-type experiences, students as researchers, or other participatory approaches can be powerful catalysts for developing new understandings and perspectives that strengthen intercultural competence, global awareness,

and global citizenry among study abroad participants (Dyjack et al., 2001; Wasner, 2016). Whatever form the local integration takes, students learn best in programs that put them in direct contact with the host community, engaged in meaningful activities that have relevance to both the student and the community members (Donnelly-Smith, 2009; Hou, 2018; Strange & Gibson, 2017). This adds the additional burden on the faculty leader of being adept at facilitating experiential learning (Donnelly-Smith, 2009).

Critical Thinking and Self-Reflection

Critical thinking and reflection have become essential components of well-designed study abroad programs (Hartman et al., 2018; Sharma et al., 2011). Reflection becomes a catalyst for converting experiences and new understandings into new and sometimes transformative perspectives (Perry et al., 2012; Savicki & Price, 2017). Guided reflection can include prompts for daily journaling, group discussions, or reflection papers tied to specific experiences (Elverson & Klawiter, 2019). One study found that guided reflection methods helped promote critical thinking in relation to course concepts; inspired students to process the experience in a meaningful manner; and helped students make important connections between academic concepts, experiences, and service learning activities (Elverson & Klawiter, 2019). Another study used technology-mediated reflection activities that helped students become more aware of their surroundings and increase their levels of cultural awareness (Lomicka & Ducate, 2019). Many returning study abroad participants are given further opportunities to internalize new perspectives by becoming study abroad ambassadors at their institutions and sharing transformative experiences with others (Donnelly-Smith, 2009; Mitic, 2020).

A Theoretical Framework for Moving Forward

Transformative learning theory provides useful constructs for developing new pedagogies that align closely with best practices and desired outcomes associated with study abroad programs (Bain & Yaklin, 2019). This alignment of theory and practice (if applied creatively) can provide a well-adapted and well-researched format for testing and evaluating innovative pedagogies designed to promote intercultural competence and global citizenship skills among students (Bell et al., 2016; Chwialkowska, 2020; Hartman et al., 2018; Table 2).

NOTES

Table 2
Alignment of Transformative Learning Theory with Study Abroad Best Practices

Transformative Learning Theory	Study Abroad Best Practices
Cultivate Experiential Intelligence, Holistic Learning, and Transformative Perspectives	Develop Intercultural Competence, Global Citizenship, and Personal Development Skills
Question and Rethink Assumptions about One's Own World View	Create Deep Engagement with Diverse Communities and Local Knowledge
Be Immersed in Disruptive Experiences and Active Learning	Maximize Participator, Experiential Learning
Use Critical Thinking and Reflection to Foster Understanding	Engage in Guided Critical Thinking and Self-Reflection Learning Activities
Transform Global Perspectives and Develop New Frames of Reference	Share Experiences and Transformative Outcomes Realized through Deep Self-Reflection

Transformative learning theory (Mezirow, 1991, 1997) has evolved into one of the most robust and heavily researched theories underpinning modern approaches to adult learning (Biasin, 2018; Kitchenham, 2008). Of particular interest, transformative learning theory (TLT) is considered a useful construct for reframing higher-education pedagogy in times of systemic global dysfunction—such as the current challenges discussed above (Lotz-Sisitka et al., 2015).

TLT posits that immersion in uncomfortable or disruptive situations, in tandem with deep reflection, critical thinking, and active learning, enables students to reassess their assumptions about the world and arrive at transformative perspectives with increasingly robust frames of reference (Strange & Gibson, 2017). These new perspectives become the foundation for positive, long-term behavioral changes (Schalkwyk et al., 2019). All of these TLT pedagogical techniques have been applied and studied within the context of study abroad programs for many years (Chwialkowska, 2020; Myers et al., 2005; Perry et al., 2012; Sobania, 2015).

Fortunately, there are evolving pedagogical strategies for achieving the transformative benefits of study abroad programs, even without the opportunity to travel or engage on site with international partners. Using the tenets of TLT and best practices from study abroad programs, these emerging avenues for achieving global engagement outcomes during the COVID-19 pandemic and concurrent geopolitical challenges are worth understanding and pursuing.

Virtual and Domestic Study Abroad as Viable Alternatives

Several fruitful ideas have been put forward that include virtual education abroad, domestic study away, faculty-led programming, and global education at home (Phillips & Riner, 2018; Whalen, 2020). Two options that seem promising are virtual study abroad and domestic study away.

Virtual Study Abroad

Rapidly evolving and highly effective educational technologies, including virtual design studios (Dave & Danahy, 2000), have created an opportunity to create virtual study abroad experiences that achieve many of the same benefits as traditional study abroad programs (Amerson, 2020; Hilliker, 2020). Case studies (Lipinski, 2014; Pertusa-Seva & Stewart, 2000) and road maps are beginning to emerge that can provide a template for creating robust, virtual study abroad programs that build upon transformative learning theory and incorporate traditional study abroad best practices (Amerson, 2020; Coleman & Chafer, 2010).

One early attempt at creating a virtual study abroad experience was designed for students enrolled in the Spanish curriculum at the University of Kentucky (Pertusa-Seva & Stewart, 2000). The creation of the Segovia Virtual Study Abroad Program was prompted by the acknowledgement that study abroad experiences were very valuable for language learners (linguistically and culturally), but only a small portion of students were able to participate in distant, costly study abroad programs. The intent was to bring the benefits of study abroad to a broader audience by creating a virtual experience. The Segovia Virtual Study Abroad Program created a virtual connection between campus-based students and an existing, semester-based study abroad program taking place in Segovia, Spain. In the traditional study abroad program, students live with local families and attend Spanish language classes at a private academy (Pertusa-Seva & Stewart, 2000).

In the 12-week virtual program, a website-based interface was created that included student biographies, portraits, an album of photographs taken by students and the program director, and student journal entries about their experiences. Two language composition classes at the University of Kentucky, and traditional study abroad students already in Segovia, used the platform to make observations, ask questions, and provide responses to each other using an electronic bulletin board. This strategy allowed for meaningful exchanges between students based at the University of Kentucky campus and traditional study abroad students studying in Segovia. A series of "contact assignments" provided opportunities for engagement between students in each group related to study abroad students' routines, daily life, excursions, and independent travel. For study abroad students in Segovia, the assignments provided opportunities for critical thinking and self-reflection that enhanced their study abroad learning experience. For students on the University of Kentucky campus, the engagement stimulated their interest in learning about culture and language and pursuing future study abroad opportunities (Pertusa-Seva & Stewart, 2000).

A more recent effort to create a virtual study abroad experience involved linking two classrooms, one at Middle Tennessee State University and one at the University of Pécs in Pécs, Hungary (Lipinski, 2014). After working through logistical and technological challenges, instructors for each classroom chose a common textbook, developed the curriculum, and created learning activities that could take advantage of the joint, one-hour class periods, as well as out of class activities that engaged students from both classrooms. A primary objective was to get the students from each classroom to work together. Technology was used to help students

work together on case studies and other out-of-class assignments. Student feedback was very positive in relation to the program objectives of increasing international cultural awareness and stimulating interest in pursuing traditional study abroad experiences in the future (Lipinski, 2014). Other current research papers have reported strong educational gains in global citizenship skills through virtual classroom interchanges with international partners (Bothara et al., 2020; Hilliker, 2020; Wojenski, 2019).

Amerson (2020) has suggested a number of pedagogical strategies for achieving global engagement competencies without study abroad. In addition to collaborative online international learning (COIL), similar to the examples overviewed above, she recommends global health blogs, mapping vulnerable populations, international collaboration on case studies, and study-abroad-type engagements with local communities and cultures in the immediate vicinity (Amerson, 2020). This leads us to a more thorough exploration of study abroad at home or domestic study away as viable options for developing global competency skills.

Domestic Study Away

A key principle of study abroad experiences is to "not forget home," implying that many issues that characterize international settings (e.g., diverse cultures, languages, income levels, etc.) can often be found domestically, even in the near vicinity of home campuses (Amerson, 2020; K. Fischer, 2015b). Domestic off-campus programs can be designed and implemented in ways that achieve many of the benefits associated with traditional study abroad programs (Sobania, 2015; Soria & Troisi, 2014).

A study by Coyer et al. (2019) used qualitative research methods to evaluate the potential of a local, service-based, experiential learning opportunity to yield global learning outcomes. In this study, students cooked meals collaboratively with underserved populations while applying food preparation and planning skills. Student discussion groups met weekly to reflect on experiences, discuss progress and make plans. Learning activities were designed and outcomes assessed using constructs of Mezirow's transformative learning theory (Mezirow, 1991, 1997). Based on an analysis of student responses, the researchers concluded that a number of emerging domains mapped well to global learning objectives and provided promising evidence that local, community-based experiences can foster student learning outcomes associated with global engagement competencies (Coyer et al., 2019).

In a similar study, nursing students in New York City were immersed in partnership-driven, sustainable, community-based projects within their own city (Lane et al., 2017). Traditional study abroad best practices of reflection, community interaction, and faculty engagement were built into the program and led to explorations of global issues and trends, along with social and cultural issues and needs at the local level. As a result of the experience, researchers found that student perspectives were broadened, cross-cultural competencies developed, and the ability to apply nursing skills in diverse settings strengthened. The authors

concluded that domestic study away led to intercultural competence gains similar to more traditional study abroad programs (Lane et al., 2017).

As a push back to growing levels of global populism, Toms (2018) argues that greater efforts are needed at home to engage students in domestic-based global learning experiences that can help students analyze, understand, and engage with the complex realities that face the nation and the world. She presents a case study involving a partnership with a local food bank where students can "apply the theory and practice of global civic commitments through place-based, experiential inquiry" (Toms, 2018, p. 77). She concluded that deep commitment to and understanding of local place, culture, needs, and engagements is foundational to the broader ambitions of global outreach.

In addition to domestic study away, internationalization efforts on home campuses may be of significant importance. Based on a large-scale study of students' participation in traditional study abroad versus participation in on-campus global/international activities, Soria and Troisi (2014) found that on-campus participation involving global/international coursework, engagement with international students, and participation in global/international cocurricular activities may actually yield greater student benefits in relation to the development of global, international, and intercultural competencies (Soria & Troisi, 2014).

Table 3
Critical Parallels Between: Challenges Posed by Current Geopolitical and Pandemic Disruptions; Five Actions Proposed by the Declaration on University Global Engagement; Constructs of Transformative Learning Theory; and Study Abroad Best Practices

Current Geopolitical and Pandemic Crisis	Five Actions of Univ. Declaration	Transformative Learning Theory	Study Abroad Best Practices
Populism Creates Skepticism Regarding Internationalization	Develop Global Competence and Engagement Skills of All Students	Cultivate Experiential Intelligence, Holistic Learning, and Transformative Perspectives	Develop Intercultural Competence, Global Citizenship, and Personal Development Skills.
Nationalistic Agendas Diminish Global Concerns	Increase Student Understanding of Global Challenges	Question and Rethink Assumptions about One's Own World View	Create Deep Engagement with Diverse Communities and Local Knowledge
Travel Restrictions Halt Education Abroad	Increase Student Mobility to Experience Global Realities	Be Immersed in Disruptive Experiences and Active Learning	Maximize Participatory, Experiential Learning
International Students and Scholars are Hampered in Studies and Research by Visa Restrictions	Enhance Cross-border, Cross-sector Knowledge and Information Sharing	Use Critical Thinking and Reflection to Foster Understanding	Engage in Guided Critical Thinking and Self-Reflection Learning Activities
Importance of Global Engagement and Internationalization is Questioned	Communicate about Progress and Importance of Global Engagement Efforts	Transform Global Perspectives and Develop New Frames of Reference	Share Experiences and Transformative Outcomes Realized through Deep Self-Reflection

Putting it All Together

One major criticism of study abroad programs is that they do not reach a large number of students, especially those from diverse backgrounds and those with financial or other constraints (K. Fischer, 2015a; Lipinski, 2014; Mullen, 2014; Pertusa-Seva & Stewart, 2000). In 2017–2018 only 1.9% of all US students participated in a study abroad experience (Open Doors, 2019). For that reason alone, pedagogical strategies for achieving outcomes associated with study abroad experiences—that can reach a greater number and diversity of students—should be a priority regardless of pandemics and geopolitical issues that constrain cross-border mobility (Lipinski, 2014).

With traditional study abroad programs at a standstill due to COVID-19, and a preexisting need to provide a much larger percentage and diversity of students with global engagement opportunities and skills, this is an important moment for educators to envision, implement, and evaluate new pedagogical methods that can deliver global engagement learning outcomes similar to traditional study abroad programs. As noted, new approaches must be able to thrive not only under current complexities and crisis conditions, but in ways that can engage a much larger proportion of students from all backgrounds.

As shown in Table 3, building upon the alignment between transformative learning theory and traditional study abroad best practices, virtual study abroad and domestic study away programs are two instructional candidates for broadening the reach of student engagement and moving forward in meeting the five actions proposed by the Declaration on University Global Engagement—even in the midst of complexity and crisis (Coyer et al., 2019; Declaration on University Global Engagement, n.d.; Schalkwyk et al., 2019).

Conclusion

It is tempting to view the COVID-19 pandemic, as it converges with a host of social, political, and cultural trends that directly impinge on the internationalization and global engagement efforts of higher-education institutions, as highly exceptional and out of the ordinary, something akin to a once-in-100-years flood. However, as with catastrophic floods that are occurring ever more regularly due to rapid climate change; the piling on of challenges to global engagement and internationalization activities is more likely to be the new norm, rather than the exception. Whether it be an inconvenient pandemic, or some other crisis of the moment, higher-education institutions may indeed continue to face unprecedented challenges to the attainment of increasingly important global engagement objectives.

The answer to these challenges will in part come from a nimble pedagogical philosophy that is able to keep one eye on desired outcomes while using the other to analyze theory-based strategies, grounded in evidence-based best practices, which can be applied in innovative ways, using new formats, to reach larger audiences while attaining enhanced outcomes. The road ahead will be bumpy, but the tools for success are in place.

Applying transformative learning theory and study abroad best practices to innovative virtual study abroad and domestic study away programs are but two examples of how this nimble pedagogical philosophy can be employed to keep the global engagement initiative alive and well in times of complexity and crisis.

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8.

CREATING ADAPTABLE COURSES: A COURSE DESIGN APPROACH THAT ACCOMMODATES FLEXIBLE DELIVERY

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In early 2020, educators and students around the world endured lapses in quality of educational experiences due to the disruption caused by COVID-19. In return for these lapses, students continued their programs of study within previously established timelines, and educators balanced helping students achieve learning objectives while keeping a manageable workload. Moving forward, students will expect educators and their institutions to deliver high-quality education when disruptions occur, like natural disasters, facilities emergencies, or supply chain disturbances. This expectation will extend to all modes of delivery. We assert that training educators to build adaptable courses that provide them and their students with flexibility allows future disturbances to be managed with reduced stress for all stakeholders, while maintaining the quality of the educational experience.

Preparing for disruption is a risk-management trade-off. Educators balance the risk of expending time and energy creating materials, processes, and structures that may ultimately not be used, with the risk of operating on a just-in-time basis, reworking those materials, processes, and structures with little advance warning. It is possible to create courses that can be delivered anywhere along the spectrum between fully online and fully face-to-face without designing multiple course versions. However, this approach is unfamiliar to many educators, at least partly due to skepticism regarding the quality of online learning and limited use of instructional design support staff (Jaschik & Lederman, 2019), combined with the lack of experience and professional development to keep up with the ever-changing landscape of pedagogical tools and standards (e.g., universal design for learning, accessibility standards, or third-party software platforms).

We present a training experience centered on designing courses that can adapt to multiple delivery modes. For faculty developers interested in hosting a similar program at their institution, we discuss the philosophy that led to our core principles, the implementation of our training, and lessons learned. For educators interested in making their courses more resilient, we present the core principles of our approach and examples illustrating each principle.

Philosophical Stance

Although adjusting to disturbances is often approached as slow shifts that accommodate institutional culture and common practices in the field (Kezar, 2018), we had an urgent need for course development that did not permit gradual and conservative modifications. In addition, we recognized the existence of microcultures within academic departments at our institution; for example, one department has a culture of autonomy in course development, whereas another department implements collaborative course development. Therefore, we adopted elements of political change theory (Kezar, 2018): creating a leadership team representing key academic departments, providing incentives for participants, realigning support office responsibilities and budgets, and facilitating communication and networking among allies. This approach allowed us to accomplish rapid change while acting in accordance with our institution's mission to "provide the world's best undergraduate science, engineering, and mathematics education in an environment of individual attention and support" (Rose-Hulman Institute of Technology, 2021). This mission is deeply significant to our community and is the reason most of our courses are normally delivered in small face-to-face sections; in this new context, providing individual attention and support means achieving student learning objectives regardless of the course delivery method.

Our work was informed by the concept of strategy:

> Strategy is a system of expedients; it is more than a mere scholarly discipline. It is the translation of knowledge to practical life, the improvement of the original leading thought in accordance with continually changing situations. It is the art of acting under the pressure of the most difficult conditions. (Helmuth von Moltke quoted in Hughes, 1995, p. 123)

Our strategy is represented in the core principles, or expedients, shared later in this chapter. In accordance with Moltke's translation of knowledge to practical life, we provided participants with research-informed, practical approaches to course design and delivery rather than information about pedagogical theory or intellectual discussions of scholarly work. We modeled expedience in continually changing situations by adjusting the resources provided and the program timeline as questions and requests emerged from participants.

We introduced and advocated for the concept of lean (originating in manufacturing, Krafcik, 1988; applied to higher education, Balzer et al., 2016), consistent with our identity as a STEM-centered institution. Lean calls for maximizing value while minimizing waste in any process or activity. In education settings, lean eliminates materials, activities, and assessments that are not aligned with course objectives. In the spirit of lean, we asked faculty to implement only the most critical standardizations across courses—those that would most help students.

Implementation

For faculty developers, we discuss how we designed the Creating Adaptable Courses (CAC) training to fit our institutional culture; educators may skip to the core principles section without loss of continuity. The program was launched as a self-paced course in our learning management system (LMS); we asked participants to complete it in one month during the summer of 2020. Responsibilities of the Learning & Technology staff (instructional designers, LMS coordinator, and video specialist) were adjusted to allow the development of the training experience. Porter and Graham (2015) identified three key positive influences for educator use of online learning tools: LMS infrastructure (including fast upload and download of materials), availability of technical support, and shared purpose of instructors and their institution for moving to online, blended, or hybrid learning. Using the LMS for this training helped demonstrate its capabilities to CAC participants. The personal attention given to participants by our Learning & Technology staff displayed our technical support capabilities. Finally, our shared purpose as educators emerged from our strong desire to plan for possible changes in delivery mode in the subsequent academic terms, thereby avoiding the urgency and confusion we experienced in the spring. By accounting for both our institutional culture and the positive influences recommended by Porter and Graham (2015), we created a program that resulted in broad adoption of our recommendations, described below.

Each module of the training followed the same general format: a statement of the objectives of that module, a sequential list of resources to review and activities to complete, a checklist of related tasks to be completed for the specific course(s) participants were developing, and a reflection opportunity. Discussions and networking took place in Microsoft Teams channels, in LMS discussion forums, and via email for individual feedback and support.

In keeping with our institutional mission to provide an environment of individual attention and support, we formed a group of peer mentors. These mentors were experienced in online teaching, had complementary areas of expertise and excellence, and belonged to academic departments serving many first-year students. The mentors reviewed and provided feedback on course plans, assisted with technical support, and offered emotional support. Because mentors had credibility in the microcultures of their academic departments, these mentors communicated between and within those microcultures. The political knowledge and skills of mentors proved critical in leveraging support for implementing this academic change project.

To ensure timely feedback to questions posted on the LMS discussion boards and the Microsoft Teams module channel, designated mentors acted as moderators for each module. The Teams channels led to abundant discussions. For example, the Teams channel set up to discuss asynchronous interactions with students included 37 separate posts with only 3 from the moderators, 83 moderator replies to posts, 105 replies from participants, and 165 reactions. Overall, more than 20% of participants engaged in this specific

discussion. Among the various forums, posts included questions, teaching ideas, affirmations, problems solved, and collaborations.

The reflection component at the end of each module was based on Gibbs's reflective cycle (Gibbs, 1988). Participants described what they did in their course because of the module and addressed if: (a) the module helped align their learning objectives with assessments and activities, (b) they agreed with or rejected principles of lean education in this module, (c) the module invoked feelings about being an educator or the course development process, or (d) the module shaped future course development plans. Moderators provided individual feedback to questions raised in the reflections.

Just over 70% of our full-time faculty accessed the CAC training, and the resources remain online and available for all Rose-Hulman instructors. The primary incentive for participation was the negative experience of switching to remote learning during the preceding spring and the possibility of a similar switch in the near-term future. Intrinsically motivated faculty with strong self-identification as excellent teachers but who were inexperienced with online learning opted into the program. Additional extrinsic motivation was provided in the form of supplemental pay; participants who completed all modules in the CAC training received a small stipend. A subset of participants continued as a cohort to develop courses for first-year students. These individuals received an additional stipend scaled by the credit hours of the course being developed and funded by an institutional grant supporting revision of the first-year experience. Participants received half of this additional stipend prior to the start of the academic year if the in-progress course demonstrated compliance with quality standards for accessibility, LMS navigation and use, universal design for learning, and regular instructor–student and student–student interactions. The other half of the stipend was disbursed upon completion of the course development and maintenance of the quality standards. Finally, mentors received a stipend for their roles in the CAC training.

The CAC training could be modified for other institutional contexts and cultures. For example, larger institutions could create disciplinary or cross-disciplinary discussion cohorts rather than opening discussions to the entire faculty. The cohorts could be formed based on individual instructors' schedules to facilitate cohort progression through the activities at a similar pace, creating shared accountability, and providing timely opportunity for discussions. Although our program was asynchronous, synchronous presentations could be incorporated (e.g., on instructor presence, a topic that generated much online discussion) for institutions with a culture of in-person faculty development. We included an optional module on laboratory experiences because our institution focuses on STEM—studio art, performance disciplines, culinary studies, and other disciplines that may appear low in resilience would be excellent candidates for supplemental modules as appropriate to an institution's programs. Selecting mentors, establishing incentives for participation, and handling the logistical aspects of such a project can be aligned with institutional culture.

Regardless of the institutional context, CAC training can strengthen the "teaching, yet still learning community" of educators (as stated by a tenured professor in engineering), with connections that bring to light critical questions and innovative solutions.

Core Principles

Four principles guided the Creating Adaptable Courses (CAC) training. These principles flowed from our philosophy: focusing on expedients, maximizing value while minimizing waste, providing individual attention and support, and creating or curating materials, processes, and structures (what Riggs & Linder, 2016, call "the architecture of engagement") that could be used in a variety of delivery methods. By applying the following principles, faculty can create courses resilient to disruption.

Make a Detailed Plan for What Matters Most

A resilient course has a plan for what students learn to do, how they practice doing those things, how their mastery will be assessed, and how the course operations will support learning. Educators determine what role they want to play in their students' learning and create a plan to use their time and expertise in that role as much as possible, thereby driving student engagement (Sawers et al., 2016). The work of creating a course plan helps faculty identify which elements of a course are resilient to changes in delivery mode and which elements require additional attention.

The concept of a well-defined course plan was established in the first module of the CAC training experience. Educators examined resources on backward design (creating objectives first, then assessments, then activities; Wiggins & McTighe, 2005), including several models of learning objectives, such as Bloom's taxonomy of the cognitive domain of learning (Krathwohl, 2002) and Fink's model of significant learning experiences (Fink, 2003). Educators selected a preferred model, thereby exercising their experience, expertise, and autonomy (Shadle et al., 2017), and developed a list of learning objectives that became the organizing structure for building their course plan. Over the remaining modules in the CAC training experience, educators enhanced their course plan by linking planned activities and assessments to these objectives, ensuring they could justify each activity and assessment. We encouraged educators to eliminate course elements that did not connect directly to the course objectives or did not work in various modes of delivery. These changes allowed educators to reclaim time and energy that was unlikely to translate to improved learning.

The lean course plans resulting from this work illustrated many approaches to increase course resilience. For example, an untenured professor in science included a variation of the problem-solving studio (Le Doux & Waller, 2016) in his course plan, in which students worked collaboratively in small groups to answer a series of questions and create a system model. This professor planned to spend his time moving among discussion groups to guide thinking, adjust difficulty per group, and answer questions. The students iteratively enhanced

their models and responses as they observed demonstrations at specific time points or learned new information from the instructor. This activity contributed to the resilience of the course because it could be accomplished in a face-to-face setting with a live demonstration or video, in a synchronous online environment with breakout rooms and on-demand delivery of resources (minding the individual groups' progress), or in an asynchronous online environment with discussion forums and a recorded demonstration. The resilient course plan allowed this educator to commit to the problem-solving studio experience and how it relates to learning, not to the delivery mode of the activity.

A resilient course plan highlights how the LMS and other institutionally supported resources help educators flex between modes of delivery while maintaining their most important role in learning. Seeking to promote self-regulated learning, a tenured professor in engineering added checkboxes next to activities and assignments within the LMS. When students completed an activity, they could check the corresponding box, creating a visual signal of their progress toward achieving the learning objectives. Self-monitoring of progress is an important part of self-regulated learning. An additional benefit to this practice was that instead of answering emails that asked what activities needed to be completed in the week, the professor engaged in more meaningful exchanges with students regarding the course content. In a different case, an untenured professor in science used study modules from third-party software (e.g., the Mastering resources from Pearson integrated with the LMS). This software provided students with immediate, consistent, and meaningful feedback on lower-level concepts, which allowed the professor to reduce his time spent grading information-recall questions, and increase his time providing students with rich feedback on other, higher-level assignments. Because the study modules were deployed to the students within the LMS and could be accessed regardless of the mode of delivery of the course, this enhanced the resilience of the course and allowed the professor to maintain his most important role in students' learning. In both examples, the course plan used the capabilities of the LMS to support achievement of learning objectives.

A detailed course plan allows educators to prioritize their role in learning. The plan aligns objectives, activities, and assessments, revealing where the course is lean and resilient and provides a map of the course that educators can share with colleagues and students. Resilient courses have a detailed course plan that allows educators to be agile.

Communicate Strategically

Communication is information exchange. In the context of teaching, communication involves teacher-initiated exchanges like sending a reminder email or sharing a resource, and student-initiated exchanges like asking a question, submitting an assignment, or consulting a peer for help. Using this broad understanding of communication, all course materials constitute information exchange. When educators review every course element through the lens of information exchange combined with their self-determined most important role

in learning, they can review communication needs and options and align them to a specific communication approach. When educators have options for communication, courses become more resilient.

The CAC training differentiated synchronous from asynchronous communication and prompted educators to determine if colocated face-to-face communication was necessary for achieving learning objectives. The training emphasized that synchronous communication is a significant investment, requiring students and educators to gather in the same physical or virtual space simultaneously, and therefore should be reserved for activities that pay the highest returns. We suggested alternatives for effective communication, including open educational resources, discussion forums, virtual poster sessions, and more. Educators recognized that materials appropriate for an online course can also be used in a face-to-face or hybrid course, whether as central learning tools, supplemental materials, or even to bridge a short-term absence. In addition, they learned strategies for efficient and effective one-way or push communications, like regular video updates or text-based course announcements. Part of this module centered on best practices for self-created videos, but participants also shared sources of existing content, including simulations and demonstrations, publisher-provided videos like process animations, and educational material archived on YouTube (e.g., clips of BBC's Blue Planet series or debates in the House of Commons of the United Kingdom). By deliberately selecting communication strategies in the context of the course learning objectives, educators added resilience to their courses.

Using the lens of communication allows educators to revisit how they spend their preparation time and class time. For example, a tenured professor in mathematics typically used lectures to communicate process knowledge (as many educators do; Stains et al., 2018). However, he recognized this same content was covered in an online textbook, existing online videos from the software developers, and short programming vignettes written by experts in the field. He redesigned his course to utilize this content instead of creating his own new video lectures. He then developed interactive programming tutorials, which supplemented and augmented the curated content. By replacing his lectures with a combination of high-quality existing content and new programming tutorials, this professor reduced the amount of lecture development time and required synchronous communication, and thus enhanced the resilience of his course.

A course plan including strategic communication minimizes stress induced by switching between face-to-face and remote settings. For example, a tenured professor in mathematics included a computer-aided problem-solving activity in her course and planned two methods of implementing that activity. In a face-to-face setting, students would turn to one another informally to debug their solutions together, thereby exchanging information and building community. In a remote setting, the professor planned to use the formal pair programming approach (Wells, 1999) using a video conferencing platform. Students would work in pairs sharing their screen with one another to correct syntax errors; each pair would work in separate channels within the platform. The professor would move between channels to check on student progress and answer questions. By identifying the strategic communication need—students debugging code in pairs and in real

time, with the professor checking in—and preparing implementation plans for both face-to-face and remote settings, the professor minimized stress induced by the possibility of needing to shift the delivery method of her course.

Communication can itself be a learning objective. For example, in creating his course plan, an untenured professor in science recognized that some lab sessions involved trivial data collection but also required negotiation on study design. As a result, he distributed the research question, background, and sample data as a push communication, removing the focus of the activity from data collection. Students familiarized themselves with the tools and the objective of the lab independently. They synchronously reflected on study designs and their alignment with the theoretical model being studied, and following this discussion, analyzed the provided data. Because this approach focuses on communication as the key learning objective, it removes the need for students' physical presence in the laboratory. The communication itself can be made platform-neutral and can be accomplished regardless of the mode of delivery for the course, without sacrificing the critical learning objective.

Communication involves significant cognitive effort on the part of all participants. Having the end goal in mind for every communication helps educators determine the appropriate methods of communication. Integrating strategic communication methods within the course plan allows for courses to adjust to significant disruptions.

Schedule Regular Interactions With and Between Students

Rich engagement between educators and students and among students is critical to student achievement of course objectives, regardless of the mode of delivery. By planning when and for what reasons different types of interactions occur (e.g., information delivery vs. performance feedback), educators capitalize on the course environment and effectively use their interaction time. Students benefit from interactions in terms of elevated focus and clarity on activities, assessments, and the learning objectives behind them (Jaggers & Xu, 2016; Bernard et al., 2009). In addition, educators who plan "regular and substantive interaction between the students and the instructor" and include instructor-initiated communication meet the United States Department of Education requirements for distance education and maintenance of federal financial aid for students enrolled in the course (Online Learning Consortium, 2019).

In the CAC training, the concept of interaction centered on the community of inquiry model (Garrison et al., 1999), with social and cognitive presence of the instructor and students as the key considerations. Participants learned that cognitive presence is the unique meaning-making of individual community members, accomplished through critical discourse. The participants compared that definition with social presence; that is, representing oneself as an authentic person, including behaviors like expressing emotion, using names and inclusive pronouns, and referring to others' contributions to the class. During the training,

we provided educators with resources on strategies to demonstrate presence regardless of course delivery mode. They participated in discussion forums on presence, and as a result they learned about the concepts of presence and practiced presence as part of the training. For example, one forum addressed ways to accomplish everyday interactions in different delivery modes and included 15 unique forms of interaction, from peer code debugging to group map reading to using small whiteboards to facilitate sharing.

These examples addressed both educator–student interactions and student–student interactions. One point of emphasis was low-bandwidth teaching, both in the literal sense of internet bandwidth availability and mental bandwidth for both students and educators (Stanford, 2020). We encouraged educators to reserve high-bandwidth activities or synchronous experiences for objectives that could not be met any other way. Educators updated their course plans with how and when they would create instructor presence. Educators' courses became more resilient by incorporating multiple options for interactions with and among students.

Educators can plan interactions to support learning in multiple ways. Seeking to include peer-to-peer learning, foster personal choice in learning, and application of course topics to current events, a tenured professor in science used an activity she called 'science minute': students submitted news stories that connected to course learning objectives, and randomly selected students explained their items to peers. In a face-to-face setting, the professor used handwritten papers and a verbal summary; in an online setting, she used the questionnaire function of the LMS and required students to submit a typed or recorded summary. These short interactions allowed students to feature their personalities and interests. With an interaction that was easy to accomplish in any setting, this professor supported learning in multiple ways and increased the resilience of her course.

Assessment is a critical teaching interaction, and its timeliness is a required component of lean because assessments for which feedback is delayed or not provided may not contribute to fulfilling learning objectives. Seeking to highlight and resolve conceptual fallacies by his students via timely feedback, an untenured professor in science implemented weekly quizzes, with grading automated by the LMS for immediate performance assessment. The professor then identified commonly missed concepts from the analytics provided by the LMS and addressed those misconceptions during the following class. His course plan included intentional choices about regular and frequent interactions with students and minimizing the time between their performance of learning objectives and receiving feedback, therefore aligning with lean principles. Furthermore, given that the assessment was tied to the LMS, the post-quiz feedback interaction could take place in class, synchronously via Teams, or via recorded video that could be reviewed asynchronously, adding to the resilience of this course.

Student–student interaction is often where subtleties in interpretation are debated and resolved. In other words, the informal and less-stressful nature of student–student interactions allows augmented understanding of fundamental concepts, the precision of disciplinary language, applicability of theories to practice, the boundaries of a concept or theoretical system, and where supposed objectivity ends and

subjectivity begins. Educators can make these interactions part of a resilient course, increasing equity, learning, and community identity. An example of capitalizing on student–student interactions is provided by a tenured professor in humanities who found value in having students evaluate disciplinary writing. His course plan included guiding students through a few examples as a class, then having students practice similar work in small groups to learn, for example, how changing the voice from passive to active reveals more information and how to include a quotation without disrupting the flow of a document. The groups captured their observations in a collaborative document, thereby building an answer key as a class, and individual students reported group findings to the class. The rich student–student interactions designed by this professor therefore helped address higher-order learning objectives.

Educator and learner presence, accomplished through interaction with each other and with content, improves student performance (Bernard et al., 2009). Scheduling interactions with students and among students as part of the course plan ensures that these interactions contribute to learning while being independent of the mode of delivery.

Embrace Alternative Assessments

Assessment is integral to learning, providing feedback to students regarding their progress toward achieving learning objectives. Assessment occupies significant cognitive space and requires significant time. Students often focus on assessments in terms of course grades rather than feedback, and educators often dread the burdens of grading and policing misconduct. Although traditional face-to-face or synchronous timed exams are high in expedience, they are low in resilience (e.g., a student might be located in a time zone that renders a synchronous exam inequitable—3pm in New York City is 3am in Beijing). Alternative assessments support learning without the challenges associated with traditional exams (Gozuyesil & Tanriseven, 2017).

The CAC training encouraged educators to think creatively about assessment; we asked them to escape the tyranny of the traditional timed, synchronous assessment. With well-crafted learning objectives, educators determined what they wanted to test (or have students demonstrate they can do). Then, they selected assessments that reflected that intent (e.g., Parmer, 2020; Suskie, 2009). Educators explored the differences between low-stakes and high-stakes assessment schemes and learned that low-stakes approaches are more consistent with academic integrity (Lang, 2013; Darby, 2020). The subsequent discussion addressed topics like rubrics, lockdown browsers, code comparison tools, assessing language translations, and pacing of assessments. As assessments were planned, educators backfilled their course plan with activities (including interactions) and communication strategies. Having all these elements in the course plan allowed educators to see a broader context for how students would achieve the learning objectives. By reserving timed, synchronous assessments for when no other assessment would serve, and incorporating alternative assessments elsewhere, educators increased the resilience of their courses.

The specifications grading assessment model (Nilson, 2014) caught the attention of several educators via a short reading and example syllabi. This model relies on specifications that establish expectations for passing work, and grades are assigned based on the accumulation of passes, meaning meeting all specifications. Embracing specification-based assessment, two tenured professors in science adopted a weekly essay structure they called the "ongoing midterm exam" for their upper-level elective courses. In each case, an essay prompt was posted weekly, focusing on the explication of a concept via taking a stand on a debated issue in the specific field. Specifications included: The essay (a) takes a position; (b) supports arguments with data or logic; (c) identifies constraints, limitations, or alternate perspectives; (d) demonstrates Bloom's taxonomy levels of analysis, synthesis, or evaluation; and (e) incorporates the primary or secondary literature. Students consulted all available resources in constructing their submissions. The open-ended nature of this assessment and its focus on constructing an argument increased time on task and reduced the likelihood of academic misconduct. Because this specification-based assessment can be accomplished via multiple platforms and is asynchronous, it enhanced the resiliency of the course.

Many educators' course plans included assessments derived from high-impact practices (Kuh, 2008), such as in the case of a term-long project being assigned in place of a traditional final exam by an untenured professor of mathematics. Students used a complex data set to address a research question, such as predicting future sales for Walmart using nationwide historical sales data. The project was comprised of five stages; students received feedback at each stage and compiled the various stages into a complete report. This assessment was implemented through the LMS, increasing the resilience of the course because the LMS could be used for either face-to-face or remote course delivery.

Backward design calls for establishing assessments and the performances of learning prior to designing learning experiences and activities. Many educators discovered that assessments can themselves be part of the learning experience (e.g., two-stage exams; Knierim et al., 2015), and further, allow students' ingenuity, creativity, and resourcefulness to emerge. Overall, adopting alternative assessments results in a more resilient course.

These core principles and the work associated with implementing them produce a resilient course that maintains its learning trajectory and teaching strategies even when a disruption occurs. Keeping these four core principles in the forefront during course design and implementation allows educators to fulfill their most important role in learning, however, they define that role.

Benefits and Challenges

We gauged the benefits and challenges of the CAC training via user comments, garnered from over 100 participants (all quotes used with permission). When asked to reflect on their experiences from the course, users highlighted significant benefits and challenges. One benefit was the value of developing the course plan,

consistent with the core principle of making a detailed plan using backward design. Multiple participants commented on the value of this design method for future teaching efforts. In contrast, some participants noted the novelty (to them) of this design approach and the time investment it requires. Nevertheless, most participants expressed that deliberate course planning was worth the undertaking.

> It is very refreshing to have time to think intentionally about course development. Very few terms offer the time and space required to rethink a course in its entirety. I enjoy using the backward design approach to think carefully about course and module learning objectives, and then to align activities and assessments with these objectives.(tenured in science)

> I am overwhelmed by the amount of work and time I had to spend to finish Session 1 [on course design], but at the same time I understand that it is the foundation of the course development process and it is totally worth it to use all the time it takes. (untenured in science)

Our teaching and learning center and our learning and technology office have advocated for intentional course design and planning for years, and the pandemic experience highlighted to many educators how their jobs were made easier through such work. We anticipate that educators that were learning about and implementing both backward design and intentional course design for the first time will have long-term individual and institutional benefits.

Participants noted the value added to their courses from the process of ruthlessly rethinking which activities and assessments are appropriate for the stated learning objectives. This outcome aligned with backward design, the lean philosophy approach, and our emphasis on educators identifying their most important role in learning. Some professors considered alternatives to activities and assessments but decided not to change them. In situations where multiple colleagues worked on the same course, they discussed and shared resources, ideas, problems, and solutions, thereby improving efficiency and standardization. In general, participants expressed that putting every course aspect under the microscope—from the development of new activities (e.g., interactive programming tutorials), to adoption of alternative assessments (e.g., course portfolios), and integration of novel assessment models (e.g., specifications grading)—was a valuable experience.

> I think mapping the assessments to objectives and then reflecting on how many assessments I really needed really helped a lot because it helped me take pressure off of the higher stakes exams which seem to be where most of my issues with students being less than academically pure reside. (tenured in science)

> The objective driven approach and the alternative assessment has got me reconsidering everything about the way I approach the class. (tenured in engineering)

We were especially heartened by benefits identified by experienced colleagues; as one tenured professor in engineering noted, "we will all be better teachers after this." The exercise of determining how every course element fits together and advances the course objectives brought lean to the forefront and showed educators where they had opportunities for flexibility.

Participants also noted the positive experience of interacting with our LMS in the role of students and being offered an (online) environment of individual attention and support. Most participants appreciated examining the possibilities of the LMS and incorporating those possibilities into their courses.

> I am glad that we are taking this class the way that students will take courses. (tenured in engineering)

> I am excited to have a course where the basic content is delivered via video and asynchronously. My role will change to being less of a content deliverer to more of a manager, keeping track of the progress of students, following up with students falling behind, making sure expectations are clearly presented, keeping the course fresh and engaging, and fostering student-student contact. (tenured in mathematics)

Engagement with the training and LMS tools led to a better understanding of the students' experience and how the LMS tools support teaching goals. Educators expanded their LMS capabilities, and therefore increased ways in which they could create high-quality learning experiences.

Participants identified the high volume and rapid pace of online discussions as a challenge. At least one asynchronous discussion occurred during each of the six CAC training modules. One exchange, a sequence of more than 30 messages about learning objectives, involved nine tenured professors and more than 5,000 words in less than 24 hours. The enthusiasm of participants produced voluminous and often close-to-real-time discussion threads ranging from technical process topics ("How do I do X?"), to best practices ("I do X this way, is there a better way?"), to philosophical challenges about the expedients presented and theories referenced.

> I find the forum simply overwhelming. What we have is vastly superior to students writing terse comments that are repetitive. I don't feel like I will ever have time to read all of the comments. (tenured in engineering)

Fortunately, these discussions were respectful, substantive, and sometimes eye-opening. Using names triggered an alert for the individuals mentioned and personalized the conversation, so we were reminded that we were interacting with a colleague, not a chatbot or an anonymous troll. Key phrases like "I appreciate your replies" and "I guess I see this a little differently, though there's plenty of overlap…" modeled acknowledging different perspectives, inquiring to learn more, and affirming positive intent behind comments and challenges. The discussions were a significant source of engagement among participants and with the mentors but overwhelmed some participants.

Some participants resisted revisiting every component of their existing courses and confirming alignment due to workload and a desire to produce the best possible learning experiences. They expressed anxiety and frustration about this aspect of the CAC training. Other participants invested a large amount of time seeking perfect equivalents to nonresilient course components when a good-but-not-perfect resilient replacement would have allowed progress on their course development.

> Seriously working through objectives for the course [then] modules [then] individual assignments, activities & lectures is not a quick task for me at all. I've barely scratched the surface after working for a long time today. (untenured in mathematics)

> This is daunting! I'm just old enough that I can identify with the frustrations of some other senior-ish faculty who might be sensitive to their usual practices seeming a little bit outmoded. (tenured in humanities)

We reminded participants that they might not rebuild in two months a course crafted over ten years; instead, we encouraged them to think of both the short- and long-term benefits of creating a more resilient course and refining it in the future. Our message was that any shift toward resilience and away from fragility, occurring at any pace, was beneficial.

Mentors and Learning & Technology staff identified the rapid pace and volume of discussions as an implementation challenge. Two mentors or support staff were intended to be primary moderators for each module, checking on the discussions once every 48 hours to respond to open questions or comments and affirm or provoke more discussion as needed. However, because mentors and support staff wanted to provide personal, direct, and timely feedback, they responded to posts multiple times per day. This outcome occurred despite each of them being experienced with online education and pacing instructor support.

> After working 10 hours straight yesterday and then doing my best to not feel the pressure to answer emails/posts through the evening and early morning, I am wondering if we should have posted a communication plan on our behalf. Is it too late to do so? (support staff member)

> You need to spend time with your family and the Teams ding is distracting. Please give yourself a break (and feel no guilt). You are always super-responsive to everyone but we should not expect you to be there whenever we have a question. (mentor)

Even though peer support within this group helped with setting professional boundaries, self-applied pressure to respond quickly to posts and questions remained until the CAC training ended.

A second challenge for mentors and support staff was the uneven adoption of core principles across department microcultures, especially relating to the courses for first-year students. These principles were readily integrated into microcultures that had established work processes that included making agreements by

consensus. In departments for which collaborative teamwork and compromise were not the norm, the mentors increased acceptance of the core principles by that department's faculty using negotiation or mediation. This work relied on support from department heads in three ways. First, department heads affirmed the program's goals and methods repeatedly and often, starting from the beginning of the endeavor. Second, they adjusted teaching schedules to allow interested educators to opt into participating, and vice versa. Finally, they held difficult and direct conversations with educators whose courses did not meet the CAC quality standards. These combined efforts were successful: Of the 57 faculty members who committed to developing courses for first-year students that met the CAC standards, 52 have done so.

A continuing challenge of the CAC training is the high informational value of the discussions. Copious useful information was shared and debated; however, reading through the threads from beginning to end is inefficient. This inefficiency limits the long-term utility of these discussions.

> When I have completed online courses in the past and see forums or chats with lots of users and threads, I won't even bother to look at them, because it seems like it will take too much time to search for the information I want. (untenured in engineering)

Maintaining these discussions within Teams allows educators to search for key terms and read specific posts but is an unwieldy process at best. We do not currently have a strategy for archiving these discussions and repurposing the information they contain.

Conclusion

The core principles comprise a system of expedients that can be adopted by educators to fit their personal philosophies of education and their institutional cultures. Educators who implement an adaptable, resilient course add value to their departments, programs, and students. Institutions that adopt a similar training program provide their faculty with direction, agency, and productive coping strategies in times of crisis. Despite our fervent hopes, we cannot control the outside world—the pandemics, the natural disasters, the incidents and accidents—that affect how we deliver our courses. But we can control how we act under Moltke's "pressure of the most difficult conditions." An adaptable course increases our options for that response and helps us be prepared for whatever comes.

Acknowledgments

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PRACTICE AND REFLECTION

A NEW NORMAL IN INCLUSIVE, USABLE ONLINE LEARNING EXPERIENCES

Christopher Phillips and Jared S. Colton

The most obvious consequence of the COVID-19 pandemic in higher education has been more students accessing their classes remotely without having the technology and other resources readily available on their local campuses. Students from underrepresented groups have been disproportionately affected as a result of COVID-19, particularly students of color (Alvarez, 2020) and students with disabilities (Hill, 2020; National Center, 2020). This neglect of underrepresented groups in higher education is not unique to the pandemic, of course, and sadly is nothing new to higher education, but COVID-19 has made this problem more apparent.

The stress of dealing with the unexpected circumstances of COVID-19 led to an increase in mental health challenges (Anderson, 2020) and in providing resources to remote learners. For example, when an in-person digital media course taught by Colton was forced to go completely online, students disclosed previously undisclosed disabilities while sharing frustration that they could no longer rely on in-class instruction, where there were "more natural" opportunities to clarify expectations. In our respective roles, we each heard from students during the pandemic who had less access to high-speed internet and multiple technologies. Many were reliant on mobile devices and limited bandwidth.

When many of your students stop participating as a result of your class going online in the middle of the semester, you tend to notice. These are just a few of the challenges that became front and center as a result of the COVID-19 crisis. Thankfully, many educators are responding to the realities of distance and distraction during this unusual time by disrupting old habits to improve online aspects of their teaching, including making their classes more accessible and usable to underrepresented groups. We believe this crisis provides opportunities to create a new normal of inclusive content delivery. For this chapter, then, we focus specifically on the needs of students with disabilities and some specific inclusive practices that you can bring into your classroom relatively quickly that will benefit your students with and without disabilities.

As you will learn from this chapter, we are not saying that providing inclusive content is as easy as checking a box or adding a line to your syllabus. Providing usable and accessible content through online learning-management systems (LMS) such as Canvas and Blackboard is a challenge and requires a shift in perspective and a change of some habits (Coombs, 2010; Walters, 2010; Oswal & Meloncon, 2014; Kent, 2015). Fully

understanding the range of accessibility problems that students encounter can be overwhelming, but there are starting points for a way forward. One of the best ways to improve your accessibility is through universal design or, even better, inclusive design. In brief, universal design is a philosophy that argues that if you design content (e.g., a syllabus, an assignment, a lecture) for students with disabilities, you improve the content not only for those students but for all students (CAST, 2020). Universal design posits that there are practices that can make content more accessible and usable to students with disabilities, while also improving the experience of students without disabilities. However, rather than make the claim that one size can fit all, inclusive design means designing with the margins in mind and being willing to design in "a diversity of ways to participate [to] create a sense of belonging for everyone" (Holmes, 2018; see also May, 2018).

Inclusive design is different from traditional accessibility efforts because the former is proactive and the latter reactive. Most higher-education disability resource centers, often listed as "disability center" or "accessibility office," work with instructors to provide accommodations for a student after that student has requested an accommodation as a result of a documented disability. In most cases, this means the instructor must change an element of their course (e.g., giving the student extended time on quizzes) or that the disability resource center must provide accessible versions of reading materials (e.g., large-print texts).

While this accommodation process is important and necessary, it is clearly a reactive process in which action is taken after the disability is disclosed. In this process, students who do not disclose disabilities—who would benefit from more accessible and usable course content—might still struggle in the class. Instructors with inclusive design philosophies take a more proactive approach, meaning that they might incorporate practices of accessibility and usability in their everyday teaching, including the following: making sure all videos used in the class have closed captions, using larger and more readable fonts in their materials, and providing clear headings and hierarchies of information in their syllabi and assignments. Teachers might ask, "Why shouldn't I just wait until I get an accommodation request from my disability resource center?" But again, disability resource centers and the accommodation process are important, and some students will require official accommodations no matter what, but adhering to an inclusive design philosophy proactively anticipates that no student has the exact same experience as another. An instructor with an inclusive design approach will therefore proactively provide content that is more usable and accessible to students with and without disabilities.

The goal of this chapter is to help you start the process of making inclusive course design habitual, making it a new normal in your pedagogy so that you might be more resilient to the problems such as the COVID crisis but also be more inclusive in general. We will discuss two specific accessibility practices you can use to provide a more robust and inclusive experience for your students: making sure instructional videos are captioned and converting PDF files to HTML web pages. These practices not only create more accessible learning environments for students with disabilities, but they are more usable to students without disabilities, as well. If these practices can become a new normal, the new pedagogical standard, teachers will be more confident

that their materials will be resilient to distance, disruption, and distraction, whether stemming from individual or institutional challenges.

It may be important to note that we are not going to discuss accessibility law, though lawsuits continue to occur when higher-education institutions fail to provide accessible accommodations for students with disabilities. Rather, our hope is to provide you with an ethical imperative to become a more inclusive course designer. Also, while we do provide a general guide to get you started in inclusive course design, this is not a how-to manual. Technology will continue to change, so step-by-step instructions could become outdated quickly; instead, we hope to provide you with some basic practices and strategies that will help you for years to come.

Accessibility, Usability, and Inclusive Design

One of the challenges of this work is understanding some basic terms. Before we share practices to get you started on being a more accessible and inclusive instructor, it's important to have a shared sense of definitions. So, first we will explain how we use the terms *accessibility*, *usability*, and *inclusive design*. Realize that these terms are continually contested and redefined as new contexts challenge past meanings, but we hope to define and explain these terms generally enough that they will make sense in multiple contexts and with multiple audiences, even if defined in slightly different ways.

Accessibility

When we discuss accessibility, we mean the quality of content that enables people with disabilities to access that content across multiple contexts. There are many examples of students with disabilities accessing content from different technological contexts: a blind student using text-to-speech technology to read aloud questions in an exam; a Deaf or hard of hearing (HOH) learner watching an instructional video using closed captions; or a student with dyslexia being given a reading assignment in a more readable, larger font. Accessibility also means the ability to retrieve content via preferred technologies. A preferred technology might include a laptop, a mobile phone, or a braille reader.

Usability

Usability has been defined in dozens of ways, but for our purposes, we combine Nielsen's (2012) definition, "A quality attribute that assesses how easy user interfaces are to use," and a definition from the International Standards Organization (ISO), "The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use," (International Organization for Standardization, 2018). In other words, usability is how easy an interface is to use and how well it enables users to accomplish their goals. Just like accessibility, there are many examples of usability in

higher education: a syllabus that uses headings to organize content in a linear, succinct manner to help students quickly find the information they need; a teacher providing content in HTML that can be easily read on mobile devices instead of a hard-to-read, photocopied PDF with handwritten notes all over it; or a course introduction to a technical course that shares ideas using plain language, devoid of jargon, making it easy for students to understand, regardless of their academic background.

Inclusive Design

In this chapter we are bringing together the concepts of accessibility and usability into a model of resilient and disruptive pedagogy that is informed by a model of inclusive design. We define inclusive design as design that considers the full range of human experience and focuses on the needs of users on the margins to help provide a better learning experience for everyone. Inclusive design acknowledges the essential nature of accessibility and proactively seeks to provide user-friendly experiences for people with and without disabilities. One way to think about this is that we never talk about accessibility without usability; likewise we shouldn't usability without accessibility. Inclusive design does not claim to be universal (which may very well be impossible), but adhering to its tenets means paying attention to who needs to be included in the context of the content being used and ensuring everyone who wants to have a seat at the table will have one.

A helpful way to consider the relationship of accessibility and usability to inclusive design is to consider curb cuts, the small ramps built into the curbs of sidewalks that provide an easy transition from the sidewalk to the street. Before curb cuts were mandated by federal disability legislation, individuals who used wheelchairs had to find creative solutions to get from the street onto a sidewalk and vice versa. Disability advocates' efforts to mandate curb cuts were initially met with complaints from businesses and municipalities that were required to bear the expense of this change for what (to them) seemed like a very small disability population. However, it soon became clear that curb cuts provided advantages to many different audiences beyond wheelchair users. Curb cuts could be utilized by bicyclists, skateboarders, a person using a dolly, and parents pushing a stroller. In short, curb cuts proved useful to almost everyone at one time or another—a value that has exceeded the initial intent of accessibility for persons with disabilities. The spirit of inclusive design is encapsulated in curb cuts that were designed to include one marginalized group but benefitted many others.

Today we continue to see the influence of inclusive design such as in architecture and city planning, where sidewalks with curb cuts are replaced entirely by ramps. Below are some inclusive design practices that were originally designed for people with disabilities but have improved design as a whole:

- accessible drinking fountains that can be used by children or shorter adults;

- automatic door openers for people with mobility challenges that are useful for anyone carrying something heavy;

- closed captions (discussed below) for Deaf or HOH users that also benefit second-language learners;

- and adequate color contrast for color-blind users that also helps any user read content on their phone in the glare of the sun.

Like these examples, we will show two specific ways accessibility considerations have broad, inclusive impacts to make content more usable for students in higher education. Like curb cuts, we hope that these inclusive design practices will become a new normal, benefiting students with and without disabilities alike.

Closed Captions for Instructional Videos

If you plan to use a video in your class, that video should be closed-captioned. Closed captions—often just referred to as "captions"— provide a textual representation of audio information in a video (Figure 1). Saying you need to caption your videos is not a legal claim, though there may be legal requirement for doing so. There may be legal requirements to caption in some situations, but our argument is that closed captions provide instructional value and a better learning experience for all students. Instructors use videos to deliver course content more and more, and the disruptions caused by COVID-19 have only accelerated the move to online videos. While videos can be a very effective way to deliver online instruction, those without captions exclude students who are Deaf or HOH from accessing essential instructional content. Getting closed captions on your video is doable, and there are resources available to help do this that will not drain your time. This section is meant to explain the benefits of closed captions and how to make sure the videos in your class are more inclusive.
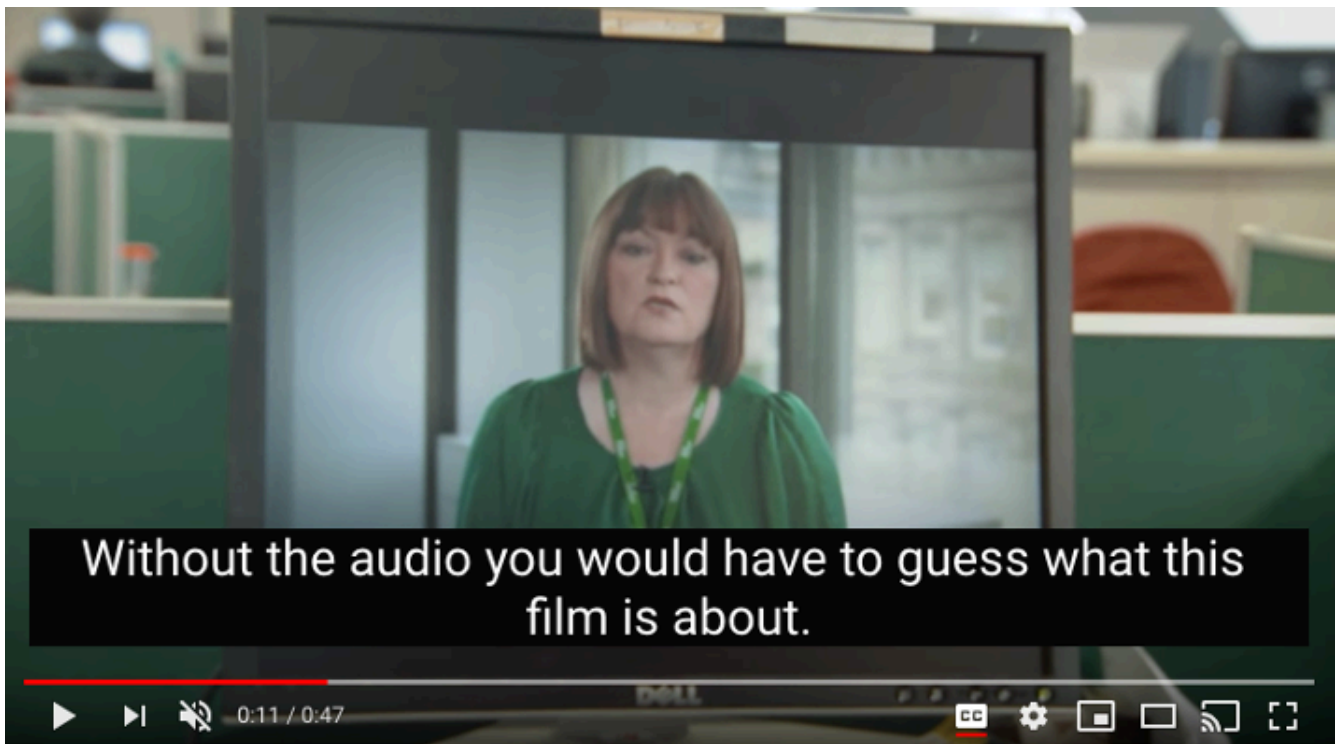
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Figure 1 This screenshot of a video demonstrates accurate closed captions that display when you click the CC button (W3C Web Accessibility Initiative, 2016).

Benefits of Closed Captions

First, let's make sure that the many benefits of closed captions are understood. It is important to note that closed captions are not just for Deaf and HOH students. Captions provide significant benefits to a variety of learners in different contexts:

- Learners for whom English is not their first language.

- Learners who access the video in noisy or sound-sensitive environments.

- Learners who comprehend material better when text is available.

In other words, captions provide both accessibility and usability, a great example of inclusive design. When we proactively provide captions on all essential video content, it not only ensures that students with disabilities are included but provides a more robust experience for any student who might wish to access the video from a variety of contexts, such as those listed above.

Getting Your Videos Captioned

As noted above, closed captions are text on a video that can be turned on or off ("closed") depending on the viewer's preference. Closed captions are different from open or burned-in captions, the latter of which are always visible on the screen, regardless of the viewer's preference.

Captions are now commonplace on media platforms such as broadcast TV and Netflix, which students are using on a daily basis. Social media sites such as YouTube and Facebook are working hard to support users in adding closed captions to videos uploaded by users, even though they may not be required to do so by law (yet). Captions are becoming a larger part of cultural consciousness—you may have even run into a blogger or YouTube streamer who has critiqued poor closed captions, or "craptions." Craptions refer to captions that are created automatically from machine learning tools that use speech-to-text algorithms (automatic captions) to approximate what is being said in the video. On YouTube, for example, a video may show that it has captions, but when you click on the closed captions (CC) button (Figure 2), it will display "English – Auto Generated," which indicates the captions were created by a machine rather than a human. While automatic captions will get better in the future, these lower-quality captions are currently not considered an adequate replacement for professional, human-reviewed captions.

Figure 2 This is a screenshot of a video from YouTube in which YouTube creators Rhett and Link use the automatic captions and recreate videos using them (Rhett & Link, 2011).

Finding Videos That Are Already Captioned

Given the increasingly widespread use of captions, it is now easier than ever to identify videos that are already captioned, which you can use in your online course. While many of the videos you find from third-party sources may already be captioned, it will be your responsibility to make sure that the videos you share with students have quality captions. Checking for captions is generally as easy as looking for a CC button on the video player and clicking it to make sure those captions show up correctly. If you're looking for a video or a captioned version of a video you already use, there are two primary ways to find videos that are already captioned:

1. Many videos come from YouTube, where there is an easy-to-use filter that allows you to quickly search for videos that are already captioned (Figure 3).
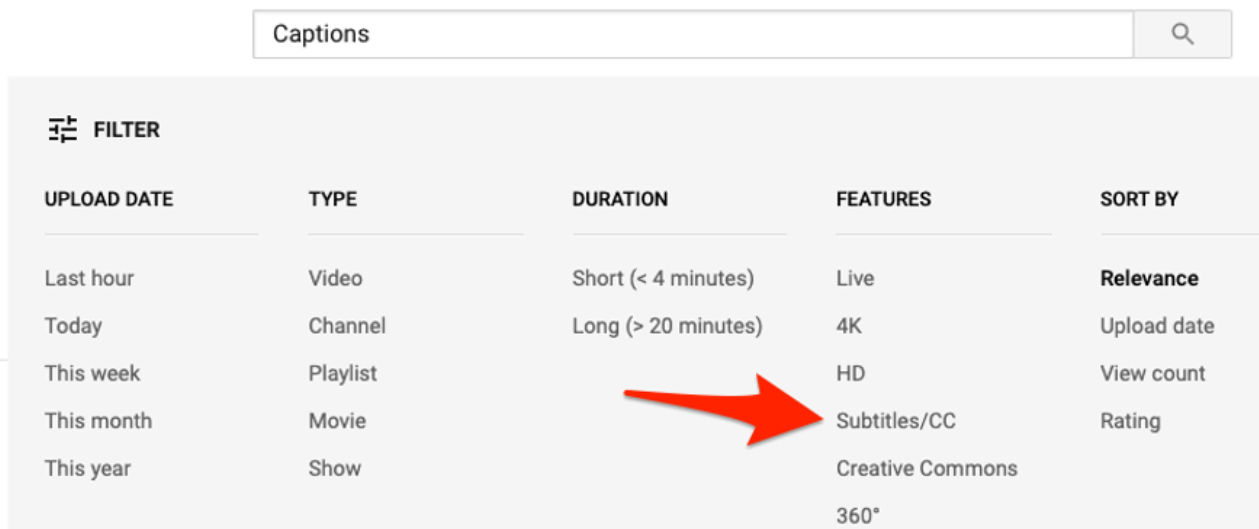
Figure 3 This screenshot of the YouTube filter shows the ability to view only videos with professional closed captions (YouTube).

2. Most videos from educational publishers or movie studios are already captioned or have a caption file available upon request.

Captioning Videos That Are Not Already Captioned

Even as captions are becoming more available in videos, you may come across videos that are not captioned, or you may want to create your own video content that does not include captions. In these situations, you can readily find help from other sources, or, if you're brave and willing, you can create captions yourself.

Textbook Publisher Request

For those of you who use textbooks, you may have access to instructional videos from the same educational publisher. If those videos are not captioned, send an email to your publisher. Most will be willing to provide you with captioned versions. Even if they have not already captioned the videos, most publishers now have resources to quickly caption videos on request, at no cost to you.

Crowdsourcing

Another resource for getting captioned videos is the crowdsource community Amara, in which people share captions they have created so that others can take advantage of those captions without having to duplicate work. If you find a YouTube video you would like to use but it does not have captions, you can go to Amara.org, click "Search Videos," and check to see if someone else has already captioned the video by entering the URL of the YouTube video. If the captioned video is available, you can embed the Amara video in your course or share the link with your students to view.

Campus Disability Centers

On most campuses there is an individual or group who supports captioning for students who are Deaf or HOH. As noted above, your campus disability center may be able to help you caption your videos. Send them an email or set up an appointment to talk with them. Most will be excited that you are interested in making your content more accessible.

Institutional Marketing/Media

If the above options are not available to you, many on-campus media or marketing teams that produce videos for your institution also have captioning expertise. You can reach out to those teams to ask about getting videos professionally captioned using third-party companies or internal institutional resources.

Caption Your Own Videos

If you have explored the above options and are not having any luck, there are also easy-to-use tools to help you caption your own videos. Most of these tools work by providing automatic captions, then all you have to do is go through the video to review and correct the inevitable spelling and punctuation errors. Assigning this task to your teaching assistants can also be a great opportunity for teaching assistants to become more familiar with your video content. Some instructors have even asked students to caption their course videos as a way for the students to engage more deeply with the material and provide a service to future students who will watch

the video later. While it is helpful to be aware of best practices when creating your own captions, you do not need to be an expert.

Most video-creation tools and platforms provide a built-in caption editor, and many even include a way to automatically create captions—which again will need to be reviewed and edited. For example, free media-editing software such as YouTube Studio or commercial products such as Camtasia can generate automatic captions and provide you with a user-friendly editor you can use to make corrections. The great thing about adding captions yourself in a video editor is that you can create the captions while you produce the video. Disability studies scholars have been encouraging (Zdenek, 2018) video creators to include captioning in the video production process, rather than leave accessibility as an afterthought.

Alternatively, there are speech-to-text tools that allow you to upload any video and create an automatic caption file that you can edit and use anywhere you publish your video. Software technologies and companies are often changing, so a search for "video caption generator" or "online caption tools" will provide you with a list of current software tools that you can use to create captions for your preferred video platform. Again, don't hesitate to reach out to technology support (e.g., information technology, instructional design, or online help) on your campus.

Converting PDF Content to HTML Content

The PDF format is ubiquitous in higher-education online learning, and PDF files can be found in almost any online course. However, while PDF files are almost universal in their use, there are significant usability and accessibility challenges that students frequently encounter when accessing PDF files. Some of the challenges that PDF files present to students include the following:

- Most PDF files are not responsive, meaning they do not automatically adjust to different screen sizes. PDFs can display very small text or force the user to zoom in on the text, making the user scroll back and forth to be able to read on mobile devices.

- PDFs are delivered inconsistently on different browsers and often disrupt the online course experience—sometimes opening in a new tab or downloading to the student's desktop, taking them out of the learning management system (LMS).

- The content presented by PDF files is sometimes completely inaccessible to students with disabilities (such as blind students or those who use screen readers) and often presents an inferior experience compared to that of students without disabilities.

Some of these problems are magnified for marginalized student groups. For example, people of color, young people, and those living in low-income households are more likely to access online content solely from a smartphone than students from white and higher-income households (Anderson, 2020). In addition, students with lower levels of technological literacy are less likely to know how to resolve delivery problems presented from PDF files.

Just Because it's Always Been PDF Doesn't Mean it Should Stay PDF

In the early days of online education, many instructors were told to convert their content from the original format (Word, PowerPoint) to PDF format because of the availability of free and easy-to-use PDF readers that, seemingly, all students could have access to at the time. However, today students can easily access free tools that can open any format, and furthermore, there is now technology available that makes it possible to convert any file type to a more usable and accessible HTML web page—a file format that is more friendly to the LMS experience (Canvas, Blackboard, etc.). See Figures 4 and 5 for an example of a PDF file converted to an HTML web page.
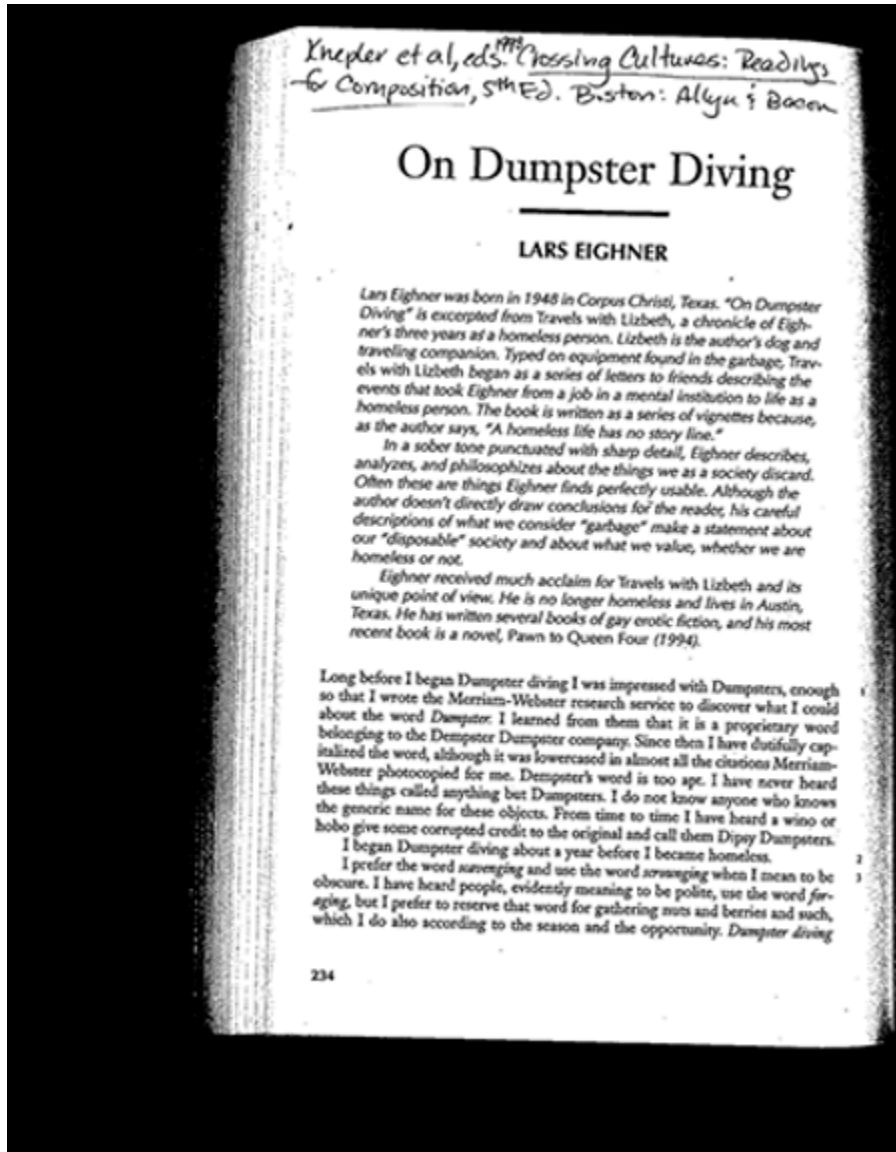
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Figure 4
An example of a scanned PDF file with handwriting.

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On Dumpster Diving

> **📖 Reference**
>
> Eighner, Lars. (1998). On Dumpster Diving. In Knepler et al (EDs), *Crossing Cultures: Readings for Composition.* Boston: Ally & Bacon.
>
> ⌒ Download *On Dumpster Diving* PDF File
>
> Lars Eighner

Lars Eighner was born in 1948 in Corpus Christi, Texas. "On Dumpster Diving" is excerpted from Travels with Lizbeth, a chronicle of Eigh- ner's three years aś a homeless person. Lizbeth is the author's dog and traveling companion. Typed on equipment found in the garbage, Travels with Lizbeth began as a series of letters to friends describing the events that took Eighner from a Job in a mental institution to life as a homeless person. The book is written as a series of vignettes because, as the author says, "A homeless life has no story line."

In a sober tone punctuated with sharp detail, Eighner describes, analyzes, and philosophizes about the things we as a society discard. Often these are things Eighner finds perfectly usable. Although the author doesn't directly draw conclusions for the reader, his careful descriptions of what we consider "garbage" make a statement about our "disposable" society and about what we value, whether we are homeless or not.

Eighner received much acclaim for Travels with Lizbeth and its unique point of view. He is no longer homeless and lives in Austin, Texas. He has written several books of gay erotic fiction, and his most recent book is a novel, Pawn to Queen Four (1994).

Long before I began Dumpster diving I was impressed with Dumpsters, enough so that I wrote the Merriam-Webster research service to discover what I could about the word "Dumpster." I learned from them that "Dumpster" is a proprietary word belonging to the Dempsey Dumpster company.

Since then I have dutifully capitalized the word although it was lowercased in almost all of the citations Merriam-Webster photocopied for me. Dempsey's word is too apt. I have never heard these things called anything but Dumpsters. I do not know anyone who knows the generic name for these objects. From time to time, however, I hear a wino or hobo give some corrupted credit to the original and call them Dipsy Dumpsters.

I began Dumpster diving about a year before I became homeless.

I prefer the term "scavenging" and use the word "scrounging" when I mean to be obscure. I have heard people, evidently meaning to be polite, use the word "foraging," but I prefer to reserve that word for gathering nuts and berries and such which I do also according to the season and the opportunity. "Dumpster diving" seems to me to be a little too cute and, in my case, inaccurate because I lack the athletic ability to lower myself into the Dumpsters as the true divers do, much to their increased profit.

I like the frankness of the word "scavenging," which I can hardly think of without picturing a big black snail on an aquarium wall. I live from the refuse of others. I am a scavenger. I think it a sound and honorable niche, although if I could I would naturally prefer to live the comfortable consumer life, perhaps — and only perhaps — as a slightly less wasteful consumer owing to what I have learned as a scavenger.

While my dog Lizbeth and I were still living in the house on Avenue B in Austin, as my savings ran out, I put almost all my sporadic income into rent. The necessities of daily life I began to extract from Dumpsters. Yes, we ate from Dumpsters. Except for jeans, all my clothes came from Dumpsters. Boom boxes, candles, bedding, toilet paper, medicine, books, a typewriter, a virgin male love doll, change sometimes amounting to many dollars: I acquired many things from the Dumpsters.

I have learned much as a scavenger. I mean to put some of what I have learned down here, beginning with the practical art of Dumpster diving and proceeding to the abstract.

What is safe to eat?

After all, the finding of objects is becoming something of an urban art. Even respectable employed people will sometimes find something tempting sticking out of a Dumpster or standing beside one. Quite a number of people, not all of them of the bohemian type, are willing to brag that they found this or that piece in the trash. But eating from Dumpsters is the thing that separates the dilettanti from the professionals.

Figure 5
The content from the PDF in Figure 4 shown as a web page within the LMS.

The current way most campus accessibility support organizations deal with inaccessible PDF files is to go through the following process:

1. Wait until there is a specific accommodation request (reactive) from a specific student for a PDF file to be made accessible.

2. Remediate the file to support the specific needs of that student using specialized tools to create a more accessible PDF file.

3. Share the remediated PDF file back to the student with a disability who requested the accommodation. Meanwhile, the original, inaccessible file remains the primary experience for the other students.

The challenges with this process are many—working with PDF files is difficult and requires specialized training to understand the underlying structure and how the content is presented within the PDF file. This work is generally more technical than what most instructors feel comfortable doing. In addition, while it is

possible to fix or create PDF files so they can be somewhat accessible, doing so is a very time-consuming process and you are still left with all of the usability and delivery problems inherent in the PDF format.

A New Normal for Presenting Content

Our solution to the many problems that PDF files present is to start using the more robust, accessible HTML for your course content, using the web editor that is built into your LMS. While web editors produce HTML behind the scenes, they make it easy to create content without having to know HTML. Instead, they provide an easy-to-use WYSIWYG editor, or "what-you-see-is-what-you-get," that is similar to any basic word-processing experience such as that offered by Microsoft Word or Google Docs (Figure 5). The web editor makes it easy to add text and images, as well as format headings, lists, and links.

There are many accessibility and usability advantages to using the LMS web editor instead of uploading PDFs into the LMS:
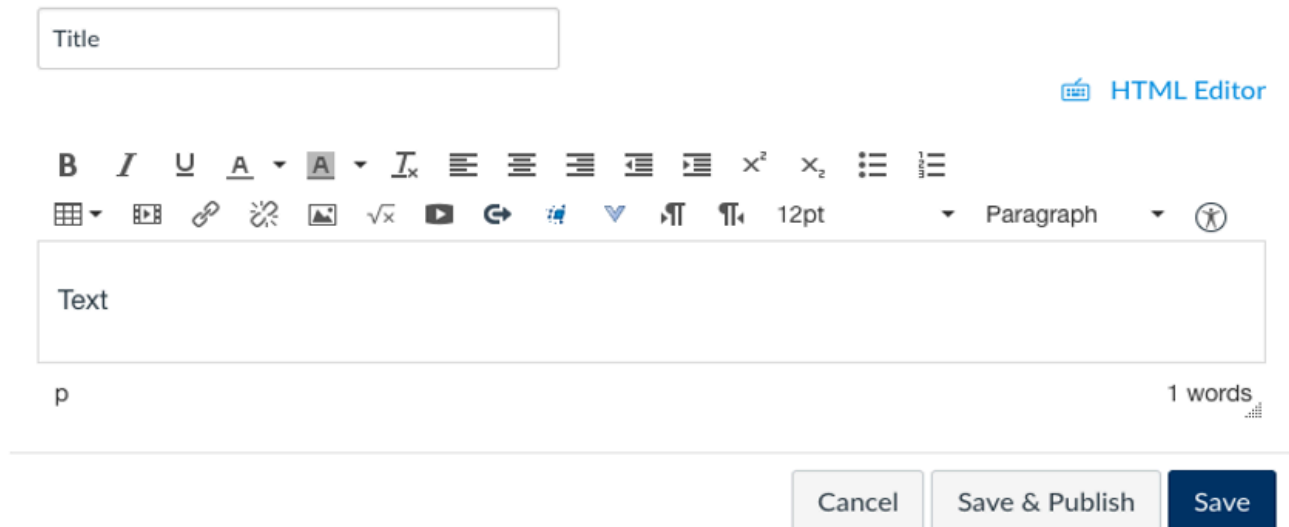
Figure 6 This screenshot shows the basic interface that the faculty would use to add content to a page in their learning management system.

- When content is added using the LMS web editor, it is deeply integrated with the rest of the LMS experience, so students do not have to leave the LMS.

- Unlike most PDF content, LMS web editor content is responsive, meaning that it adjusts for mobile devices.

- From an early student-designed pilot study, we have learned that most students prefer HTML over PDF content as a reading experience (Noyes, 2019).

Content developed in web editors is much more accessible for students with disabilities, even when the instructor is not intentionally trying to be accessible. All the tools that instructors need to create accessible web content are readily available within standard, easy-to-use web editors that are built into every LMS. Instructors just need to use them.

Where to Begin

When creating a syllabus or assignment prompt, you can create it directly in the LMS using the web editor. This is much easier than creating the content in a Word document, converting it to a PDF, then uploading it to the LMS. Using the web editor is both more usable for students and requires less work for you in managing files outside of your LMS. Instead of using Microsoft Word, Adobe Acrobat, and the LMS, you'll just use the LMS. Because this idea is new to most readers and the tools available to you may vary, we will go over the general process rather than focus on the specifics of each type of software you might use. If you need additional assistance with any of the steps below, reach out to instructional design support on your campus.

While this may work for content you create, most instructors also have collections of content that are already in PDF format. Fortunately, there are now solutions available that allow any instructor to quickly convert a PDF file to the more usable and accessible HTML content that the LMS web editor uses. We discuss a few of these tools below.

Blackboard Ally

Blackboard Ally is a proprietary tool that is available for every major LMS and is currently in use in hundreds of higher-education institutions. For schools that have access to Blackboard Ally, the ability to download an HTML version of a file is built right into the LMS and provides instructors with the option to download the HTML version of a file by simply clicking a button. For schools that use Canvas LMS and Blackboard Ally, a tool has been developed that offers a one-click conversion of any file into a Canvas page that can be edited in the web editor.

Adobe Acrobat

Many schools also have access to Adobe Acrobat PDF software. While you may already use Adobe Acrobat as your default PDF reader, it also enables the user to easily export a PDF file to many different formats, including HTML.

Free Online Tools

For someone who does not have access to either of the above commercial tools, there are also a number of websites and services online that provide this service for free. You can do a search for "PDF to HTML" to find websites and browser extensions that can be used to quickly convert any PDF file to HTML—again, HTML is the format LMS web editors use.

Once the HTML has been downloaded from any of the sources above, it is easy to copy and paste the HTML into the LMS web editor to then make any changes. It is important to note that these tools that convert a PDF file to HTML are not perfect and the quality of the HTML will vary depending on the quality of the original PDF file. Once the PDF content has been moved into the web editor you will need to edit the content for accuracy. How much time this editing process takes depends on the original quality of the PDF. However, we have found that this process generally takes less time than making an accessible PDF file and you end up with a much more robust, usable format for all students.

Once the content from the PDF has been transferred to your LMS and reviewed in the web editor, you simply publish the content in your LMS and replace the link to the PDF with a link to the HTML page. Now your students can click through the content like other content in the LMS without having to leave the course experience to find the PDF file that was downloaded. In cases where it is still valuable to keep a copy of the PDF file, you can easily add a link to the file at the top of the HTML page.

Occasionally we have been asked about copyright concerns of converting content to a different format, but in most cases, as long as you have the rights to use the original PDF file and are not sharing it outside of the requirements of fair use, you are allowed to provide that same content in alternate formats such as a web page in the LMS.

Conclusion

The two practices we have written about in this chapter originated from a need to create more inclusive and flexible content and experiences for students with disabilities, but we argue that these practices are not for accessibility alone. They are practices that we believe make better teachers. These usability practices demonstrate that when we include the margins in our pedagogies, there are at least two biproducts: (a) our teaching becomes more resilient to challenges such as the COVID crisis, and (b) we are better prepared to consider the diverse backgrounds of all our students. We have found that most teachers desire to be more inclusive, and we hope that you are now better prepared and brave enough to work on creating more inclusive course experiences.

We realize that for some instructors these new practices will be easy to incorporate into their pedagogies; others will find these practices overwhelming, even as we've tried to anticipate such concerns. We encourage you to share your successes, as well as your fears and failures with your colleagues. As you talk to them, you will likely find others who are interested in developing more inclusive course content and who also may be struggling. Accessibility is not just something your campus disability center does. Our own experience with creating more accessible and usable course content has had its share of successes and failures, but the process is much better if you have someone you can talk to about this. The more people working on accessibility and usability around you, the better, whether finding resources or providing additional strategies for each other. The more people start talking about inclusive design, the easier it will get, and the more normal and natural inclusive design practices will feel.

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BUILDING ONLINE TOOLKITS TO SUPPORT THE DEVELOPMENT OF ACADEMIC SKILLS AND DIGITAL LITERACIES

Jenae Cohn

"How Do I Annotate a PDF?": Building Online Tool Kits to Support the Development of Academic Skills and Digital Literacies

Personal, environmental, and academic factors contribute to student persistence and retention in college environments in varying and, importantly, intersecting ways. As educators determine what supporting student success in a post-COVID-19 world looks like, it is important to consider how these factors become all the more complicated by the new challenges raised with ubiquitous remote or hybridized learning. The global shift to online learning has opened tremendous gaps in experiences that students might have in learning, working, living, and socializing online. Some students may lack access to laptop computers for learning, while others may not have sufficient broadband access to connect online from their homes. Students with disabilities may not have access to the same kinds of accommodations they receive on campus; other students may find themselves better served by a remote learning environment. It is clear that ubiquitous remote or hybridized learning amplifies inequities that likely existed before the COVID-19 pandemic while potentially revealing an even more diverse array of learning concerns that college educators may not have considered prior to this unprecedented historic moment.

Student experiences of using and engaging with technology are just as varied as students' prior academic experiences and skills that they bring with them to the college classroom. Resilient pedagogy invites higher educator instructors and staff to consider how we close the equity gaps in higher education while also adopting pedagogies that attend to the range of experiences they bring to academic spaces.

A key factor to student retention and persistence in online classes in the past has been students' prior exposure to academic skill development and the development of self-efficacy (Cochran et al., 2014; Shen et al., 2013; Lee & Choi, 2011). The more exposure students in online classes had to other academic experiences, particularly in higher education, the more successful they would be in online classes. While the conditions for

taking online and hybrid classes at the moment of this collection's writing look very different—many students will not have choices about taking their class in an online or face-to-face modality—we can safely assume that exposure to and development of academic skills can contribute to success. Yet it is worth noting that developing academic skills online can look different than developing academic skills in a face-to-face learning environment. While higher education instructors may be able to safely assume that students who have developed robust academic skill sets face-to-face could be positioned to develop effective academic skill sets online too, it's worth considering some critical differences in how students may access and engage with resources to help them engage in academic experiences. For example, students with ample exposure to techniques that rely upon access to libraries, print books, or face-to-face office hours or consultations may feel adrift in an online environment. While all these resources and experiences are accessible online, engaging in them is materially different than engaging with face-to-face resources. Finding and engaging with these resources in online environments requires developing new skills and digital literacies.

Even before the COVID-19 pandemic, university students recognized the differences in accessing key university resources in online and in-person spaces. Ample survey studies have been conducted to examine student preferences for comparing online and in-person university experiences, such as taking classes or visiting the library (Gierdowski et al., 2020; Mueller et al., 2017; Thill et al., 2016; Joo & Choi, 2015). But at this juncture, examining these preferences may not necessarily advance the goals of developing resilient pedagogy. While student preferences have value, past preferences cannot account for the current crisis and trauma-based conditions that may shape student learning experiences today. A valuable path now is to assess the affordances and limitations of working in these spaces rather than to judge or compare individual preferences. Considering what is possible in online environments and exposing students to those possibilities can work in favor of fostering resilient pedagogy rather than engaging in comparative exercises that, at best, are nostalgic, and at worst, undermine the tremendous potential that online learning has for reaching new students and meeting their needs in potentially compelling and expansive ways.

Resilient pedagogy refers to a pedagogy that is attentive to students' lived experiences. Given that students' lived experiences are happening online—partially, if not fully—we must consider how classroom pedagogies can integrate the development of academic skills into the curriculum. The scholarship of teaching and learning has long acknowledged the importance of explicitly weaving lessons about academic skills into higher-education curriculum, but the need is even more acute as students adapt to learning in a range of modalities and environments and on devices from mobile phones to old desktop computers (Smale & Regaldo, 2017 Jamieson, 2013; Hitch et al., 2012; Justice et al., 2009). When access to particular material resources or university spaces may be unavailable, we can offer creative solutions that can accommodate the range of student learning environments. While some academic skill development such as time management and understanding academic discourse communities may not necessarily change based on learning in an online or a face-to-face environment, we must acknowledge where gaps in skills might exist when students move to partially or fully online learning environments.

Learning how to read, research, and take notes online requires that students understand some basic differences between software applications, desktop applications, and websites. While many instructors and university administrators might assume that students understand what it means to complete these common learning activities because they are digital natives, students' understandings of how online infrastructures work cannot be generalized based solely on age (Jacobsen et al., 2019; Bennett & Maton, 2010). In a meta-analysis of studies comparing reading on print and reading on-screen, Delgado et al. (2018) found that, of 54 studies examining comprehension outcomes in paper and on-screen, there was a significant correlation between the age of the readers and their comprehension abilities on paper and on-screen (p. 34). However, it was not that younger students were more adept readers on-screen than older readers; on the contrary, younger readers tended to have poorer reading comprehension outcomes on-screen than older readers did (p. 34). While the meta-analysis from Delgado et. al might not account for the range of on-screen reading situations that current online students might encounter, we still cannot assume that college students of any age necessarily know how to use digital environments for effective learning.

In this chapter, I advocate for college educators and campus partners, like faculty developers and librarians, to develop *online tool kits*, or short and flexible online modules, that help orient students to available techniques, tools, and resources for developing academic skills in online or hybrid learning environments. Online tool kits are collections of links, resources, and tips that point students explicitly to resources that will help them develop core academic skills for engaging in an online or hybrid class environment. Many instructors already point students to core campus resources, like the library or a tutoring center, in their syllabus. But an online tool kit takes the concept of sharing campus resources one step further. In online tool kits, instructors include a focused and compact collection of tips and paired digital tool options for developing key academic skills that are directly relevant to core assignments or activities in a class.

Specifically, I offer reading, note-taking, and researching as three core academic skills that could be the focus for online learning tool kits because these three skills may be practiced in fundamentally different ways online than on paper or in person. While there may be other skills that are equally affected by an online learning environment, I have isolated these three skills because they apply to learning contexts and experiences applicable to a variety of academic disciplinary contexts. This chapter will give examples of what tool kits for reading, note-taking, and researching look like. These examples are designed as a starting point for readers to consider a small and simple way to support students in developing online academic literacies.

First, I briefly review the literature on retention in online class environments, exploring the ways digital literacy and exposure to online experiences has been correlated with success in online learning experiences in the past. I acknowledge that students' experiences with online learning in a post-COVID-19 world are fundamentally different from students' experiences with past online learning experiences. Namely, as Hodges et al. (2020) have argued, it is more accurate to describe ubiquitous online and hybrid instruction as "emergency remote instruction." Given that moves to online and hybridized learning environments happened

quickly with limited resources and at unprecedented scales, it is unfair to assume that past retention factors can be perfect predictors for future retention factors in online classes. That said, it remains valuable to examine the literature on contributing factors to student success to contextualize the conversation about academic skill development as a key component to students' abilities to succeed in online learning environments. A key part of this context includes a brief overview of the literature on understandings of students' digital literacies in higher education. Exposure to and experience with working in online environments is a common predictor of persistence and success with them.

The subsequent sections examine how explicit conversations about developing reading, note-taking, and researching skills can be built into online or hybrid class experiences. Each section includes a short overview of the common gaps that students have in their development of reading, note-taking skills, and researching skills, and then offers an example of student-facing language for acknowledging these gaps and suggesting solutions in the form of a tool kit that can model what providing student support for academic skill development might look like. To conclude, I consider how these tool kits can be integrated into online and hybrid classes and how different institutional stakeholders, from faculty to educational developers to technologists, can support students in the development of digital academic literacies to succeed in the online and hybridized spaces that may define higher-education classroom environments in the years to come.

We can narrow the equity gap across our students by making visible the processes and resources we use for academic literacy uptake. Resilient pedagogy means considering how lived experience shapes academic skill development, and part of what educators and higher-education institutions can do is create clear pathways for students to access, understand, and interact with digital learning materials relevant to the skills they most need to develop.

Literature Review

To understand how we can enact resilient pedagogy in particular, or pedagogy that is responsive to students' lived experiences, it is worth acknowledging the conversations that have happened about retention in online higher-education classes. Over the past thirty years in higher education, enrollments in online education have increased, leading scholars to consider how and whether students' engagement in online learning impacts student retention and persistence. Lee and Choi (2011) conducted a meta-analysis of a decade's worth of scholarship on retention in online classes from 1999 to 2009, examining studies that compared factors that contributed to undergraduate students' persistence in online courses. After examining 35 studies, Lee and Choi found that a combination of students' previous academic and professional experiences and past grade performances most often contributed to retention outcomes, leading to the recommendation that these concerns could be mitigated by "identifying students' challenges and potential, developing high-quality courses, and providing advice and supportive service to relive students' emotional and personal difficulties" (p. 614). These recommendations are large, of course, and they have even bigger implications as

undergraduate student populations continue to diversify. As more women, students of color, returning students, working students, students with disabilities, and students with multilingual language backgrounds all grow to be increasingly large parts of the undergraduate college population, it is worth considering how universities might anticipate the challenges that historically marginalized populations of students face (Espinosa et. al, 2019).

While some studies of online education have compared how demographic differences between race, class, and gender impact retention in online classes, Öztok (2019) argues that online education scholars must consider "the cultural processes by which inequity is continuously created and maintained," rather than focusing purely on the effects of demographic comparison (p. 2). Examining these processes means going beyond simply considering students' racial and gender backgrounds but looking at the ways in which inequalities are systematically integrated into educational enterprises. Creating spaces for and access to the hidden curriculum of higher education, and online education in particular, may be one small component of tackling inequitable experiences in online learning.

A resilient pedagogy that acknowledges the development of academic skills online will inherently engage students in explicit conversation about digital literacy. Digital literacy refers to a broad range of competencies, fluencies, and experiences that have to do with someone's ability to navigate digital spaces with functional and cultural knowledge. Belshaw (2014) defines eight holistic components of digital literacy that capture the fact that becoming digitally literate includes, but is not limited to, mere technical skill development. Belshaw contends that digital literacy is cultural, cognitive, constructive, communicative, confident, creative, critical, and civic (p. 2). Belshaw's thinking suggests that in order to support student success in digital environments, educators must consider not just how to support students in accessing online environments, but in socializing and engaging with them in ways that reflect understanding of how digital environments operate. Jacobsen et. al (2019) described how higher-education institutions have supported students' digital literacy development in the holistic ways that Belshaw describes. For example, diverse institutions, from two-year colleges to four-year universities, have offered courses, certificates, and workshops to support students' digital literacy development. Yet, a holistic digital literacy curriculum takes time and ample resources to develop, so a gradual incorporation of digital literacy principles within individual classes may help to advance digital literacy goals as part of the teaching and learning enterprise.

No one magical or simple solution will make online learning work for all students. As the scholarship suggests, understanding how or what makes students successful online learners and/or uptakers of digital literacy is tremendously complex. Yet one thing is clear: the more possibilities for engaging in online spaces that become visible to students, the more students will be able to see themselves as digitally literate online learners. Individuals who identify as digitally literate have had opportunities to feel comfortable and fluent in online spaces. Similarly, to foster resiliency and student success in online spaces, educators can help students see where and how they can be part of an online classroom. In other words, as a component of resilient

pedagogy, instructors, faculty developers, and instructional designers can make transparent the choices that students have for engaging in their online coursework. Online tool kits can be one way of making them transparent.

The remaining sections of this chapter include language that instructors, instructional designers, faculty developers, or librarians could adopt and integrate into content-based courses to give students tool kits for accessing three different core academic skills: reading, note-taking, and researching. The language of these tool kits would need to be modified to accommodate different tools available on particular college campuses or resources available in a particular class, but they should provide usable templates for instructional contexts.

Reading

Undergraduate student experiences with assigned reading tend to be characterized by a wide range of feelings that depend on the substance of what students are reading and the purposes of the reading task. Decades of research on reading compliance, or students' follow-through on completing a reading task, suggests that students do not complete reading assignments when they feel overwhelmed by the reading task, do not understand the content in the reading, or do not see the value in the reading assignment (Smale & Regaldo, 2017 Sharma et al., 2013; Carney et al., 2010; Brost & Bradley, 2006). Some reading compliance studies have found that students are more likely to complete a reading with an extrinsic motivational factor, such as a quiz or a concrete assignment, though the literature is split on whether these extrinsic motivational factors are the best way to foster student learning, even if they foster compliance (Hoeft, 2012; Lei et al., 2010).

These factors around compliance become all the more complicated when students' preferences for reading materials come into play. The literature suggests that, on the whole, undergraduate students from a variety of age groups and backgrounds tend to prefer reading from print for academic reading tasks (Mizrachi et al., 2018; Baron et al., 2017). Mizrachi et al. (2018) collected survey responses from 10,293 college and university students and found that 78% of surveyed students preferred completing academic tasks from printed materials rather than from on-screen (p. 10). While it is valuable for instructors to honor students' preferences and to offer solutions for students to read from print, if they think that print is best for their comprehension abilities, it is equally as valuable to guide students toward practicing academic reading in digital media too, so that students with limited material access can still engage in successful academic reading practices. Even for students who may prefer to read on paper, some may want to explore or consider opportunities for reading on-screen, especially so that they can still feel confident in completing their reading assignments even when they are not accessing it in their preferred media.

I will note that effective reading practices may differ across disciplinary contexts and types of reading or writing assignments. Instructors practicing resilient pedagogy may want to consider their purposes for assigning reading deeply, which may fundamentally shape the kinds of tools or recommendations offered to

support students in their reading success (for more on this topic, see Cohn, 2021). That said, an online tool kit on supporting some basic reading functionality, such as text annotation and reducing or mitigating screen fatigue for reading tasks, can support student learning regardless of the particular reading assignment or context. An online learning tool kit for reading gives students initial exposure to the fact that reading on-screen can be personalized for students based on their preferences for reading or the devices upon which they may be engaging in reading tasks (e.g., for reading off a laptop or reading off a mobile phone).

An online tool kit for promoting academic reading on-screen might look like the following:

Reading On-Screen: Tips for Staying Focused and Tools for Keeping Track of Readings

Reading for class on-screen can feel challenging. Here are some tips to help you stay focused and feel less distracted or fatigued when you read on-screen:

1. **Break your reading task into smaller chunks.** When you know there is a reading assignment to do, skim the reading on your phone or laptop to see how long the reading is. Then, consider how much of the reading you want to do in a single time period. Commit to reading the first one or two sections of the reading or a paragraph or two from the reading in one sitting. Then, take a break from the screen, rest your eyes, and return to the other chunks of the reading later. Note that you will need to plan ahead for this technique to work well, but it may save you from feeling like your eyes are getting tired and may help you focus on one piece at a time.

2. **Prioritize what you look for as you read.** To help you remember what you've read on-screen, you may want to prioritize in advance what you want to look for. Consider, for example, identifying three key interesting take-aways or two quotes that you could bring to a live discussion or into a written response assignment. The more that you can keep a clear goal in mind as you read, the more focused you can stay on the reading.

3. **Make your reading full screen.** If you are accessing a reading assignment from the learning management system, the text of the reading might appear really small or might be inside a window. Try to make the reading full screen within the learning management system or, if the option is available, download the reading from the learning management system or try to open the reading link in a new browser window. If you are reading on a mobile device, consider downloading the reading to your phone so that you can use a reading application (like the Adobe Reader mobile app, which is free to download).

4. **Customize how the text of the reading looks to you.** A benefit to reading on-screen is that you can modify the size and the spacing of the font on what you are reading! If

you are reading a PDF, you can use an application like Adobe Reader to zoom in on the text or change the font size. You can also adjust the line spacing between paragraphs if you want more space. If you don't have access to a PDF reader tool, you can also try copying and pasting the text of a PDF into a word processor so that you can modify the size, spacing, and perhaps even the font face or font color in a word processor of your choice. Similarly, if you are reading the text on a website, try zooming in and out to adjust the font size or look for a browser extension that will allow you to modify the space, sizing, or even the color of your text.

Free Tools for Reading On-Screen:

- **Adobe Reader:** This is a free PDF reader app that works on a laptop and on a mobile phone. It allows you to customize your text and add annotations, like highlights and free-form notes, to your text.
- **PDFEscape:** If you are using a Chromebook or otherwise cannot download additional applications, this is a free PDF reader tool that allows you to annotate your text with highlights and free form notes. You can save your readings in the browser or download them as annotated files.

Easy Reader: This is a browser extension that works in Chrome and allows you to customize how long articles appear on your screen. This works on both the Chrome browser on a laptop and the Chrome app on a mobile phone.

Note-Taking

Undergraduate students may take notes on a variety of documents for a university class context, from readings (as discussed in the section prior) to prerecorded video content to live lectures. In any learning modality, whether online or face-to-face, learning how to distill content knowledge down into individual notes is a skill that takes time, practice, and guidance to develop. In an online learning environment, options for note-taking may seem more opaque without the context of sitting in a dedicated classroom space. Further, in online learning environments, students may not be sure about their options for taking notes on a digital device while perhaps also watching or accessing material from the same device. Paper and pencil may be perfectly appropriate note-taking technologies for students in online classes to use, but exposure to a wider option and array of strategies for note-taking, from mobile devices to laptops and, yes, paper, may help

students make choices that are better aligned with how they wish to organize their thinking and access evidence of their learning.

Helping students understand the range of ways they might engage in note-taking can make the task of taking notes feel simultaneously more accessible and less overwhelming if students have access to an online tool kit that may expose them to some options for online note-taking practice. The purposes for student note-taking will differ depending on individual student interests, the class contexts, and the ways in which students receive or engage in content with their classes. However, some exposure to some general tools, principles, and practices within an online note-taking tool kit may support students in choosing a note-taking strategy that can work best for them.

An online tool kit for encouraging effective note-taking practice might look like the following:

Note-Taking On-Screen: Tips for Keeping Track of Ideas From Lectures, Videos, and Readings

Trying to keep track of all the ideas you're learning in class? Here are some tips that might help you feel less overwhelmed when trying to manage the information you're learning:

1. **Have one dedicated place for storing and keeping your notes or free-form ideas for your class.** Knowing that all of your notes and ideas for a class are in one place can help you stay organized when you are learning a bunch of new ideas for the first time. You can go low-tech and keep everything in one paper notebook or you could choose an app on your mobile phone or computer that will allow you to keep track of and store notes for your class. See tool suggestions below for some ideas for digital note-taking tools.

2. **Create different sections of your note-taking space prior to watching a lecture, video, or reading. Create separate sections for facts, questions, resources, and your own summary of the material.** Whatever media you use for taking notes, try to create different sections of your note-taking space so that you can distinguish between facts or key ideas you hear, questions you have, and resources that your instructor might mention. You can create these sections by drawing distinct columns on a sheet of paper or, when using a note-taking tool, using bolded fonts, section headers, or a table to distinguish between these sections. If watching a video, consider writing down the time-stamped moment in the video when you heard a particular fact or when you had a particular question. That way, you can easily return to the content in the video at a later moment. Similarly, if you are recording a fact from a reading or have a question about a

portion of the reading, record the page number (if applicable) so that you can find it again later.

3. **If taking notes on a mobile phone or laptop, try to store your notes to the cloud (i.e., online) rather than on your local device.** Saving your notes in an online place will allow you to access your notes easily again, regardless of what device you are using. That way, if you are switching between devices, you can find your notes again using the same application later.

Tools for Note-Taking On-Screen:

● **Evernote:** Evernote allows you to create online notebooks that you can sort by different topics to keep track of your class notes and ideas. You can use Evernote on both a computer and a mobile phone and add additional tags to filter through your notes more easily. You can also search across your notes to find certain key words or ideas.

● **Microsoft OneNote:** If your school has a license for Microsoft tools, Microsoft OneNote is a free note-taking tool where you can create digital notebooks with different sections and pages. OneNote is an application that can be used on a computer or mobile phone and that you can use both online and offline. When you use OneNote when you are connected to the internet, all of your notes will be saved to the cloud automatically.

● **Microsoft Word or Google Docs word processor:** If you want to stay simple, you can always use a word processing tool like Microsoft Word or Google Docs to take notes. Neither of these tools are designed for note-taking, but if you create clearly labeled folders for your class notes and organize your documents with clear section headings that help you keep track of your ideas, these tools can work well both on mobile devices and on computers.

Researching

Undergraduate research skills are developed in a variety of university spaces, from the classroom to the lab and, of course, the library. While not all university instructors assign research projects as core assignments, students engage in research regardless of whether or not an instructor has asked them to. For example, students may activate research skills when they use a search engine to access a definition for a key word or concept. Undergraduates coming to college classes today have ample experience with using commercial search engines such as Google for finding news stories or solving a simple household problem (Head et al., 2019; American Press Institute, 2015). Yet undergraduates' experiences with more complex research activities, like

accessing university databases for finding academic articles or fact-checking popular sources are more varied. For example, Wineburg and McGrew (2019) discovered that undergraduate students lack *critical literacy skills* to discern between different kinds of reliable sources online, largely because of gaps in knowledge around assessing website credibility and information. Many undergraduate readers are misled by webpage design that makes content appear authoritative, for example, even if it is not. Some undergraduate students will also enter college classrooms with the understanding that particular domain names are more reliable than others; for example, many students learn in high school or early college environments that information on websites with ".org" or ".edu" domains are more reliable than websites on ".com" domains even though all domain names can be purchased by anyone, regardless of institutional affiliation or research-based rigor.

Librarians can offer deeper insight into developing information literacy, and so, an online tool kit for helping students understand some basic research skills and capacities should be no substitute for engagement with a local campus librarian. The kinds of research skills that instructors may want to teach their students will also vary largely depending on the nature of the research task and the discipline of the research task. That said, some basic principles for conducting research online may apply regardless of discipline and can provide some foundational entry knowledge to help students understand the difference between academic online research tasks and everyday online research tasks.

An online tool kit for encouraging effective on-screen research might look like the following:

Researching On-Screen: Tips for Managing and Interpreting Information Online

Doing research for a college or university project may feel really overwhelming the first time you do it. Here are some tips that might help you navigate the information you find and help you pick some of the best possible sources for your project.

1. **Try out different sets of search terms.** It can be hard to find exactly what you need from an online research project by just using one set of search terms. If one set of search terms is giving you too many results, try adding in a more specific phrase or put a specific phrase in quotation marks ("") to limit what the search engine is finding. Putting the word "and" between a set of search terms will also narrow down what you are finding. Alternatively, if a set of search terms is not giving you enough results, try putting the word "or" between a set of search terms; the word "or" will tell the search engine that you are interested in results that include one set of words or a different set of words.
2. **Do not assume a source is credible based on the domain name.** Websites that end

in ".com" do not always belong to businesses and websites that end in ".edu" do not always belong to schools. Explore the content of the website carefully, and if you are not sure if the content is credible, try searching laterally by Googling the name of the article you are reading to see who else has cited that website. Alternatively, try looking up the name of the website you are reading on Wikipedia to see if there are any overviews of what kind of content the website you are reading typically covers.

3. **Talk to a librarian!** Even if you are not using the library's website to conduct your research, a campus librarian can help you make sense of what you are seeing online and can help you narrow down your particular sets of search terms or ideas to help you feel less overwhelmed. A librarian can also help you navigate the university search tools more carefully and get better results for what you are trying to find.

Free Tools for Researching On-Screen:

- **Zotero:** This is a tool that allows you to keep track of the websites, articles, and books that you might be reading for your research project. In Zotero, you can save what you have been working on, put your notes in the same place as your readings, and save citation information.

Pocket: This is a bookmarking tool that creates a browser extension that allows you to click a button and save what you are reading. You can add tags or keywords that allow you to search through the readings that you have saved and find readings based on the categories you have saved for yourself.

Conclusion

Online tool kits are a simple way for instructors, instructional designers, faculty developers, and other teaching and learning stakeholders to share a few simple strategies, tools, and approaches to developing academic skills and digital literacies in online and hybrid learning environments. The examples offered in this chapter are starting points, and institutions interested in systematically adopting the use of tool kits may find that instructors, librarians, technologists, and faculty developers make strong partners in adopting tool kits that would be locally applicable. The tool kits described here have sample language that would need to be modified to be applicable in particular institutional contexts, but they hopefully provide some framework to demonstrate the kinds of lessons that could be easily inserted into asynchronous online modules. Overviews

of the tool kits could also be narrated in prerecorded video overviews, particularly if instructors wanted to demonstrate the usage of particular tools or workflows.

If instructors are interested in creating tool kits for particular academic skills, I encourage them to consult with their campus librarians and technology teams to point students directly to existing tools or resources on their campuses. University staff are eager to support students in using tools for which their campuses may have purchased licenses or access to using and will be able to provide technical support to the campus community. For instructors who appreciate the concept of sharing a tool kit but who are not sure what to refer their students to, consulting with campus staff can help ensure that there is alignment between the academic skills they would like to develop and the resources that can be supported on their campus.

The development of students' digital literacies in online classes will emerge from continued practice and engagement, and students will come to online classes with varied prior experiences. When instructors can make transparent their own processes of learning about new tools, workflows, and ideas for improving academic engagement, the more students can see that their own development is a process too. The shift to ubiquitous remote instruction has been challenging for everyone in the university community, but by revealing some small ways that students can adapt to developing academic skills online, instructors and instructional support staff can help ease the transition and foster confident student engagement in online environments.

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11.

TEAM-BASED LEARNING BRINGS ACADEMIC RIGOR, COLLABORATION, AND COMMUNITY TO ONLINE LEARNING

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Author Note

The authors are all experienced TBL practitioners and Certified TBL consultants who come from different disciplines with diverse learners and learning environments.

"Online lectures suck—nobody learns anything."

In early 2020, instructors were faced with a critical and immediate need to move education online in the face of the COVID-19 pandemic. The decision to discontinue face-to-face classes as a protection from the COVID-19 virus presented several questions and challenges, including the need to quickly develop online classes without adequate time to consider the effectiveness of different strategies. While online learning provides accessible and safe educational opportunities for students sheltering in place as a protection against the COVID-19 pandemic, faculty may question if online education provides the academic rigor, needed competencies, and student learning outcomes they hoped for in traditional campus classes.

While presenting lectures online was one popular strategy used to quickly transition courses, the combination of passive learning and the online environment lacks the demonstrated benefits of active learning involving student engagement with the content and collaborative learning among learners and their instructors (Kamei et al., 2012). Strategies to promote student engagement are crucial to promote collaboration and innovative interactions necessary for deep learning. Therefore, simply moving lectures online is likely to result in little meaningful learner–learner or learner–teacher interaction, and both may disengage.

This chapter describes Team-Based Learning, a resilient, evidence-supported instructional method (Haidet et al., 2014; Sisk, 2011) that brings engagement and rigor to online learning while promoting student resilience. The hallmarks of TBL are (a) active learning; (b) both acquisition and application of knowledge and concept; and (c) the use of small, diverse teams that promote effective group work and cohesion.

Recent work describes the growth and emerging effectiveness of fully online methods in education and interprofessional education (Abrami et al., 2006; Kuo et al., 2016; Shaw-Battista et al., 2015; Spagnoletti et al., 2008). There is a variety of online, ready to use tools, such as Khan Academy (https://www.khanacademy.org/); however, a major drawback of many existing methods is the individual basis of learning. Educators have clearly recognized the value of teaming and group projects in education, both within and across disciplines (Institute of Medicine, 2015; Mitchell et al., 2012). TBL provides an evidence-based online learning opportunity while also socializing learners into the desired behaviors of teaming to help prepare them for the work environment. Learners are evaluated both as individuals and in their teams, so the value instructors place on collaboration is evident because it is assessed. It almost goes without saying that the well-being benefits of social connectedness that are embedded in TBL instructional design and delivery are even more salient in times of crisis.

During 2020, educators faced a critical and immediate need to move teaching online in the face of the COVID-19 pandemic. Rapid elimination of in-person classes required instructors to quickly develop and deliver instruction online, often using unproven methods with uncertain effectiveness. While online sessions allow for safe educational opportunities for learners sheltering in place, simply moving traditional lectures online—often using the ubiquitous narrated PowerPoint—has questionable benefits. Educators teaching synchronously report anecdotally that looking at a computer screen of blank boxes (with many learners remaining off-camera), removes the feedback they are accustomed to in colocated teaching; the ability to "read the room" and gauge engagement or understanding is severely diminished. In online learning, instructors may ask themselves, How do I know they are engaged? How do I know everyone in a group or team activity is doing a fair share of the work? How do I know they are learning? Or, even more importantly, How do I know they are able to apply what we are teaching?

Since the start of the COVID-19 pandemic, college students have indicated feeling greater stress. The isolation faced by many learners is a critical concern given quarantining, social distancing, and the known negative impact of the actual and perceived lack of meaningful human contact up to and including increased mortality risk (Holt-Lunstad et al., 2015). In one study on the impact of the pandemic on college students (Son et al., 2020), 71% of students surveyed reported increased stress, anxiety, and depressive thoughts, while 86% reported sleep disruption. The majority of these students also reported decreased social interactions, difficulty concentrating, and worries about academic performance. The need for resilient pedagogies that both support students and support their learning could not be clearer.

What is Resilience?

Resilience is not a quality or attribute magically present in some and not in others. Rather, resilience is the result of protective and privileged factors that, in general terms, reduce the probability of negative outcomes in given circumstances (Masten et al., 2009). While educators may not have a great deal of impact on the

individual protective factors that learners bring with them, instructors can impact the learning environment by building social support and social connectedness into their teaching, which in turn helps to support student well-being (Martino et al., 2017). Social support has long been understood to reduce the impact of severe stress (see the work of King and colleagues ,1998, with Vietnam veterans) and students have reported feeling greater happiness and well-being on days when they interacted more with classmates (Sandstrom & Dunn, 2014).

Overview of Team-Based Learning

The four essential principles of TBL in any environment are: (a) appropriately formed teams that ensure learner resources are equally distributed among the teams, (b) learner accountability for the work, (c) team assignments that promote both learning and team development, and (d) frequent and immediate feedback for learners (Michaelsen et al., 2002; Rajalingam et al., 2018).

Team-Based Learning has been introduced into the online environment to ensure active, collaborative, small-group learning experiences in the context of large groups working virtually (Clark et al., 2017; Clark et al., 2018; Michaelsen et al., 2004). Synchronous online TBL mimics the face-to-face environment, while asynchronous online TBL adds flexibility for those who are not able to meet in real time; combinations of both synchronous and asynchronous elements can be used in the same course.

Four Essential Principles

As proposed by Michaelsen et al. (2004), four essential principles of TBL are necessary for learners to evolve into engaged and cohesive learning teams. Each of the four principles has a unique contribution to the learning experience and is crucial in any learning environment using TBL. Each principle provides particular challenges for the instructor in an online environment (Clark et al., 2018; Dorneich et al., 2010).

Principle 1: Teams Must be Properly Formed and Managed

Teams must be diverse and instructor-selected. Forming active and successful TBL teams requires distributing students among teams in such a way as to maximize diverse perspectives and resources in each team. To ensure diversity and to reduce the probability of subgroups arising, the instructor selects teams. Where possible, before the course begins, instructors identify important characteristics relevant to the course topic before selecting teams, such as choice of major, previous exposure to the course topic, and their level of interest in the topic. The instructor may use a survey to explore relevant characteristics, which can be delivered to the learners before class as a link in a welcome email message. The information gathered then assists the instructor in distributing the intellectual and experiential resources equally among teams. Where prior determination of

relevant characteristics is either not practical or not permitted, assigning students to teams at random can distribute individual resources adequately. It is recommended that all factors used and the method of selection be completely transparent to students (Sibley & Parmelee, 2008).

While diversity based on characteristics such as cultural background, race and ethnicity, nationality, age, or gender may bring great richness and difference of perspective to teams, selection based on such demographic characteristics should be avoided, since it can lead to marginalization and stigmatization of minority team members. The marginalization or silencing of students of color and women is not unique to TBL; it is well documented in many instructional settings, and being female and a racial or ethnic minority has been described as a "double whammy" (Ancis et al., 2000; Julé, 2004). Distributing racial minority students across teams may only serve to isolate and marginalize them further. Macke and colleagues (2019) report that in a predominantly White institution using TBL, Black social work students were rated less highly by their peers, despite having comparable grades and academic performance in coursework. (Wayland et al., 2015). Wayland and colleagues (2015) therefore recommend avoiding placing a token woman or person of color in a team. It is important for instructors to be aware of the implications of racial and gender concerns not only for team selection, but also for team management and appropriate instructor facilitation of team activities.

As will be further explored in the sections on implementation, the frequent presence of instructors in online TBL provide natural opportunities to observe team interactions carefully and discreetly moderate the impact of implicit bias by prompting students who appear to be marginalized in their teams to speak up, and by prompting team members to listen to all voices. When a team is in the initial stages of forming, any marginalization and exclusion interfere with team cohesion, a crucial ingredient for positive performance over time (Mathieu et al., 2015) as well as harming the experience of any student so marginalized (Winstead, 2016).

Team size is also important and teams of five to seven are generally recommended in TBL (Restad, 2012). In the online environment, teams of four may be preferred in order to promote more effective team cohesion and collaboration. Teams should be permanent, when possible, for the life of the course in order to promote meaningful interactions and build relationships among teammates. However, TBL can still be effective using ad hoc teams in situations where the group of learners changes frequently (such as professional development workshops). For members of a group to develop cohesion and transform into a high-performing team, common tasks and time is required (Eys et al., 2015; Michaelsen & Sweet, 2008). Team cohesion, as defined by Michalisin et al. (2004, p. 1109), is "the degree to which members are attracted to their team and desire to remain in it." Team cohesion has been an important part of the education literature as cohesive student teams have greater performance outcomes as "relatively little energy is required to maintain the group and therefore the group can direct most of its energy towards goal accomplishment." Working together throughout the semester helps learners to develop trust in other members and identify the resources each member brings to the team when participating in team assignments. As teams begin to share experiences through the group assignments, successful teams remain united in common tasks and a common purpose, as well as satisfying

some of the need for belonging (Eys et al., 2015). Many TBL instructors ask teams to develop contracts early in the course, detailing their expectations for individuals and for their teams to guide their work together.

Principle 2: Learners are Accountable for Individual and Team Work

Accountability in an online or face-to-face environment is the individual learner's obligation to account for learning responsibilities and the disclosure of that learning (Prichard, 2017). However, when collaborative team products are required for class assignments, individual or peer accountability to the team is crucial. To foster active and engaged participation in a team activity, there are several teaching strategies. For example, learners need to observe and evaluate other teams' work in similar team assignments (Sonntag & Zizzo, 2019), allowing them to measure their work compared to other teams. It is a real-time look at the team's strength of preparation and problem-solving. Team resources and roles necessary for team success are also critically assessed (Roy, 2019).

Groups become teams when team members develop trust and feel free to voice opinions and work with classmates to solve complex problems. Trust requires individual members to be accountable for their contributions, which requires being prepared to participate in class assignments. Active small-team learning developed from trust is essential in supporting learning and assisting learners in understanding and retaining information (Stein et al., 2016). Active small teams engage in activities, so learners learn from each other, and learners have the opportunity to explain concepts and ideas to their fellow team members in their own words, often making the material more understandable (Michaelsen et al., 2004).

For active team learning in TBL, there are three areas of accountability: individual preclass preparation, contributions to the team's problem-solving activities, and participation in "high-quality team performance" (Michaelsen & Sweet, 2008). Therefore, the TBL activities embedded in the course structure promote accountability. For example, preclass learning is crucial for all online TBL team activities. A team test (see below for details on the team readiness assurance test or "tRAT") has grade and social incentives to come to class prepared, and peer evaluations, completed by team members, have consequences on individual grades. The peer evaluation requires learners to evaluate the performance of team members, and for inactive team members there are consequences of losing grade points. Peer evaluation is also an incentive for team members to be more conscious of their performance (Stein et al., 2016).

Principle 3: Assignments Must be Properly Constructed to Promote Learning and Team Development

The instructional sequence in TBL is a carefully scaffolded, incremental process, which follows the same design in any learning environment. The instructional process for TBL learners starts with the preparation phase, in which students individually (usually, but not necessarily)   complete readings that provide the

content and conceptual knowledge that will prepare them to address problems that apply content and concept. Preparation is followed by the readiness assurance process (RAP) phase, in which learners are tested individually and then again in their teams on content and concepts. Teams then address more complex assignments, which require them to apply the content and concepts that they have rehearsed twice in the RAP phase.

Team-Based Learning practitioners follow the principles of backwards design (Wiggins & McTighe, 2005), starting with the guiding question, "What do you want students to be able to do at the end of the module?". Instructional materials are then designed in the opposite order from which students meet them. Learning objectives are designed based on the answer to the guiding question and the instructor decides what evidence will demonstrate that the learning objectives have been met. Application problems are designed next; applications require learners to work together to apply content knowledge and concepts to solve messy, realistic problems while paying close attention to the structural requirements for effective TBL applications. Application activities need to be complex enough to engage all team members and not be either easily answered by one person, put into a search engine to find an answer (not "googleable"), or divided into several discrete tasks completed individually. Writing effective application activities is probably the most challenging part of the model.

Next, a test, typically using multiple choice questions, is developed for the readiness assurance process (RAP). The RAP tests and recall of the knowledge and concepts from the preparation phase materials that are essential for successful completion of the application activities. It is worth noting that students answer the RAP questions before interacting with the instructor.

Finally, preparation materials are developed in whatever format effectively conveys the content and concepts required for solving the application problems, including readings, video clips, voice-over PowerPoint recorded lectures, online workbooks, and the like. In TBL, preparation readings are typically shorter and more targeted, and aligned clearly to the learning objectives. Content that is not directly relevant to learning objectives is excised from preparation materials and attention is paid to the time required for students to complete the preparation materials. Some practitioners develop or select their preparation materials before writing the test for the RAP (Koles et al., 2016). In any case, it is always useful to circle back and make sure that the instructional sequence is logically connected and aligned from beginning to end.

Principle 4: Students Must Receive Frequent and Immediate Performance Feedback

In an online or face-to-face environment, performance feedback is crucial for students to understand the learning process related to the course (Rozell et al., 2017); feedback is critical for content learning and retention (Michaelsen et al., 2004). Team-Based Learning adds another layer in the learning experience that is

particularly powerful. Teams are an essential factor in the learning experience, and teams' feedback substantially impacts team development and cohesion (Goh et al., 2020). However, for teams to understand their performance concerning the required assignment standards, feedback must be immediate and frequent. If other teams' performance can be deidentified and provided to learners, so as to adhere to educational privacy requirements, teams can redirect their efforts when they see that their performance is not matching that of other teams.

Two phases of the TBL process, the RAP and applications phases, provide immediate and frequent feedback to improve collaborative learning. Students complete the individual readiness assurance test (the iRAT) at the beginning of each module without immediate feedback and they are not aware of their scores. In the team portion of the test (tRAT), teams receive immediate feedback of which answers are correct, and continue to choose answers until they select the correct response; each incorrect response reduces the score received for the item. The final tRAT score motivates teams to prepare for both the iRAT and tRAT, and their scores alert them on how well they understand the module concepts.

Application exercises (also typically constructed using a multiple-choice format) require teams to solve challenging problems that involve complex decisions. The application exercise is fashioned around a complicated case or problem in which the team is required to choose one answer, which could be similar to other provided options. In synchronous online TBL, teams are usually asked to give their rationale orally in real time. In asynchronous online TBL, reviewing other teams' written rationales for their responses provides valuable information for each team to consider, supporting deeper understanding of the particular case or problem. Teams can go on to select (from all teams' rationales) the rationale they believe best supports the answer selected. Written rationales also allow the instructor to give written and verbal feedback to teams regarding incorrect or correct approaches. Using both types of feedback is a more effective strategy than providing only one (Medina et al., 2013). While providing timely feedback on the application exercises is more challenging in an asynchronous online environment, it is done in a very limited time frame and is crucial for deeper learning.

The last area of frequent, if not immediate, feedback is that of peer evaluation, which needs to be done with greater frequency online than in colocated environments. Maximization of the many benefits of TBL requires high-functioning teams. Many learners enjoy working within a team and improving their teamwork and individual skills. Some come to TBL with experiences of success as individual learners and with prior negative experiences with team projects, often because there were no consequences when someone failed to do their share of the work, leading to additional unrecognized and unrewarded work on the part of those who picked up the slack to complete the project. Peer feedback and evaluation mechanisms in TBL enable learners to hold each other accountable for promoting team learning and success, which helps to mitigate resentment and frustration within teams (Lane, 2012).

While there are many ways to implement peer evaluation into courses, many instructors use a combination of Likert-scaled and open-ended items, which requires students to rate their team members on such areas as preparedness, contribution to discussion (too little to too much), respectful communication, and the like. One method to support positive change over the course is to give credit for completing peer evaluations and use all but the final peer evaluation as formative, with a grade based only on the final peer evaluation. It is most helpful for an instructor to consider their particular learners, learning environment and culture, and learning goals to guide them in determining the details on how they will implement peer evaluation in their setting.

Before embarking on peer evaluation, instructors may need to address two concerns. The first is any negative perceptions about peer evaluation that students may have (Levine et al., 2007; Parmelee et al., 2009), and the second is that students may need to learn how to give and receive appropriate feedback (Michaelsen & Schultheiss, 1989). Instruction, rehearsal, moderation, and critiquing examples all function to scaffold giving and receiving effective peer evaluation and can be done during orientation to TBL, as a stand-alone session, or periodically, depending on the learning situation and goals. Although time and instructor effort are required, it helps develop a critical life skill learners will use throughout their future careers.

In addition to individual peer evaluations, there is evidence supporting the value of team-level feedback rather than individual performance. Team-level feedback focuses on the development of teamwork skills and makes an explicit connection between improving teamwork skills and improved performance. Learners may find evaluating the team as a whole less intimidating, especially as a preparatory step toward peer-to-peer feedback. Indeed, using both team and peer feedback is supported by a recent study that reported learner perceptions of both activities. Learners reported team feedback to be more helpful in developing team cohesion and in understanding characteristics of well-functioning teams, while peer-to-peer evaluations were more helpful for improving their own individual performance in their teams (Madson & Burns, 2020).

Peer evaluation promotes socialization into professional teams and improves team performance. Competence in giving and receiving feedback is becoming more important as learners and workers move among different groups in growing online professional communities with little to no time to develop face-to-face relationships.

The Phases of TBL

The four principles of TBL are implemented by means of a repeating three-step learning cycle that includes: (a) preparation, (b) readiness assurance quizzes, and (c) application-focused activities (Sweet & Michaelsen, 2012). As shown in Figure 1, the structure of modules remains consistent throughout the course, and the three-step learning cycle is repeated in every module (Clark et al., 2018). Fidelity to the TBL model, by

adherence to the four TBL principles and the three-step TBL process outlined below (Sweet & Michaelsen, 2012), is crucial for learner collaboration and active participation in learning.
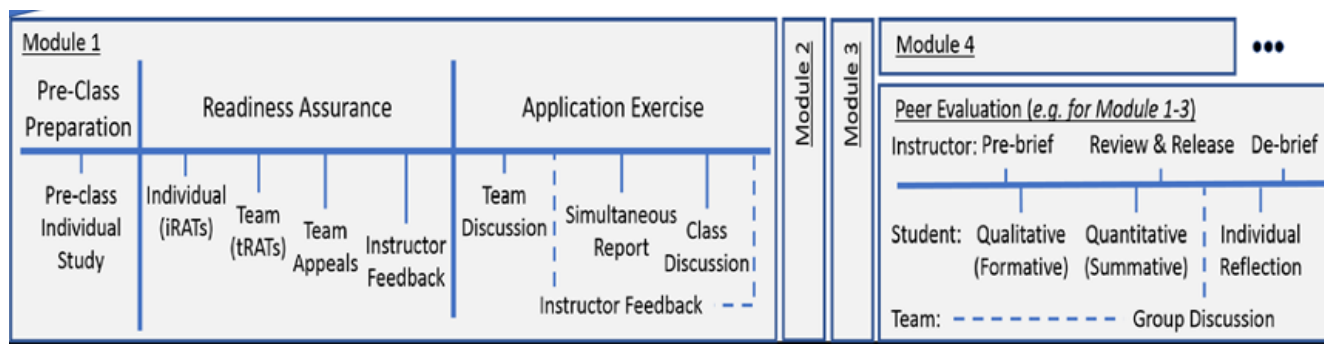

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Step 1: The Preparation Phase

Faculty members may be concerned that online learners do not understand the importance of learning material in the time allotted for completion of the module. Learners in TBL are required to be ready for class by completing assignments as preparation for an individual quiz to ensure accountability and adequate preparation for applying content and concepts to complex problems at higher levels of Bloom's revised taxonomy later in the TBL instructional sequence (Anderson & Krathwohl, 2001). Preparation assignments may be completed individually or with study partners, using any format that students can access independently, such as text, study guides, videos, and narrated PowerPoints. In a comparison of the use of traditional lecture and TBL, DeJongh and colleagues (2018) reported that students in TBL courses were more likely to spend more time preparing for class than students in the traditional lectures.

Step 2a: Readiness Assurance Process

The readiness assurance process (RAP) involves retrieval of critical concepts and content that lay the foundation for applications. There are two parts to the RAP. First, an online quiz, called the readiness assurance test (RAT), is taken individually (iRAT). Next, the same quiz is retaken with the individual's assigned team members (tRAT); items are discussed together, and item responses selected by the team (Clark et al., 2018; Sweet & Michaelsen, 2012; Michaelsen et al., 2014). As noted above, immediate feedback for the team RAT ensures that teams proceed to the next phase of learning with the knowledge required to be successful.

Assuring academic integrity in the online environment is more challenging than in colocated classrooms, and instructors take various approaches. Since RATs are formative in nature and the objective is for students to know the materials, some instructors reduce the grade weight of RAT scores, others make RAT questions

more challenging, or put tighter time limits on the iRAT and tRAT. Instructors often compare iRAT scores with the percentage of first-time correct choices in the tRAT, with the expectation that team scores will outperform individual scores.

Step 2b: Appeals

The appeals process is also part of the RAP. Students can challenge the question or the "correct" answer. Appeals are traditionally done by requiring a team to submit a rationale within a designated time frame, with evidence either that the correct answer is inaccurate, a suggested alternate wording for the question, or making a case that the preparation materials did not adequately prepare students to respond to the question. Traditionally, appeals may only be made by teams (not individuals) and only the team making an appeal benefits from receiving grade credit if they prevail in making their case. Some instructors adopt a less-formal appeals process in synchronous classes when debriefing the RAT. The appeals process supports academic rigor since it rewards engagement and critical thinking about RAT questions and team cohesion in preparing the appeal. It also provides an excellent opportunity for instructors to model good leadership skills by explicitly acknowledging that instructors may make mistakes, are open to challenge, and that successful challenges are rewarded.

Step 3: Application-Focused Exercises

After the completion of the RAP, which ensures that learners understand the basic concepts and content, teams are ready to apply them in the next phase by working on more complex problems that promote mastery of the material and which mimic authentic, real-world problems (Hassan et al., 2018; Sweet & Michaelsen, 2012). The construction of challenging and complex TBL applications is both demanding and satisfying and allows instructors to leverage their expert knowledge and skills.

There are four key features that contribute to successful applications, which are collectively referred to as the 4S's. Problems must be *significant*; with *specific* response choices; teams work on the same problems; and teams report responses *simultaneously*.

Significant Problems

As noted above, applications should be sufficiently complex and realistic, or "messy," to need input from the entire team and not be something that can either be quickly looked up or solved by an individual. The purpose of an application activity is to engage all team members in applying concepts and information from preparation materials given to a problem that is both relevant and significant to the learner. Problems lacking significance for learners are unlikely to stimulate engagement and enthusiasm.

Specific Choices

Multiple-choice answers provide the specific choices. It is also an ideal opportunity to draft possible answers (distractors), which represent frequent errors and misunderstandings. Disagreements are more likely to surface within and across teams and can be fully aired. Specific choices also track the discussion and help avoid open-ended conversations that never quite meet the requirements of the learning objective. Some faculty use interactive "gallery-walks" where students create work to be discussed and critiqued by their colleagues. Gallery walk outputs may include narrative or direct speech responses, designs, flowcharts, plans, or other diagrams, depending on the discipline and learning objective. With minimal adaptation, gallery walks can be adapted to satisfy all 4S requirements in the online environment, using collaborative learning technologies (Winter & McCarter, 2020).

Same Problem

Teams work on the same problems, coming to conclusions independently and then, after reporting out, can make their case for their chosen response and consider alternate responses. Working on the same problem maintains the interest of all teams in the inter-team discussion phase and ensures everyone covers the same learning points.

Simultaneous Report

Simultaneous response reporting helps to prevent teams from reconsidering or second-guessing their decisions, which is more likely to occur if teams report decisions sequentially. Reporting is followed by the instructor eliciting teams' rationales for their selection and facilitating debate among teams by asking thought-deepening questions, drawing out all relevant perspectives, and concluding by ensuring that teams understand the primary learning points. In the asynchronous environment, a modified gallery walk process can be used, where the instructor collects responses and posts them all at the same time, so that teams can view and comment on them in a designated time period.

Implementation

Instructor Skill Development and Resources

It unquestionably takes an investment of time and energy to learn the TBL method and then prepare for online instruction. The gateway into the TBL instructional community is the Team-Based Learning Collaborative (teambasedlearning.org). The collaborative provides three levels of TBL training and certification for those implementing TBL in both face-to-face and online environments. Many practitioners

access informal support and mentoring through the TBLC website and list-serves (e.g., teamlearning-l@lists.ubc.ca and dr-ed@list.msu.edu). Access to supportive information technology resources within learning institutions is a key tool for successful implementation of online TBL and many resources are available for use by students in online gallery walk applications, such as Google's Jamboard or bubbl.us, for idea or concept mapping. Existing major learning-management systems can be used to support TBL in the online environment; additional TBL-specific platforms are also available.

The colocated classroom is easily managed by a single instructor and experienced TBL practitioners have successfully transitioned their courses online. However, for the newer practitioner who is starting with TBL in the online environment, it may initially be helpful to have support to manage the various elements of the learning-management system, the meeting platform, and the instructional materials. Support may be available from a teaching assistant or by merging two sections of a course and coteaching with another instructor. Content expertise is not required for assistance in navigating online platforms. Dorneich and colleagues (2010) offer practical solutions and strategies for technical issues. An asynchronous class requires the same support from other faculty and the technology team.

Best Practices for Implementing Online TBL

For those seeking a detailed roadmap for online TBL implementation, Clark and colleagues (2018) developed a white paper detailing best practices and crosswalking the essential elements and practices of TBL with the quality matters standards for online education (2018).

Setting Student Expectations for Online TBL

Whether using in-person or online TBL, an orientation step precedes the other phases (Clark et al., 2018). Orientation is crucial for establishing instructor–learner and learner–learner social presence and to set expectations for how the course will be run and everyone's respective responsibilities. The three phases of TBL and peer evaluations are addressed.

In addition to course content, a robust orientation about teaching strategies and required learner activities is often overlooked but essential for student success. The orientation must also help learners to understand that the TBL teaching strategy offers them an opportunity for deep learning of the course content. Best practices for orientation include three principles. The first orientation principle focuses on the components of the course requirements and content and an introduction to the TBL activities. Students who are new to the TBL teaching strategy need to understand why this particular teaching modality has been adopted (see Clark et al., 2018). Included in the orientation are details of how to communicate with the instructor and fellow learners and a review of the technological requirements for managing the course, including how to access and submit assignments.

The second orientation principle requires instructors to form permanent teams; teams then have the opportunity to practice the RAP process (iRAT and tRAT) and the application exercise during orientation practice. A no-risk practice helps to make the process clear and familiar, without grade-related consequences, so that students begin the class with a realistic idea of the course processes, requirements, and activities.

The third orientation principle requires that the instructor is introduced to students right at the beginning of the course and that students are introduced to each other. A welcome video from the instructor is recommended because it gives students another experience of inclusion with the course. Introductions foster the development of social presence with the individual student and the instructor and among students. Synchronous or asynchronous methods may be used for instructor–student and student–student introductions. Introductions can occur in real time synchronously through an online meeting platform, or asynchronously through an active discussion area dedicated to introductions of class participants along with pictures of the students or short videos prepared by students. Students can include comments on their background related to the course content, their major, and professional or career goals. The instructor's introduction can consist of their experience with the course content and how it influences the course structure. Table 1 shows the time order of orientation activities and the orientation principles and quality matters standards for higher education (2018) that apply to each one.

NOTES

Table 1
Time Order of Orientation Activities with TBL Orientation Principles and Quality Matters Standards

Order of Orientation Activities	TBL Orientation Principles[a]	Relevant Quality Matters Standards for Higher Education (6th edition)[b]
1. Introduction letter and video, includes how to get started and where to find course materials	A, C	1.1-1.8, 2.3-2.4, 3.1-3.3, 4.2, 5.3-5.4, 6.2, 7.1-7.4, 8.6
2. Short rework assignment in introduction letter (individual)	A	4.2, 8.1-8.5
3. Instructor and all learners engage in introductory discussion	A, C	1.9
4. Teams are created by instructor	B	5.2
5. Teammates share contact information	C	1.9
6. Required no-risk assignment to find important information in online learning platform (individual and/or team)	A	1.1, 8.1-8.5
7. Required no-risk, ungraded iRat (individual)	A	5.1
8. Required ungraded team assignment (tRAT and application)	A, C	5.1-5.2, 5.4
9. Teams establish meeting schedule to work on applications	A	5.2, 5.4

Key to Table 1

[a] TBL Orientation Principles:

A= First Principle: Provide course requirements and content and introduction to TBL activities.

B= Second Principle: Form permanent teams.

C= Third Principle: Instructor is introduced to students at beginning of course; students are introduced to each other.

[b] Quality Matters General Standards:

1=Course Overview and Introduction, 2= Learning Objectives, 3=Assessment and Measurement, 4=Instructional Materials, 5=Learner Activities & Learner Interaction, 6=Course Technology, 7=Learner Support, 8=Accessibility & Usability.

Including the three best practice principles for a robust orientation provides multiple benefits. Including student introductions in the orientation also allows the student to begin understanding fellow students' resources and strengths. It also helps create a social presence and can help to reduce isolation often

experienced by online (and perhaps quarantined) learners by fostering a sense of belonging to a group of individuals who can assist them with their learning.
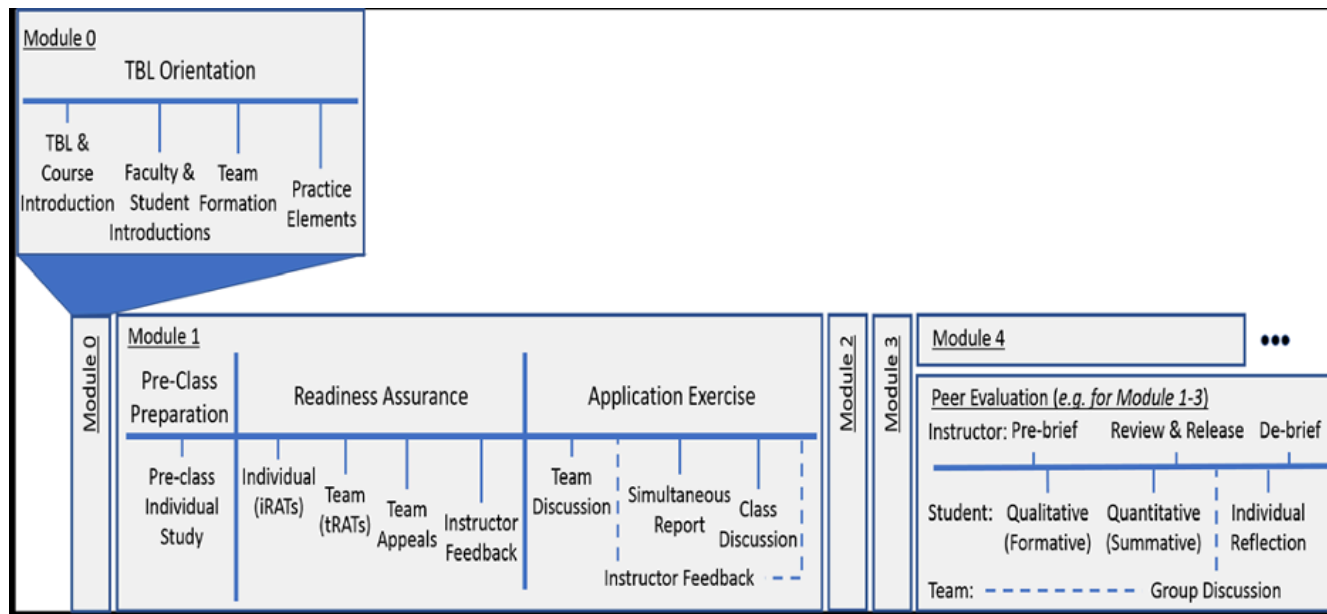

Figure 2 Reproduced from Clark et al. (2018), Creative Commons License Attribution 4.0 International License

Promoting Meaningful Engagement and Interaction in Online TBL

In an online environment, classes can be presented synchronously, asynchronously, or using a combination of both. In fully synchronous online TBL, the classes occur in much the same way in real time as colocated class sessions using a meeting platform. Asynchronous presentation presents challenges in providing the rich engaging, collaborative experience with team members, crucial for the full TBL learning experience. Nevertheless, though demanding a well-designed course allows for rich collaborative experiences.

Instructor Presence and Learner Collaboration in Synchronous and Asynchronous Classes

The instructor establishes a schedule for the three steps so that students know when preparation materials for each module have to be completed, when the RAP will occur, and when the associated application activities must be completed. Learners need to be aware in advance of the due dates for all their responsibilities. For the asynchronous RAP, the iRAT and tRAT are made available in the online platform within a predetermined time range. Individuals complete the iRAT and then teams are responsible for completing the tRAT together; one student typically enters the response to the tRAT for the team. Depending on the learners, in the online environment faculty can either preselect tools for learner collaboration or allow learners to select their own virtual platforms.

Once the RAP is completed, the relevant application activities are made available, to be completed in the designated time frame. As in colocated or synchronous online classes, learners work on the same, significant problems with specific responses—three of the four Ss. Simultaneous response, the fourth "S," is handled differently.

Learners meet in real time or use discussion boards and chat functions to develop and present their thinking about the application exercise. Instructors may require discussion board entries specific to a grading rubric to evaluate learner progress. The final component of the application activity, simultaneous reporting (the final "S"), is crucial for learning and is typically accomplished by teams handing in their specific choice for an answer with a rationale. Team responses are then published simultaneously by the instructor at a designated time. Teams are required to view them and select the one they feel answered the question thoroughly, also by a specific time.

Instructors proactively design their courses to include frequent and regular instructor participation and presence throughout the course, in a way that is apparent to learners (Garrison, 2007). In synchronous classes, instructors visit breakout rooms during the RAP and applications to gauge team process and progress, promoting student accountability, similar to what occurs in colocated classes. In TBL, instructors remain completely neutral and do not provide guidance or information about the assignment to any team.

Recent work has identified several key barriers to implementing TBL for online and face-to-face learning in medical education (Burns et al., 2014; O'Doherty et al., 2018). Barriers included lack of instructor time, instructor reluctance, inadequate technical skills and infrastructure, lack of institutional support, and lack of strategic positioning for online learning. These works also suggested corresponding solutions, including providing motivational structures and opportunities for educators to support development and implementation of relevant skills. In the current environment of COVID-19, the question of whether to move instruction online has become moot, overriding concerns of instructor reluctance and institutional hesitancy to redirect resources to online learning.

Learner Skills and Readiness

We can expect that mostcollege and high school learners have grown up with access to technology and are well-prepared for online learning using interactive platforms. However, learners are often acculturated to personal use of social media, so using online TBL provides extensive opportunities for socializing learners to professional communication online, which will only become more important as they continue into the workplace. Initial discomfort with moving from more passive forms of learning to the active learning required in TBL, tends to resolve with experience and as learners discover that their knowledge acquisition is improved (Haidet et al., 2014; O'Doherty et al. 2018; Fatmi et al., 2013).

Conclusion

The future of education will include increased reliance on and leveraging of online environments and platforms. The TBL method stands out among instructional modalities in having extensive learner–learner collaboration and instructor–learner interaction, facilitating both learning and social connectedness, and the method translates fully from colocated to online environments.

As an evidence-based small-group learning approach, TBL supports teams working together to clarify fundamental principles related to the module content as well as solving complex problems (Clark et al., 2018; Michaelsen et al., 2002; Cohen & Robinson, 2018). The highly structured instructional process using teams motivates online learners to contribute to the team process and use the team's collective skills. Thus, the responsibility for learning outcomes is both that of the individual learner and that of the team. Moreover, instructor expectations for learners to participate and complete course activities are associated with learner engagement and course completion (Kuh et al., 2004).

Michel et al. (2018) consider rigor essential for all university programs, and to assure rigor, two components are essential: (a) cognitive complexity and (b) standards and expectations. TBL provides both components and the instructional sequence moves through Bloom et al.'s revised taxonomy, using levels of increasing cognitive complexity (Anderson & Krathwohl, 2001). TBL satisfies the crucial elements of deep learning in online, active learning communities (Garrison, 2007), namely, social presence in the form of teams, teacher presence (course design and providing frequent feedback), and cognitive presence embodied in every phase of the TBL process. Other crucial factors that influence learner success include the availability and use of resources and online learning support, along with information technology services (Zhang et al., 2018). Finally, the TBL process parallels many of the skills required for future work environments, namely openness to the opinions of colleagues, shared decision making, socialization into working teams, and promotion of self-directed learning.

The features of TBL involve frequent contact and promote increased social interaction and connectedness, thus providing a structured, predictable mechanism to reduce social isolation for both learners and instructors. Many faculty report feeling really disconnected in online education, particularly when students choose to stay off camera. In TBL, instructors have the opportunity to connect frequently with learners in the large group and in their teams, so instructors get more interactive feedback in real time with learners in synchronous TBL and through team and large-group discussion boards (such as an open "ask the instructor" board) in asynchronous TBL. In asynchronous TBL classes, instructor presence can be achieved with frequent video and narrative postings throughout the semester. Increased interaction between instructors and learners, together with highly structured activities and peer evaluation afford instructors a good sense of how their students are doing academically and in terms of well-being.

We recommend that those considering TBL take advantage of formal training opportunities and certification (through the TBLC, or TBLC Certified Trainer Consultants) and the informal TBL community.

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12.

CONDUCTING GUIDED, VIRTUAL HOMEWORK SESSIONS TO SUPPORT STUDENT SUCCESS DURING COVID CAMPUS CLOSURES

Rebecca Campbell and Kevin Kelly

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College students have long used community-based practices such as study halls, review sessions, study groups, homework buddies, and the like as academic strategies to support their learning (Hogan, 1999; Madland & Richards, 2019; Thalluri et al., 2014). With increased access to online conferencing capabilities, working in community has been adapted by faculty who have used the technology to participate in virtual write-on-sites, writing retreats and writing sprints. Thus, it is no surprise that both faculty and learning centers saw the potential for creating virtual spaces for students to work together.

At the same time, simply creating a virtual space does not address common barriers that students face when learning in online environments, such as motivation, time, and support for completing learning tasks, academic skills, and social interaction (Muilenburg & Berge, 2005). To make the most of community-based study practices, teachers can help students overcome these barriers in several ways. Namely, they can create opportunities for students to (a) set aside time for studying, (b) solicit support from the instructor, (c) engage with classmates, and (d) complete required course activities and assignments. Under normal circumstances, these actions aid students who choose to pursue virtual learning experiences. In cases where campuses must close due to natural disasters (e.g., wildfire, hurricane) or health emergencies (e.g., global pandemic), these same actions act as a lifeline for students who normally would not choose to learn online.

A virtual homework sprint (VHS)—sometimes called a "work sprint"—is a space where students gather to accomplish academic work. Much like a traditional study session, students bring assignments that they need to complete or materials that they need to study in preparation for an upcoming assessment. As we did

research for this article, we found references to similar sprints used as agile software development methods for project work (e.g., see scrum.org) and to agile learning practices that adopt the entire agile work structure. While the concepts may be connected historically, we did not adopt the VHS practice with an agile learning framework in mind.

Hosted on Zoom or a similar online video conference software, faculty facilitate each VHS using a structured time management technique. In our sessions, we start the semester using the Pomodoro Technique, which prescribes 25-minute periods of productivity with 5-minute breaks (Baker, 2018). Thus, the sessions used a simple format: (a) kickoff, (b) check-in, (c) work, (d) break, and (e) check-out, which is depicted in Figure 1.
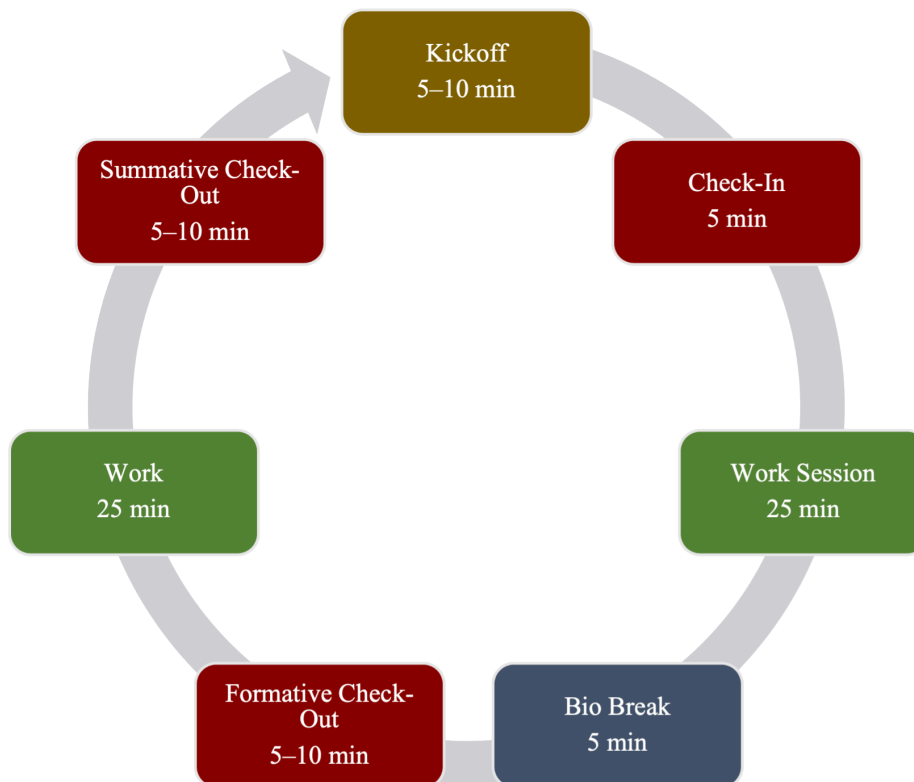

Figure 1 VHS Session Format

The following list more fully describes each step of the session format:

1. **Kickoff**: The faculty host greets students, who share where they are physically located. Faculty then check on each student and the student's household health, particularly related to COVD-19. Depending on the circumstances, faculty also check in on students in relation to other issues such as wildfires, hurricanes, and flooding. This step lasts only 5–10 minutes.

2. **Check-In**: Faculty host announces the time interval—either 25 minutes (pomodoro method) or 45 minutes, depending on student needs and interest. For 45-minute intervals, the relationship between the

task goal and the time allotment is discussed in the final follow-up. The instructor then asks the students to set productivity goals for the work period. In round-robin fashion, students share their incremental goals. When there are larger numbers of participants, students are put into breakout rooms to facilitate this more quickly. We did not require the students to work on assignments for their particular courses. Rather, the sole focus is to reserve and create space for students to be together and to be productive.

3. **Work**: Students work individually and are able to log out of Zoom or turn off video and audio. The faculty host provides cautions about using up bandwidth so that students feel comfortable logging out completely. Students who are working on group projects may work together in breakout rooms.

    1. *Set Timers*: To foster self-directed learning skills, the faculty host tells the students to set a timer, giving the time to report back both as a number of minutes and as a specific time. Students not in the same time zone are cautioned to set their timers (typically phone apps) for a number of minutes, rather than set an alarm for a specific time.

4. **Check-Outs**: After each time interval expires, students join the session again and briefly report out on whether or not they were able to meet the task goal within the time frame. Large numbers of students are broken out into breakout rooms to facilitate this moving quickly.

    1. *Formative Check-Out:* After completion of the first interval and break period, students set another productivity goal and the process repeats.

    2. *Summative Check-Out:* A final summative wrap-up is done at the conclusion of the last interval on a given day. During this time the faculty host asks questions to prompt students' metacognitive reflection. For example, they are prompted to think about the arc of their attention across each of the intervals, the appropriateness of the goals to the time allocated, and other issues related to focusing their attention for productivity.

5. **Break**: In some cases, the check-outs occur during the break, and in others the faculty host engages students in different types of activities to refresh focus and energy, such as deep breathing, simple yoga stretches, and bio breaks.

In the next section we describe our versions of the VHS practice, highlighting the rationale for adopting certain strategies, specific techniques that have worked well, and student reactions to the activity.

In Practice

Kevin's Implementation

Kevin's class was a fully online course even before the switch to emergency remote teaching and learning or "COVID-converted" courses in spring 2020. However, after learning about work sprints, he felt it would offer structured support to students who felt overwhelmed with the amount of online work they had to do at the end of a tumultuous semester. He scheduled two-hour blocks of time on four different weekdays immediately before and during finals week. The two-hour blocks included times that (a) started before typical class start times and work hours (7:30–9:30 a.m.), (b) ran during typical midday breaks in class and work schedules (11:30 a.m.–1:30 p.m.), and (c) started after typical class times and work hours (6:00–8:00 p.m.).

Kevin began the process by providing basic information about work sprints via an announcement and an information page in the learning management system (LMS). The announcement and information page both contained proactive answers to student questions—What are work sprints? When are the work sprints? How do work sprints work? Why participate in work sprints? Who can participate in work sprints? Where are the work sprints?—He set up a poll in the LMS for students to share their intentions to join with no obligation to commit. On each day with a work sprint block, he sent out morning reminders via a direct email to the class and a free opt-in text message (remind.com).

Fifteen of Kevin's 50 students joined at least one 30-minute sprint, with five attending at least one sprint every day and one student attending 13 of the 16 sprints. Students could earn five bonus points for attending each sprint, and an additional five for attending all four sprints on a specific day. Each 30-minute session followed a variation of the pomodoro method described above, outlined in the following steps:

- During the kickoff, Kevin welcomed everyone and explained the process for first-time "sprinters." He encouraged his students to work on whatever project had the highest priority, even if it was not for his class.

- During the brief check-in portion, students began by introducing themselves to any newcomers and sharing their learning goal for that time slot. Kevin shared last, modeling by sharing his own goals, holding up his phone to the camera, and starting the timer.

- During the work portion, students worked independently to complete their self-identified learning tasks. Some students chose to turn off their cameras as they worked, while others kept them on. As necessary, students asked questions via chat or using their microphone.

- During the check-out portion, students shared what they accomplished in relation to their original goal, as well as any insights about productivity or setting realistic expectations. Drawing upon a free resource

from Indiana University (2013), Kevin asked clarifying and probing questions to encourage deeper reflections. Note: Kevin conducted the check-out before the break, so all students could share their reflections. This supports students who must leave after a given work sprint cycle to go to work, attend another class, or take care of a personal or family obligation. After the last sprint of the day, Kevin conducted a short wrap-up to get feedback from students about what they liked and what they would change about the work sprint activity.

- During the break portion, everyone took a brief "bio-break"—e.g., to drink water, use the restroom, and/or stand up and stretch.

Rebecca's Implementation

Rebecca's course was designed as both a blended, flipped course with students completing readings and knowledge acquisition activities prior to Tuesday's class session. The VHS were offered at the beginning of the term and explained in a narrated slideshow posted in the LMS. Similar to Kevin's announcement page, the video addressed the concept of the VHS, the format, what work could be completed during the sessions, and the benefits of working together. Students were offered virtual homework sessions during each Thursday's regularly scheduled class time as well as during a block on Wednesday afternoons.

Attendance was optional but encouraged with extra credit. After the transition to emergency remote teaching (Hodges et al., 2020), the course became fully and asynchronously online. The homework sprints were maintained as a staple that ensured students had a place to gather and interact with both each other and with Rebecca. Thirty of Rebecca's 90 students participated in at least one session and a core subgroup emerged that attended them all. Each homework session followed a variation of the pomodoro method described above, outlined in the following steps:

- During the brief check-in portion, students began by introducing themselves, where they were logging in from, and their productivity goals. Rebecca also shared her work goals for the session to model that she was working "with" the students and her approaches to matching tasks to segments of time. After the first few weeks, the group moved from the classic 25-minute work/5-minute break intervals to 45 minutes of work and the group discussed the merits of both 25- and 45-minute intervals.

- During the work portion, students worked independently. For many students in Arizona, learning from home was complicated by inconsistent and inadequate access to the internet. This was particularly true for our Native American students who coped with the additional restrictions of curfews. Thus, students were encouraged to participate in whatever way possible, which ranged from students using the Zoom phone app, to never turning on their cameras, or students being fully visible from laptops in areas with strong bandwidth. To further accommodate these different scenarios, as well as the cost of internet

access, students were allowed to log out of Zoom completely during the work segments.

- During the interval breaks, everyone was encouraged to take bio-breaks, refresh hydration, and share their progress. The last aspect of the break was spent setting another interval productivity goal and setting timers.

- Similar to Kevin's check-out segment, Rebecca's students shared whether they had met their productivity goals, and metacognitive reflections about the effectiveness of their attention-monitoring and goal-setting. Check-outs that followed the 45-minute work intervals had more time available and so students were asked reflective questions about both self-regulation and their overall self-care and coping strategies related to the pandemic. For example, one week, students reflected and shared an area in which they were giving themselves "grace over guilt." Another week, students were asked about losses for which they were grieving and in community, their classmates brainstormed opportunities for micro-doses of those losses. For example, one student was grieving the loss of interacting with the third graders at her practicum site. Her classmates suggested micro-doses of interactions such as reading to them on Zoom, sending them messages via the email through the classroom teacher or writing them cards.

NOTES

VHS and Effective Pedagogy

The VHS has several ties to different effective pedagogies. In this section, we will connect how the practices inherent in the strategy connect to the pedagogies of care, sense of belonging and self-regulated learning (see Figure 2).
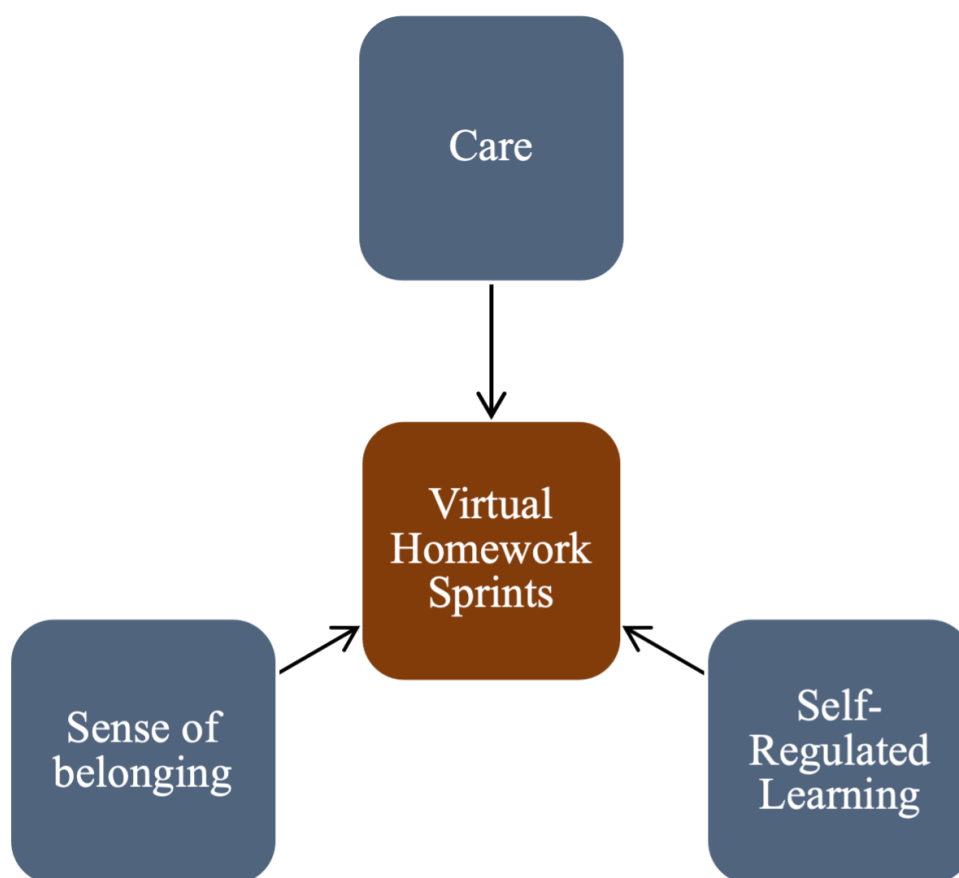
Figure 2 Pedagogies Connected to Virtual Homework Sprints

Care

Research has linked students' perceptions that their faculty cared about them to their perceptions of good teaching (Anderson et al., 2019). Care also matters to student success as students are more likely to listen to faculty who are empathetic and when students think they matter to them (McNair et al., 2016; Noddings, 1992).

By starting each VHS with a well-being check, faculty and classmates were able to demonstrate their care and concern for each other's health and learning environment. This established the context of "students as human" (Mushtare & Kane, 2020). The sharing that resulted from this check-in also fostered students' sense of belonging within the class community (Thomas et al., 2014).

During the summative check-out, powerful questions such as "What are you giving yourself grace over guilt about this week?" and "What are you most missing during the pandemic?" allowed students to process their feelings of isolation and cope with the extreme levels of unstructured time. As they self-disclosed their struggles, their classmates voiced care in the form of empathy, concern, affirmations, and helpful strategies.

The caring community that developed during the summative check-out was profound, particularly considering the small amount of time that was devoted to this portion of the VHS.

Belonging

The VHS session provided a mechanism for students to create a sense of belonging by connecting with each other. Sense of belonging is a feeling of connectedness that is generated from the belief that one is important and is supported by peers, faculty, and family (Strayhorn, 2018). Sense of belonging can be fostered by creating positive interactions with students, particularly those that involve their peers and is directly related to college student success (Strayhorn, 2018). Moreover, research on sense of belonging indicates a significant positive effect on students of color (Anderson et al., 2019; Strayhorn, 2018).

In many of the surveys conducted over spring and summer 2020 (see https://mindwires.com/summary-of-covid-surveys/ for a list), students across and beyond the United States have complained about feeling disconnected from their classmates and teachers (Kelly, 2020). The VHS strategy provides one avenue for students to regain a sense of community. So, while the VHS primarily involves students working independently, the framework directly fosters students' ability to connect to their peers.

As students shared their progress reports and self-reflections during the 5-minute check-out periods, their classmates and the teacher would provide suggestions to addressing particular challenges or affirm students' progress and productivity. Sense of belonging was also furthered when faculty reflected on their own progress. The faculty reflections fostered feelings of safety for students to reflect on their own productivity, frustrations, and celebrations. Thus, students likened the work sprints to studying with their friends in the library before the campus closed due to COVID-19.

Self-Regulated Learning

Students are characterized as self-regulated learners when they are metacognitively, motivationally, and behaviorally playing an active role in their own learning (Zimmerman, 1986). A considerable body of research has demonstrated the relationship between SRL and academic achievement (Hofer et al., 1998). Zimmerman (2001b) described five underlying issues related to the development of students' self-regulation. This section explores how the VHS addresses each of these issues:

"What Motivates Students to Self-Regulate During Learning?" (Zimmerman, 2001b, p. 8)

The VHS sessions motivated students to study by offering extra-credit points for attending. Those points were the carrots that got them to our Zoom rooms. But to self-regulate their own learning, the format of the sessions fostered motivation and accountability by having students voice their goals for each incremental time

segment and reported back on goal attainment. In their wrap-up reflections, several students pointed to goal-setting as a practice that they would repeat on their own to hold themselves accountable while completing learning tasks. Students also reported that working alongside others—even virtually—helped motivate them to stay on task. They wanted to be able to report progress, not procrastination, in front of their peers.

"Through What Process or Procedure Do Students Become Self-Reactive or Self-Aware?" (Zimmerman, 2001b, p. 8)

To complete each incremental task goal, students had to more stringently monitor their attention because of the expectation that they would report on their level of successful task completion. This metacognitive practice encourages students not only to monitor their learning progress, but also to monitor their learning process (Isaacson & Fujita, 2006). During the 5-minute breaks, students had the opportunity to both reflect on how the previous interval went as well as actually pause their work. Strategies for becoming self-aware of the cues that signaled the need for a different learning strategy or a break were explicitly made part of the reflective aspect of the VHS.

"What Are the Key Processes or Responses That Self-Regulated Students Use to Attain Their Academic Goals?" (Zimmerman, 2001b, p. 8)

Setting a specific task goal for each 25-minute increment forced students to practice predicting how much time specific types of tasks would take. By reflecting on goal attainment, students were able to get feedback on their predictions that could be used to improve setting their next 25-minute task goal. To help students with these predictions at the beginning of each work sprint session, Kevin reminded them that their course's module overview pages include time-on-task estimates for each course activity.

Over time, we noticed that students came prepared for the VHS sessions with their goals for the increments already in place and that they expressed gratitude for how the VHS demonstrated the importance of allocating and committing to specific study time. Some students were able to use the time reserved for the homework sessions to set boundaries about their academic needs by creating "sugar lies," telling their households that they had class to ensure two hours of distraction-free focus during the VHS.

"How Does the Social and Physical Environment Affect Student Self-Regulated Learning?" (Zimmerman, 2001b, p. 8)

Doing homework in community, with breaks at 25-minute intervals created intense periods of focus with bursts of interruption. This style of studying is different from getting into a longer flow state where attention extends for longer periods of time and one's sense of time is lost. Thus, the protocol for VHS isn't universally applicable across all disciplines, content, or learning tasks, and it further honed each student's ability to plan for how to learn in specific contexts and environments.

Further, students who did not meet their incremental time goals were encouraged to think about whether the cause was a mismatch between time and task or a lack of attentional resources (Corno, 2001). This fostered the student's ability to adapt to both personal and contextual conditions, a hallmark of self-regulated learning (Zimmerman, 2000).

Students also noted how the time set aside for the VHS mimicked actual Zoom class time in that their household environments respectfully provided uninterrupted quiet time. Some students took that a step further by creating "sugar lies," telling their households that they had class to ensure two hours of distraction-free focus during the VHS.

"How Does a Learner Acquire the Capacity to Self-Regulate When Learning?" (Zimmerman, 2001b, p. 8)

SRL develops from social connections and modeling (Zimmerman, 2001a). By working in a community, students were able to observe self-regulated learning from both their instructors and their peers. These observations led to a deepening of their own awareness and use of SRL strategies. This explicit modeling of goal-setting, work, and reflection provided transparency (Winkelmes, 2019) or visibility (Hattie, 2012) that is directly linked to student achievement.

Implications and Future Practice

We identified a number of key takeaways from their collective experiences, listed here as implications supported by research and intentions for future practice:

Maximize Student–Faculty Interaction Opportunities

Decades of studies (e.g., Thompson, 2001; Lamport, 1993; Pascarella, 1980) have shown that both formal and informal student–faculty interactions have a positive effect on students' motivation and performance. The power of those interactions increases when focused on students' academic or professional goals (Cox & Orehovec, 2007). Based on these findings and our observations, we intend to allow students to take advantage of our time together beyond the prescribed work sprint activities. Rebecca will be adding office hours to her virtual homework sessions and will put herself and any student with a question in a breakout room apart from the main session. An upcoming feature of the Zoom video conference platform will allow students to assign themselves to specific breakout rooms, so they will not need to interrupt the other students with their questions.

Foster Student Accountability

Students are more likely to complete learning activities that are "structured to be authentic, public, and facilitative of peer interaction" (Indiana University CITL, n.d.). In a meta-analysis on accountability research, Abadzi (2017) reported that "mutual accountability . . . may have positive effects on performance." During a summative check-out, one of Kevin's students echoed this research by stating that having to report her progress in front of her peers encouraged her to stay focused on her learning tasks. She didn't want to be the one who reported that she got distracted and started shopping or surfing the Web. Accordingly, we will be more intentional as we leverage students' sense of accountability during the virtual homework sessions. To do this we will make sure each student reports how well they did in reaching their short-term goals, recognize successes, and offer suggestions about adjusting the scope of goals based on self-evaluation and reflection. Further, they will support students holding themselves accountable for joining work sprints by allowing them to sign up for special reminders (e.g., using a free text message service like remind.com).

Provide Guiding Questions to Support Student Self-Efficacy and Metacognition

Although work sprints involve a structured process, students also need help with setting and achieving attainable goals as well as inventing individual tasks related to learning outcomes. In her study of student metacognition in biology courses, Kimberly Tanner (2012) shared questions that teachers can pose to support students in planning, monitoring, and evaluating their work on a learning task. Rebecca created her own set of powerful questions to guide student work during the virtual sessions. She intends to take it a step further by scripting enough questions for an entire academic term and tagging them to indicate which are better for a small breakout groups versus for the whole class.

Increase Student Participation and Learning Equity With Flexibility

Over two dozen large-scale surveys were conducted to determine how college students were managing learning during the COVID-19 pandemic and how to best support those students (Kelly, 2020). Students identified numerous challenges related to participation in synchronous, virtual activities, including limited access to devices, a stable internet connection, and a quiet place to study; and competing priorities such as jobs or care for children or elderly parents. Students appreciate it when instructors provide flexible options and create "spaces that work." Both Kevin and Rebecca advertise the flexibility designed to support participation in the work sprints despite common challenges—e.g., students are allowed to turn their cameras off, log out while they work and then log in again to give a report when each sprint has ended, and use breakout rooms for side conversations or office hour consultations. We both also promote the strategic use of technology to increase students' options. For example, they provide suggestions for alternative participation

pathways, such as connecting to the work sprint via a mobile device while using analog resources to complete learning tasks (e.g., read a print-based textbook, write an essay with pen and paper).

Work sprints are not official class meetings, but they do require student time and attention. The instructors further support students where they are by sharing strategies for working with family members or roommates. For instance, they encourage students to create boundaries to have a period of quiet time or negotiate to use a shared device during a scheduled VHS or work sprint session.

Use Work Sprints in Other Academic Contexts

As stated above, virtual homework sessions use the agile work sprint methodology for learning purposes. We are aware of teaching and learning centers and professional organizations that host work sprints for higher-education faculty and staff using similar formats. Just as we used this strategy to build community and support students over distance, faculty development centers have used or may use the same strategy for professional development. In her Think Write Revise podcast, Dr. Katie Linder has publicized the use of writing sprints to support faculty who want to improve their academic writing (e.g., Linder, 2017). Kevin has begun using the work sprint model with colleagues to facilitate collaborative sessions for building a faculty development course related to learning equity in online courses. The addition of a fast feedback loop during the check-in reports allows each person to begin the next work cycle with informed goals and tasks.

In summary, virtual homework sessions serve as a low-cost, high-yield mechanism for fostering community, belonging, and self-regulated learning. As we hoped, the students reported that they were highly productive during these work sprints due to a feeling of accountability and community. Their ability to self-regulate their learning through goal-setting, attention-monitoring and metacognitive reflection was evident from the discussion breaks and check-out segments. Moreover, the strategy provides a forum for unpacking and humanizing what learning looks and feels like. This is a powerful tool for current practice during a pandemic and will continue to be essential for future practice as well.

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13.

ASYNCHRONOUS DISCUSSIONS FOR FIRST-YEAR WRITERS AND BEYOND: THINKING OUTSIDE THE PPR (PROMPT, POST, REPLY) BOX

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Asynchronous discussions can challenge even experienced online learners and teachers: forums can become perfunctory hoops for students to jump through, particularly in the common PPR (prompt, post, reply) format, in which students answer a prompt and then reply to one or more other students. As a peer reviewer for online courses, I have seen rich and insightful discussions that engage students and promote learning, as well as forums that scarcely resemble discussions at all. Research on cultivating dialogue in online discussions has targeted primarily upper-division or graduate courses (see Andreson, 2009; Delahunty, 2018; Delahunty et al., 2014; Garrison et al., 1999); few publications address discussions with first-year college students (see Peterson & Caverly, 2006, for a notable exception). Much of this research is written for instructors who regularly teach online; it may be neither familiar nor accessible to faculty who must shift to hybrid or online instruction in response to unforeseen circumstances, such as the pandemic of 2020–2021.

In this chapter, I invite faculty, especially those new to online instruction, to imagine with me what successful asynchronous discussions could look like and what pedagogical architecture would make that vision a reality. Then, we will investigate strategies to make this learning tool accessible to those most flummoxed by it: first-year composition students coenrolled in support or developmental literacy classes.

Possibilities and Limitations of Asynchronous Discussions

Imagining successful discussion requires that we consider both the possibilities and inherent limitations of asynchronous forums, as these are fundamentally different from in-person class discussions. In designing an online class, instructors cannot assume that online forums will simply take the place of classroom discussions: In-person interactions allow for gesture, interruptions, overlapping conversational turns, facial expressions, and opportunities for immediate clarification. They are also clearly time-bound; instructors watch a clock and stop discussion when the class session ends. In-class discussions may favor certain personality types, and despite our best intentions, they may privilege some students over others. Yet as the review in Andresen (2009) suggests, in-person discussions are particularly suited for problem-solving and producing deliverables.

What, then, are the advantages of asynchronous discussions? They invite students to think through contributions carefully—to explore concepts deeply, particularly in critical thinking tasks associated with the higher levels of Bloom's taxonomy (see Milman, 2014). Shy students who struggle to speak up in class—and those who have encountered ridicule because of dialect or stigmatized accent features—may find it easier to participate in online discussions. Also, instructors can easily minimize their own presence in online discussions, allowing students to investigate course content without seeking immediate affirmation from faculty, whose physical presence can dominate conversation in traditional classrooms. Moreover, as students rely on each other in asynchronous conversations, they may build communities of inquiry where they share responsibility for knowledge construction (Garrison et al., 1999). But the instructor must facilitate this community by thoughtfully initiating and monitoring the discussions (Delahunty, 2018).

Without such thoughtful preparation and monitoring, discussions may leave participants frustrated, with little evidence of learning once the discussion has ended. I have experienced this frustration first-hand: As a novice online instructor years ago, I assigned discussions because I was told to do so. I received training to set up and grade discussions, and I dutifully posted one discussion prompt per week in my first-year writing courses. The results were discouraging, as I saw students answer prompts with lists containing decontextualized sentence fragments. When responding to assigned texts, they produced semi-plagiarized summaries or quoted snippets from the introductory paragraphs of readings (but rarely from latter sections). They offered opinions with confidence, but without support or textual evidence, despite my regular emails with suggestions for improving the posts. Their replies to each other contained cheerleading and enthusiastic affirmations of agreement, even when their initial comments took opposite stances. They added length to response posts by highlighting surface mistakes such as misspelled words or missing periods—again, despite reminders that discussions were not the place to point out grammar mistakes.

Obviously, these discussions generated a lot of words, but they also generated consternation and headaches for me and for the students. These students, primarily developmental and multilingual writers, faced dual uncertainties—a new type of writing and an unfamiliar online platform—and they demonstrated both

disengagement and resistance in response. Previous schooling had taught them to meet countable rubric requirements while looking for "the right answer," defined as whatever the teacher says. Thus, they took what Smith (2012) calls a "deferent stance" to assigned readings and discussions. When I prodded for something more, I was met with comments such as "But I met the word count," or "It's boring," or "I don't understand what you want me to do."

In truth, I could not articulate what I wanted them to do because I didn't know: I had no vision of what a successful discussion would look like. Circumstances at the time (long before the pandemic) drove me to teach online, and I assumed that what I did in person would translate to the online space. Obviously, it did not.

The question I have learned to ask since then is this: What do I want to see happening in that online space? And my answer has been consistent: dialogue. I have learned much through conversation with others, and I want my students to be talking about language and writing (not parroting me or a text) in our online spaces. As Myhill and Newman (2016) argue, "Learners' capacity to think metalinguistically about writing and to enact that thinking in the composing of text is enabled through high-quality classroom talk" (p. 178). At the same time, I want to provide a safe space that cultivates light bulb moments and allows students to work through the confusion that inevitably arises as they grapple with new concepts and expectations.

According to threshold concept theory (Meyer & Land, 2005), students' initial encounters with disciplinary frameworks of knowledge push them into liminal states in which they must deploy and apply concepts they do not yet fully understand. At disciplinary thresholds, in these liminal states, students face fear and a desire to "get it right," without knowing exactly what "it" is. In her introduction to threshold concepts for instructors, Cousin (2006) explains, "Teachers must demonstrate that they can tolerate learner confusion and can 'hold' their students through liminal states" (p. 5). I know all my students, but particularly first-year writers, can be bewildered by expectations and concepts they have never encountered before; I want discussion forums in online spaces to be a means of walking with my students through confusion (and the self-doubt it engenders) toward light bulb moments and knowledge-construction via dialogue.

My early discussions failed because I did not structure them to foster real dialogue. Prompts such as "What does term X mean to you?" invited students to find and copy answers from the text. My rubric focused on mechanical aspects of the posts (sentence-level grammar, word counts, and deadlines), and I posted new discussions every week, giving students little time to think carefully before churning out the next post. And the forum did not feel safe: Students had no idea how to challenge each other without being rude. Far from inviting students to enter safe spaces of discovery, my forums told students to "get it done."

Redesigning for Success: Upper-Division Courses

To resuscitate flat discussions and implement a vision for dialogue, I have been experimenting with changes to four aspects of online forums: prompts, parameters, feedback, and rubrics. I tested redesigned forums in upper-division courses first, with plans to apply my findings to first-year courses later.

Prompt Design

My initial prompts led students to find and repeat answers, primarily because I asked "known-answer" questions (see Rusk et al., 2017; Willemsen et al., 2018). Dialogue, however, occurs when instructors pose questions or problems for which there isn't a single right answer. Without predetermined answers, students can participate as legitimate voices in the dialogue (see Nystrand et al., 2003). To elicit voices in dialogue, I have shifted to multilevel prompts (Roepnack, 2019); a multilevel prompt requires both lower- and higher-level thinking skills to address open-ended questions (Muilenburg & Berge, 2000; Milman, 2014). Figure 1 is a multilevel prompt from a 3000-level course in ESL (English as a second language) pedagogy: Students first identify and explain principles (lower-level but still open-ended tasks) before they apply those principles to construct, review, and adapt short lessons (higher-level tasks). Lower-level tasks are italicized in the prompt, while higher-level tasks are in bold.

Figure 1

Multilevel Prompt from 3000-Level Course

In this discussion, we are going to pull together all that we've learned about how we acquire vocabulary and how we can teach it more effectively.

First, spend some time reviewing the readings from the past two weeks, along with the six principles for effective language teaching (from week one).

Then, *identify* two concepts, research findings, or learning principles that you think are most important for you as you consider teaching vocabulary going forward. (Here, we are building on that personal philosophy of language and teaching that we began to construct in week 1). *Explain* your two points briefly, referring to assigned readings as needed.

Finally, **apply** what you've learned to **construct** a short vocabulary lesson, following the instructions below. Be sure to review the instructions for the short lessons (link).

Post the following in this forum:

---

1. Your two vocabulary teaching points (with explanation and citations as needed).
2. Your lesson, including the statement of purpose, the one-paragraph description, links (if needed), and any materials you develop.

After posting (by 2/14), review all posted lessons. **Evaluate** these posts, asking questions about the lessons, discussing possible revisions, alternatives, or expansions. Also, **ask** for clarification if there are any points of confusion.

In designing this multilevel prompt, I wanted to contextualize the discussion for students. Thus, the prompt includes an introductory statement that locates the discussion within the structure of the course ("we are going to pull together all that we've learned about how we acquire vocabulary"). This statement uses first-person plural (*we*) to emphasize the relationship among class members (Delahunty, 2018). As rising professionals, students have joined a community of practice; the prompt concludes with a reminder that classmates are collaborators and colleagues.

Discussion Parameters

My original one-week post-and-reply format did not fit my revised prompts, so I adjusted the length and structure of discussions as well. I extended most discussions to two, three, or four weeks, inviting students to spend more time digesting material and reflecting before responding. With extended length, I asked students to make a minimum of six contributions according to three deadlines (initial, mid-point, and final). The three-deadline format requires students to connect to the discussion over several days, not all at the last minute.

With extended time, I implemented two alternatives to the prompt-post-reply discussion structure. One format, a *gallery forum*, requires students to post a product, which other students will review. The short lesson forum in Figure 1 illustrates this structure: Students post lesson plans, offer peer review, connect theory to practice, and find ways to revise their initial drafts. Gallery forums can also serve as a modified jigsaw exercise (see Aronson, 1978): Students (individually, in pairs, or in small groups) research a topic, which they teach to the rest of the class through posted presentations; the group as a whole must then draw from all presentations to solve a problem, answer questions, or integrate knowledge to complete a task.

A second type of forum is the *chain discussion*. In this structure, I post three to five initial threads, rather than a single prompt. Only one student replies to each initial thread, while others reply to the most recent post in the discussion, not the initial post. According to Roepnack (2019), these threaded chain discussions promote

deeper engagement and participation; responses flow from student to student, not from each student back to the instructor. The student-to-student response pattern encourages participants to "talk and think together" (Willemsen et al., 2018, p. 40) without triangulating back to the instructor. Figure 2 provides an example of instructions for a chain discussion in an introductory linguistics course.

Figure 2

Instructions for Chain Discussion

In this forum, I will be posting five topics related to phonetics and phonology. Rather than having each of you respond to each prompt, I am going to ask that one person begin each thread by responding directly to my post. Then, each subsequent post should respond to the previous post, not to my original post. Please address each other by name.

Some notes:

1. As in a typical conversation, shifts in topic are acceptable, as are questions. If you are going to shift the topic, please acknowledge the previous post first, and clarify your intention to move in a new direction.
2. If you feel a conversation is getting stuck, jump in with summary: "So, we're saying that . . . ." Then, perhaps suggest a new question.
3. Feel free to circle backwards to previous comments but do so politely and clearly.
4. Feel free to cite the text, link to additional sources, or use your own experiences/examples to enrich the discussion.
5. If you want to address something that is not covered in my five threads, feel free to start an entirely new thread.
6. Try to participate in at least two different topics (although you are welcome to join even more).

In the fall 2020 iteration of this chain discussion, there were as many as eight levels of nested response (in contrast to the two levels typical in prompt-post-reply discussions), with multiple branches embedded in responses to each initial post. Students posted five times or more on average, with individual students contributing 600 to over 1,000 words to the forum as a whole. Students provided links as evidence, challenged each other on occasion, and reported a growing appreciation and understanding of phonological concepts and their application within and beyond linguistics. In short, I was watching students in dialogue, both with each other and with course concepts.

Feedback and Follow-Up

Adjustments to prompts and discussion structure entailed preparation *before* discussions; I next considered what was happening *during* and *after* discussions. Initially, I had remained aloof during forums, providing feedback to individual students after discussions were complete. But it was clear the students needed more direction, especially early in the semester. Delahunty et al. (2014) suggest that instructors can guide discussions with "steering and instructing moves," which are critical to shaping "interactions for learning purposes" (p. 64). Similarly, Roepnack (2019), drawing on research from Choi et al. (2005), recommends that instructors insert "scaffolding questions" (similar to the "steering moves" described by Delahunty, et al., 2014) to deepen students' conceptual knowledge and engagement. Scaffolding questions, as the name implies, are questions that support learners who are in the process of knowledge-building: scaffolding enables them to continue or complete a task that would otherwise be beyond them, given their current skills or knowledge (Hammond, 2001). Targeted questions from instructors can restart stalled discussions by helping students challenge assumptions, make connections, offer evidence, or consider the implications of their assertions. Scaffolding questions also help students avoid groupthink by introducing counterexamples, scholars, or texts to challenge hastily drawn conclusions.

Figure 3 illustrates scaffolding questions adapted from a multi-thread discussion in an advanced grammar course. In this case, I intervened in a thread where students were analyzing the word "rememory" from Toni Morrison's novel *Beloved*. Students had posted examples of Morrison's use of the word, and most had agreed that the word was most likely a verb. With that consensus, students began to abandon the discussion.

Figure 3

Response With Scaffolding Questions

The linguist in me MUST remind you that we cannot "feel" that something is verb-like: we need some evidence. The sample sentences you quote all point clearly to a nominal use of the word: it follows both a possessive pronoun (*my*) and an indefinite article (*a*), clearly indications of noun-iness (which is 100% a word!).

BUT – she will use the word again, so be ready. What syntactic evidence is needed to show the word is a verb? What should you look for when you find the word again?

Effective scaffolding questions—posted before forum deadlines—offer students an opportunity to continue and to broaden the discussion. But discussions must eventually close. What happens to learning at that point? Could ongoing feedback and reflection create opportunities for students to integrate insights and conceptual

knowledge from the course as a whole? Composition research has highlighted the value of systematic and intentional reflection in supporting transfer of knowledge and skills to new contexts (see Yancey et al., 2014). As Adler-Kassner et al. (2016) note, "Reflection as a mode of inquiry encourages both self-monitoring and arousing mindfulness because writers are routinely theorizing about what and how they are learning" (p. 30). To help students consider what and how they are learning, I explored avenues for post-discussion reflection and application. For example, as part of a course review or even a final exam, I may ask students to select a point of confusion or an "aha!" moment from the course discussions and explain how those moments contributed to their learning in the course.

Asking students to summarize the highlights of a discussion is another post-discussion assignment option; if students have missed participation for some reason, a summary can serve as a make-up assignment. I have also required students to integrate and cite discussion insights from classmates in course projects and research assignments; doing so positions their work as legitimate contributions to scholarship. And, while I generally map out all discussions prior to the start of a semester, it is helpful to leave room for flexibility in later discussions: Students may need to revisit comments or conclusions from early discussions in light of new readings or experiences. In some classes, students can take responsibility for the direction of discussions by reviewing previous forums, assessing what was most helpful for their own learning, and drafting the initial threads for one or more forums toward the end of the term.

Redesigned Rubrics

Thoughtfully constructed rubrics alert students to what is valued by an instructor or a program, and they promote conversations about learning (see Turley & Gallagher, 2008). My early discussion rubrics, which focused on countable elements such as number of posts and grammatical accuracy, did neither of these things. In my redesigned rubrics, I still refer to minimal benchmarks such as word counts, but I have embedded them in a framework aligned with the purpose of the discussion. In order to learn via dialogue, students must participate (usually a minimum of five or six posts). To demonstrate substantive participation, students must contribute a minimum number of words across the whole discussion, and their participation must extend across several days. Students are encouraged to bring in links, references, and personal experiences, and while I do recommend editing posts for clarity, grammar issues no longer factor into the grade. Finally, I have renamed the discussion component of the course grade; it's no longer "participation" or even "discussion." Rather, I call it "engaging with content" or "joining the conversation," names that highlight the purpose of the discussions.

Redesigning for Success: First-Year and Corequisite Courses

Redesigned structure, management, and grading have improved the quality of discussions in my upper-division online and hybrid courses, even in those I would ordinarily teach in person. But for first-year writers enrolled in corequisite courses, the redesigned structure is not enough to bridge them into successful discussions; lack of technical knowledge, lack of familiarity with college expectations, and lack of background in the discipline all factor into the challenges of asynchronous discussions with first-year, developmental, and corequisite students.

The in-person version of the first-year composition course I teach is difficult enough without additional online challenges: I follow a modified writing-about-writing approach (Downs & Wardle, 2007), which introduces students to writing (rhetoric) and language (linguistics) as both skills and objects for study. In this course, students read scholarly texts from composition studies and applied linguistics; they then write about the concepts they are learning in light of their own experiences, building metarhetorical awareness (of genres, conventions, contexts, and processes) and metalinguistic awareness in the process of doing so. In our in-person sessions, we have many opportunities to "talk about writing," and I designed discussions to continue that talk when we shifted to online and hybrid formats.

Consider, for example, a gallery discussion meant to help students practice paraphrasing as a reading strategy. The multilevel prompt included both lower- and higher-order tasks: students were asked to *identify* a quote that most helped them understand a difficult concept (the notion of Discourse as defined by Gee, 1989), and then paraphrase it. After posting their quotes and paraphrases, they would *review* and *evaluate* the effectiveness of the posted paraphrase, suggesting areas of potential misunderstanding and possible improvement. Finally, they would revise their paraphrases. Unfortunately, without targeted scaffolding, the discussions did not move students past the initial post, as in this typical (but hypothetical) exchange:

> Post 1: "Discourses are ways of being in the world, they are forms of life which integrate words, acts, values, beliefs, attitudes, and social identities as well as gestures, glances, body positions, and clothes." A Discourse is our personality and the way we interact with other people.

> Post 2: Great job, P. I agree with you all the way.

Had we done the exercise in a face-to-face classroom, I would have provided in-the-moment scaffolding to help students expand both the initial contribution and the response. In the classroom, I approach this sort of scaffolding through the lens of genre-based pedagogy, or the teaching-learning cycle, an application of systemic functional linguistics (SFL) developed initially for elementary literacy education in Australia (see Schleppegrel, 2004). Prior to the pandemic, however, I had not considered if or how that framework could be translated into scaffolding to support novice writers in online discussions.

A thorough overview of genre-based pedagogy is beyond the scope of this chapter (see Humphrey & Macnaught, 2011), but in brief, the approach offers literacy instruction through a sequenced introduction to academic genres—genres that students must both recognize and successfully produce in academic contexts. According to the theory, a genre is a "staged, goal-oriented social process" in which writers or speakers draw on recognizable linguistic resources to accomplish various discourse purposes (Martin, 2009, p. 10). Further, genre pedagogy aims to make the linguistic features and discourse purposes of genres explicit so that students can know what to expect when working within those genres. While learning to identify and produce academic genres, students build awareness of the role genres play in structuring academic and social relationships.

In my first-year writing courses, not only do students encounter genres such as the literacy narrative, expository profile, or argument analysis—each of which they write as part of a portfolio—but they also learn about less formal but nonetheless recognizable academic genres such as peer review, debate, and exploratory discussions. Thus, to build scaffolding for successful participation in online discussions, I needed to treat those discussions not merely as a tool for accomplishing course goals, but as a genre with recognizable—and learnable—features. These features can then be taught through the four phases of the teaching-learning cycle: context creation, deconstruction, joint construction, and independent construction. The extended time I have with first-year writers in corequisite courses gives me the space to work through all four phases and repeat them as needed.

Context Creation

To create context, instructors articulate the role of a target genre within a discipline: who uses it, when, and why. As a genre, asynchronous discussions have a purpose: scholars engage in them to share ideas, analyze experience, make connections, challenge assumptions or hierarchies, and build theories. Upper-division and graduate students participate in them to practice and develop disciplinary knowledge. Both scholars and students engage in asynchronous discussion as exploration, not performance. Thus, to create context, I must introduce asynchronous discussion as exploration, not performance or "knowledge-telling" (Bereiter & Scardamalia, 1987/2013), and I must assure students that I will show them how to participate, step by step, setting up the second phase of the cycle.

Deconstruction

In the second phase, deconstruction, instructors break down or deconstruct genre samples to identify and illustrate expected discourse moves, along with the linguistic resources needed to accomplish those moves. Deconstruction stems from the SFL notion that language accomplishes three overarching purposes, called "metafunctions": the ideational, to represent information; the interpersonal, to negotiate relationships between participants; and the textual, to manage the structure of texts or discourse (Halliday & Matthiesen,

2013). Writers use linguistic resources to realize these metafunctions within genres, and during deconstruction, teachers demonstrate how the genre works: how ideas are represented, how relationships are negotiated, and how the texts are structured.

Consider the following examples of asynchronous discussion responses from a recent upper-division course I taught:

> Student A: P! I also said that dialects are a "sub-category" of a language. This was the first thing that came to mind for me. I think your understanding of Discourse differs from mine, but I think your reasoning is interesting. Would you say that dialect can fit into a Discourse, but Discourse cannot fit into someone's dialect?

> Student B: I had not yet thought about correcting someone's speech/grammar/spelling as "gatekeeping," that is a very interesting way to approach this situation. Would it only be considered gatekeeping if the correction is made in a derogatory manner? Or could it be a blanket concept, covering even innocuous corrections to someone who accidentally misspoke or miss-typed?

These examples illustrate expected conversational moves in a discussion:

1. The responder first **sums up or repeats** a concept from the previous post and **affirms** the contribution. Student A uses an embedded noun clause to repeat the concept: ("that dialects are a 'sub-category' of a language."), and the **adverb** "also" to affirm it ("I also thought that . . . "). Student B uses **a gerund** ("correcting . . . ") to restate the initial comment, and then affirms the value of that comment ("that is a very interesting way . . . ")

2. The responder may **signal a disagreement or contradiction**. Student A deploys a verb ("differ") to accomplish this.

3. The responder attempts to **extend the conversation by asking a question**. Both students pose questions with the modal "would," suggesting an exploratory stance in relation to the concept. The questions are designed to clarify **definitions**: Student A asks, "would you say . . . ?" while Student B **offers options** connected by "or."

To initiate deconstruction, teachers take actual samples to analyze (with student permission), or construct exemplars relevant to course content. Here, for example, is a sample I created to deconstruct with first-year writers:

> Post 2: Hey J, I thought the same thing when I first read this. I thought he was talking about personality. But two paragraphs later, Gee starts talking about how we acquire a Discourse, and he uses words like "enculturation," and "interaction with people who have mastered the discourse." That doesn't sound like personality to me. Would you say, for example, that you get your personality from the people you are around, or that you hang around them because of your personality? So, I don't think it means personality. What do you think?

NOTES
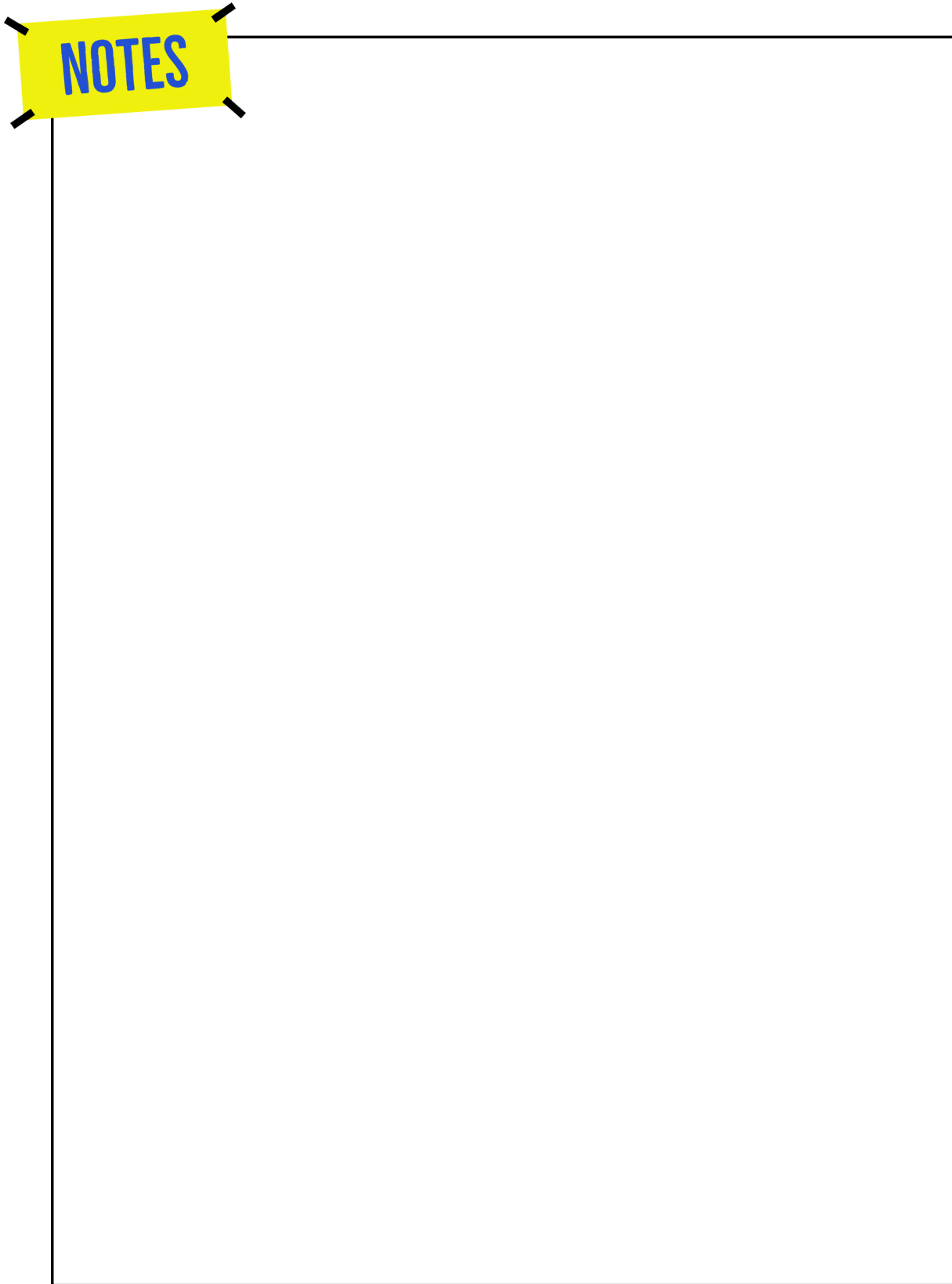
As I break this sample down (either via video or during a synchronous class session), I construct a simple chart listing rhetorical moves on one side and possible language structures on the other, as in Figure 4.

Figure 4
Genre Moves and Structures Chart

Moves	Structures/Frames
Affirm and Repeat	I think/thought the same thing about _____ I agree that _____ I also thought that _____ I see your point that _____
Repeat to clarify	Are you saying that _____? When you say "_____," do you mean _____?
Contradict or challenge	But . . . However, . . . I read this differently. I thought _____. Can you show us where the author says that _____? What about when the writer says _____?
Give examples	Like . . . Such as . . .
State an opinion	For me, To me, I think . . .
Question	Would you say . . . ? Do you think . . . ?
Conclude	So . . .
Invite	What do you think? Do you think that makes sense? You mentioned _____; could you tell us more about that?

Connect	Your answer reminds me of _____.
	This sounds like _____.
	Do you think _____ and _____ are talking about the same thing?
Summarize	We seem to agree that _____, but we aren't sure about _____.

Students continue to build the chart as more texts are deconstructed, and then they use the chart to help them identify and annotate discourse moves in other sample posts and responses.

Joint Construction

In the next phase, joint construction, students collaborate with other students or the instructor to practice the genre features they are learning. For example, I might post the following sample for students to consider:

Gee says we "take on a particular role that others will recognize." I think he's talking about jobs—like the leader, the class clown, the brown-noser and stuff like that. It's just the part you play.

Students then receive these instructions:

Imagine you saw this post in a class discussion. Talk about the post with your partner (by phone, email, or Zoom chat). Then, using your chart as a guide, write a response that **repeats**, **affirms**, **challenges**, and **invites** another response.

For additional joint construction practice, I might post a sample dialogue like this (which includes a reference to Swales, 2016):

Initial Post: In the article we read by John Swales, he defines a discourse community. He says his original definition needs to be updated: "Fine, but we now need to emphasize the roles of new digital channels, such as emails, blogs, tweets, etc., and we also need to stress that without any means of intercommunication of any kind, there is no real community. Subscribers to Le Monde may share certain characteristics, but they do not form a discourse community" (23). So, Swales is basically saying most of our communication today is online, and that pretty much makes the whole world a community. We are even communicating online for this class, so we are a community, too.

Response 1: I agree with you! It's cool how you brought in our class and how we are a community.

Response 2: I think you are right that most of us communicate online a lot these days. But I am wondering why he says subscribers to Le Monde aren't a discourse community. Is he saying that you have to talk back and forth, not just read the same thing, to be a discourse community? If that's right, then is it true that the whole world is a community? That doesn't seem to fit with the other descriptions of discourse communities, at least not to me. Help!

Response 3: I like this quote, too, and I am glad you reminded us that Swales is updating a definition. But I wonder if adding in digital communication really means that we are all one big discourse community? Or is that actually what you are saying? Do you have to use digital communications a certain way to be a community? But I think you are right about our class. So, maybe the question is what's the difference between our class (a community) and subscribers of Le Monde (not a community)?

Students would then receive the following instructions:

In this exchange, identify at least one affirmation, clarification, challenge, and invitation. Which response do you think will help the group understand Swales better? Which response is most likely to end the conversation? How would you improve that response?

Independent Construction

The final stage of the process is independent construction, in which students are composing in the genre for themselves. Independent construction, of course, does not mean that scaffolding disappears; rather, instructors shift to the sort of scaffolding questions that characterize the upper-division discussions. Also, if needed, the various phases of deconstruction and joint construction may be revisited; students can be reminded to include specific rhetorical moves in their responses or to analyze and annotate their own posts and set goals for improvement.

Critical Thinking and Sentence Frames

My application of genre-based pedagogy, particularly deconstruction and joint construction activities, may remind some readers of the templates in Graff and Birkenstein's 2008 composition text, *They Say, I Say: The Moves That Matter in Academic Writing*. That text has faced skepticism over the years: Templates may encourage a perfunctory, "fill-in-the-blank" approach to discussions. Benay (2008) summarizes these concerns: Templates are formulaic and could conceivably circumvent the thinking process. Within the context of genre-based pedagogy, however, attention to the language of rhetorical moves can serve as gateways to effective participation in discussions, provided that instructors also press students toward independent construction and reflection. When thoughtless or perfunctory comments arise in early discussions—as they surely will—instructors can interject scaffolding questions. As with discussions in upper-division courses, instructors must manage discussions strategically for success (Delahunty, 2018). Ultimately, if the discussion forums feed into other course projects, including application and reflection activities, students will find incentives for more thoughtful contributions.

Genre-Based Pedagogy Outside the English Department

Instructors need not be applied linguists to help students deconstruct target texts, although some familiarity with terminology is helpful. To apply the process across disciplines, faculty can begin by collecting examples of effective posts and highlighting the rhetorical moves in them: making a claim, identifying problems, proposing solutions, introducing evidence, suggesting alternatives, etc. Using this list, faculty can note preferred linguistic structures (i.e., use present tense to summarize published research; use third person to make generalizations about data). Once instructors have walked through deconstruction for themselves, they can select the most critical features to introduce in class.

Of course, cross-disciplinary collaborations can also support the teaching-learning cycle in first-year gateway courses. Existing writing in the disciplines (WID) or writing across the curriculum (WAC) programs may offer opportunities for collaborative teaching, and some institutions allow upper-division students to serve as writing fellows or embedded tutors in first-year courses with extensive writing requirements, including asynchronous discussions. Faculty can leverage these partnerships to develop deconstruction, joint construction, and independent construction activities for students in online courses. Cross-disciplinary groups might also consider reading and discussing an applied linguistic analysis of disciplinary genres; Biber (2006), Hyland (2005), and Feak and Swales (2011) are accessible choices.

Resilient Pedagogy: Practical Concerns

Implementing redesigned asynchronous discussions, whether in first-year writing courses or upper-division courses, can be daunting, particularly during times of uncertainty such as a worldwide pandemic. If you are new to online teaching—or implementing a significant redesign—start slowly: target just two or three rhetorical moves to teach first-year writers, and assign just two or three discussions across the course.

I also recommend assigning an ungraded discussion during the first two weeks of class. As students introduce themselves, ask them to discuss how they interact online outside of class—via TikTok, Facebook, Instagram, Twitter, Discord, or any other platform. This introductory forum allows students to familiarize themselves with the logistics of posting and responding, and more importantly, it initiates phase one of the teaching-learning cycle: Students begin to view online conversations as genres, creating a context for discussions that follow.

Finally, schedule time to monitor assigned discussions. While I have encountered instructors who check discussions daily, that level of oversight does not fit my schedule. Instead, I check participation, answer questions, and pose scaffolding questions at regular intervals during discussions, usually once or twice a week. If I find students have not logged in to the discussion, I post an announcement or send a quick reminder. By blocking time on the calendar to manage discussion work, I can stay on top of grading, incorporate discussion

insights and concerns into ongoing instruction, and model strategies for success, particularly for first-year students.

Conclusion

Carefully designed and scaffolded discussions can support critical thinking and the development of disciplinary knowledge, both in upper-level and first-year courses. The challenge for instructors teaching in uncertain times is how to structure the design (in advance) and the scaffolding (in process) to support learners. Delahunty (2018) describes the challenge this way:

> There is much potential in a well-designed task for new understandings to be collaboratively explored, and even more so when a skilled lecturer is mediating. However, if discussion around the task is not mediated, students tend to revert to the safety of what they already know, and the opportunity to co-construct knowledge may be lost. (p. 20)

We "mediate" discussions, as Delahunty suggests, when we redesign asynchronous forums for our students—and when we work alongside them in those discussions. Thus, even in uncertain times and novel contexts, we support them in crossing disciplinary thresholds and joining disciplinary dialogue.

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14.

DESIGNING CURRICULUM COLLABORATIVELY: A PRACTICE FOR LEARNING ALONGSIDE UNDERGRADUATE TEACHING ASSISTANTS DURING UNCERTAIN TIMES

Jessica Rivera-Mueller and Kresten Erickson

The transition to remote learning during the Spring 2020 semester was abrupt for faculty and students, and it did not allow much time for reflection or purposeful planning, especially as individuals were faced with managing multiple aspects of their lives. Educators had to consider quickly what learning experiences and teaching practices could be preserved or revised, as well as what learning activities could or should be removed. These choices were not easy to make. During this challenging moment, however, we discovered how collaborative partnerships between faculty and undergraduate teaching assistants (UTAs) can contribute to the development of a flexible and responsive pedagogy, as well as professional learning for the faculty member and UTA.

We reached these insights through our participation—as a faculty member and UTA—in Utah State University's Undergraduate Teaching Fellows program. This program provides an opportunity for undergraduate students to assist faculty members with their day-to-day teaching responsibilities. When the pandemic began, day-to-day teaching responsibilities shifted dramatically. Our partnership, however, was not structured around specific tasks. Instead, we decided to pay attention to how learning unfolded in the class and collaboratively create learning experiences that would further our pedagogical goals. We agreed to approach the partnership organically, determining that it would be best to discover teaching possibilities throughout the semester. When we created this approach in January, we had no idea how well it would serve us in March. Engaging as co-designers created the kind of partnership that allowed us to reimagine our roles and our course in a new and unfamiliar pedagogical context.

As the authors of this chapter, we share and reflect upon our experiences to encourage faculty to establish collaborative partnerships with UTAs. In doing so, we extend scholarship from multiple disciplines that documents the value in creating meaningful work for UTAs (Ahmed & Blankenship, 2019; Karpenko &

Schauz, 2017; Kinkead et al., 2019). Kinkead et al. (2019) argues that providing meaningful work for UTAs is a best practice for undergraduate teaching assistant programs. Further, scholarship illustrates that meaningful work allows UTAs to bring their creativity, problem-solving abilities, and expertise as undergraduate students into the role. Karpenko and Schauz (2017), for example, draw from their own experience in a faculty–UTA partnership to argue that "embracing students as partners in our classrooms [creates a] dynamic space that encourage[s] content-level engagement and professional development" (p. 125). Building from this scholarship, we argue that the practice of designing curriculum collaboratively is meaningful work that is well suited to teaching in uncertain times because it facilitates imaginative thinking—a practice necessary for making challenging pedagogical decisions.

In this chapter, we illustrate how conceptualizing faculty-UTA partnerships as context for learning, rather than a method for accomplishing teaching tasks, creates a context for faculty members and UTAs to learn from and with each other. We begin by offering background information on the formation of our partnership and further defining our practice of collaborative curriculum design. Then, we share a reflective dialogue that we composed to learn from our experience of designing curriculum collaboratively. Drawing from the insights we reach in the dialogue, we ultimately offer recommendations for faculty members who would like to practice designing curriculum collaboratively with UTAs.

Designing Curriculum Collaboratively

The partnership began when Jessica Rivera-Mueller, an assistant professor of English, invited Kresten Erickson, her former student in her Teaching Young Adult Literature course to become a UTA in that course the following semester. During our first meeting, we reflected upon the prior semester and discussed possible structures for our collaboration. Considering our strengths and interests, as well as ways the course could be improved, we brainstormed a range of possible structures. At the end of our conversation, we agreed to meet for one hour each week to discuss our observations from the class meetings and plan upcoming lessons, as well as discuss and develop the materials that would support these lessons.

For us, the practice of designing curriculum collaboratively is the practice of dialoguing about the ways teachers can create opportunities for a movement of thinking. This conception of designing curriculum collaboratively is rooted in an aesthetic understanding of curriculum. Macintyre Latta (2013) articulates this theoretical perspective in the following way:

> Curriculum is understood as genuine inquiry into what is worth knowing, rather than simply a curricular document. It importantly assumes that within the inquiry process lives a worthwhile direction, a medium for teaching and learning that asks teachers and students to participate through adapting, changing, building, and creating meaning together. This is the nature of curriculum as aesthetic inquiry. Curriculum is then restored to its etymological roots of currere, invested in prompting, sustaining, and nurturing a movement of thinking. (p. 2)

From this theoretical perspective, curriculum is not a product that teachers can make and deliver to students. Instead, curriculum is a meaning-making process that involves teachers and students. This process attends to how our past, present, and anticipated future experiences shape how we understand course concepts. Macintyre Latta (2013) explains that educators engaging in this process "conceive curriculum as a continuous reconstructing movement of thinking" (p. 47). This movement of thinking is created individually and collectively. Subject matter, therefore, is not "fixed, certain, [nor] separate from students' experiences" (Macintyre Latta, 2013, p. 47). Accordingly, our goal was to create experiences that would nurture this educative process.

Envisioning curriculum as an experience that creates a movement of thinking is aligned with the nature of teacher education and this course. Teaching Young Adult Literature is a course that aims to help future middle school and high school English teachers understand who they hope to become as literature teachers and participate in the profession's conversations about teaching young adult literature. The course combines the content knowledge students have gained in their English coursework with pedagogical theory, enabling them to cultivate theoretically robust teaching practices. Through the process of reading and discussing a wide range of diverse young adult literature, students explore trends and issues in the field and various approaches for interpreting, analyzing, and teaching young adult literature. Students also examine scholarship about reading and teaching to contextualize, understand, and problematize their own theories and experiences. Our partnership, then, focused on dialoguing about the ways we could help our students make and remake their understandings of the purposes and practices for teaching young adult literature.

Our collaboration prompted us to create a literature discussion assignment. We created this assignment to complement the co-teaching demonstrations in which teams of students practiced delivering lessons based upon young adult literature. Paired together, the literature discussions and the co-teaching demonstrations invited students to consider young adult literature as readers and teachers. Drawing from Buehler (2016), who argues that "[a] text can be more or less complex based on what a reader brings to it or what a reader discovers or sees" (p. 29), we prompted students to pay attention to how their own engagement with literature shapes their ability to teach literature. Accordingly, we asked students to prepare for our discussion by identifying one aspect of the text that they found thought-provoking as readers, including aspects such as themes, figurative language, and characterization.

When we launched this experience in our face-to-face context, we created distinct roles for ourselves that supported our overall pedagogical goals: Kresten facilitated the discussion and Jessica took notes from the conversation. After class, Jessica used these notes to create "essential learning questions" (Wiggins & McTighe, 2005), ideas that students could use to create instructional units in the future. Jessica posted these on Canvas, an online learning platform, so students could use these questions as a resource in their future work as teachers. In this process, both roles were integral to the learning experience. Kresten created thought-

provoking questions to prompt and guide students through a discussion of their experiences as readers, and Jessica translated those ideas into a teaching resource.

Reflecting Upon our Practice

We were pleased with our design of the literature discussion assignment, but the learning experience needed to shift when we transitioned to a remote learning context. While we made quick decisions in the spring, we wanted to learn more about the ways our partnership and our efforts to design curriculum collaboratively supported our goals as teachers and our professional learning. In this section, we share a written dialogue that we composed to reflect upon our experiences of designing curriculum collaboratively. Throughout the dialogue, we focus primarily on our efforts to (re)create the literature discussions, but we also discuss broader questions that we believed were important to explore. We invite readers to read our conversation and reflect upon their own experiences in faculty–UTA partnerships.

We begin our dialogue by reflecting upon the prior knowledge and experiences that shaped how we approached our partnership.

Kresten Erickson (KE): Before working with you, Dr. Rivera-Mueller, I'd had just one opportunity to be an undergraduate teaching fellow (UTF) at Utah State. In that experience, my role was to take care of the teacher's busywork; I did not play a role in planning or delivering instruction. While I still benefited from the experience overall, it did not provide me with any opportunities to develop my teaching skills. Almost a year later, you approached me to be the UTF for your Teaching Young Adult Literature course, and I accepted, imagining my role would be similar to my previous experience: I would take care of your busywork, answer students' questions, and otherwise be a silent observer of your classroom.

However, in our first meeting before the semester started, you made it clear that our work in the classroom would be collaborative. You said you considered me a co-teacher for the course, and you encouraged me to share my own ideas about how I could contribute to class learning. This idea was tricky for me to wrap my head around; I expected to be told what to do and then stick to that for the entire semester. It took time for me to shift into a collaborative and creative mindset that empowered me to contribute ideas that would benefit the course and the students.

We decided to hold hour-long weekly meetings to discuss the course, my role as a UTF, and our thoughts on the class' progress. Despite my initial discomfort in being asked to fill an unfamiliar role, the experience became increasingly enriching as the semester progressed. Our weekly conversations were especially beneficial for me since I had the chance to discuss classroom practices and pedagogical philosophy with an experienced educator. These meetings helped me mold my own educational philosophy. I became more comfortable with my role as a co-teacher, and I felt more confident in preparing instruction for the class.

Jessica Rivera-Mueller (JRM):   Kresten, I really appreciate your comments about how it took time for you to feel comfortable in a collaborative role. This idea is really important for me to remember. It reminds me of a lesson that I had to learn early in my teaching career: It takes time to build trust and community. When I began teaching, I expected my students to trust my goodwill and judgment. I expected them to believe automatically that I would be their advocate in learning. But, of course, they needed to get to know me first. I learned quickly that relationship-building needed to become central to my work as a teacher. I realize that this lesson comes from another context, but it feels similar because I am early in my process of learning how to become a faculty mentor in the UTF program. It's good for me to be reminded of the seemingly obvious; we are always bringing our prior experiences into new teaching/learning contexts.

Prior to this experience, I had only mentored one other UTF. In that experience, the student requested an opportunity to work with me. It was a great experience, and it showed me some of the possibilities for designing a UTF experience. Because her goals and ideas contributed to the class design, I approached this experience with an open mind. I wanted your goals for learning and experiences to shape our partnership. In fact, this was the reason why I approached you for the experience. You had demonstrated excellence in my class the prior semester, and I trusted you as a learner. Because I wanted the UTF experience to be co-designed, I hoped you would accept my invitation. I would only invite students that I could trust to engage as a co-designer.

As a learner, I love collaboration and seek it out. While I recognize that faculty members and UTFs have different responsibilities and expertise, I seek to learn from the experiences and perspectives of undergraduate students. I believe my positive experiences with faculty mentors in my own undergraduate and graduate education have been instrumental in shaping my views and approach. As an undergraduate student, I had an unofficial faculty mentor who invited me to participate in summer courses with practicing teachers and other grant-funded experiences. In these moments, my knowledge was taken seriously and contributed to the knowledge of the group. I never forgot what it felt like to be treated as a colleague—even when I had less experience than the practicing teachers. In a similar way, my dissertation chair was an outstanding model of mentorship. It was difficult for me to feel the hierarchy of the academy when I returned to graduate school for my PhD. I had been working as a full-time high school English teacher, and I had been a leader in my district. It didn't take long for me to feel my lack of influence in my new teaching and learning context. In my work with my dissertation advisor, though, I felt completely different. During my first semester, we worked together on a university-wide program to support writing development for faculty members. I was her assistant, but I was a full intellectual partner. She posed questions to draw out my experience, and that knowledge shaped our goals and approaches for the program. I never felt like a second-class member in our two-person team. I know that it is often common for UTFs to complete busywork. As a teacher educator, though, I feel that is an underutilized experience for the faculty member and the UTF. I have so much to learn from students, and I hope that engaging with UTFs as co-teachers supports their development in the ways I have been supported throughout my education.

KE: Being treated as an equal collaborator, rather than an assistant, made all the difference in developing my confidence to fully contribute to our collaboration. My label as a co-teacher for this UTF experience felt meaningful; you treated me like I was important to the class' success, even after the COVID-19 shutdowns. I felt trusted to contribute ideas to the development of the course, and I felt trusted with the instructional duties I was given. To be honest, this is one of the first times that I have been treated this way in a classroom. During my time as a UTF for this course I feel I made some of my largest strides toward developing my identity as an educator.

JRM: I'm so happy to hear those thoughts, Kresten! I obviously care about your growth as a teacher, too. In this conversation, I think it would be good for us to recall how and why we initially created the literature discussions. I'm happy to share my thoughts first.

For me, Teaching Young Adult Literature is a course that always challenges me to balance the work of helping students develop pedagogical beliefs and practices and helping students engage literature as readers. I emphasize the pedagogical pieces of the course most because the class is one of the four required methods courses for our English education majors and minors. I know it's important, though, for students to engage young adult literature as readers, especially for students who have little experience reading young adult literature and/or negative views of young adult literature. When you expressed interest in helping students grow as readers, I was thrilled. I know that this aspect was underdeveloped in the iteration of the course you took the prior semester. Honestly, I have trouble judging what might seem like too much or too little emphasis on engagement with the literature. In this way, I relied heavily on your expertise as a student.

I remember meeting multiple times to discuss the development of this assignment. Through conversation we were able to design the purpose and goals of the assignment, as well as our roles in supporting the assignment. Together we decided that the assignment would be an opportunity to focus on finding the complexity in the texts—a central idea from one of the key scholars that we read in the course. In this way, this assignment offered practice with one of the course's key concepts. For me, this seemed to bridge the split that sometimes emerges in my mind between time spent on teaching discussions and time spent on literature discussions. I'm pretty you pointed us to this concept in the course reading, which underscored the assignment's importance. I was thrilled when we arrived at this moment in the design process. At that point, you created the handout to explain the assignment, which synthesized and expanded upon the ideas we had discussed together.

KE: Dr. Rivera-Mueller, like you mentioned, during my experience as a student in the Teaching Young Adult Literature course, we emphasized the pedagogical importance of the texts we studied and focused less on the literary merits of the texts themselves. While this emphasis fit the focus of the course, as a reader I wanted to talk about each of these texts just a little bit more. I wanted to discuss their key characters, unexpected endings, symbolism, and expressive language. However, this type of discussion wasn't built into the course.

I struggled at first when you and I discussed possible teaching responsibilities I could take charge of in the course. I remember that you wanted me to play a role in designing instructional activities, not just leading them. Frankly, I was expecting to be told what to do; that was what I was used to as a UTF and as a student. I struggled to come up with any ideas of how I could contribute to the class. However, as the weeks in the semester went by, I began to feel more confident and comfortable in my new role. As our weekly conversations continued, you and I talked about how I always wished we could spend a little more time discussing the texts we read in class, not just from an educator's perspective, but as readers. We both felt like spending time discussing young adult literature fit well with the overall goals of the course; one of our purposes was to help students appreciate young adult literature as a genre. So, we created the literature discussion assignment, and we decided that I would lead the discussion over each young adult text we studied in class.

You gave me the responsibility to develop and lead the discussion for each text we studied in class, and you gave me a lot of freedom to lead them in whatever way I felt was best. We talked about the discussions in our weekly meetings, both before and after each discussion took place. I appreciated your feedback during the entire process. Your suggestions were helpful in making me feel more confident for the upcoming discussion.

I decided I wanted our class literature discussions to be conversational and firmly rooted in the text we had just finished reading. I designed questions that would help keep the discussion focused on those goals, but I also planned plenty of flexibility in the discussion to allow it to develop to the class' interest. I wanted these discussions to provide an opportunity for students in the class to talk about the parts of the texts that were most interesting to them. We hoped that these discussions would be fun for the students—after all, we all likely wanted to become English teachers because we enjoyed talking about literature—and that they would also become meaningful resources to the students in their future teaching. Most of all, I hoped these discussions would provide students with a greater appreciation of the young adult literature texts we studied in class.

JRM: Yes. I appreciated this emphasis on gaining a greater appreciation of the texts. I also appreciated all the work you did to prepare for each literature discussion. While our assignment prompt provided open-ended questions, you prepared more pointed and detailed questions that were designed for each text. I believe we were able to reach deeper insights into the texts due to a balance between the open-ended nature of our prompt and the more pointed questions that you brought to facilitate the conversation. Your teaching enacted the idea that really good conversation takes deep preparation.

I think we saw the strength of this approach during our first literature discussion. Because I wanted to integrate more student choice into our text selection, students signed up for their teaching demonstrations according to dates. Consequently, the short story co-teaching team signed up to deliver the first teaching demonstration. Normally, the short story group shares their teaching demonstration at the end of the semester because they are the only team also responsible for selecting their text. This group had selected a text

that was provocative for multiple reasons. While I approved the text and coached the team through their planning process, I did not know how the students in our class would respond to the text. Our literature discussion, then, was our opportunity to hear these thoughts. I felt nervous for you and the group that had selected this text. In some ways, I felt guilty that I wasn't leading the first discussion, especially as I anticipated potential conflict. But I trusted you and the approach we had designed together. Because of your balance between open-ended and pointed questions, the class was able to learn from each other and see the text's potential—even as it presented problems for some readers. This discussion was so thought provoking, in fact, that students continued the conversation long after the class ended. It was clear that students needed a space to talk about the texts and the teaching of texts. So how do you feel the assignment was working prior to the transition to online learning?

KE: I immediately realized that leading insightful discussions about literature was not quite as straightforward as I thought. Like you mentioned, I was really happy with the class engagement in our first discussion. The students in the class had a lot to say about what we had read, and I was grateful for their willingness to participate. After that first experience, you and I had a great conversation about what went well, and I brought up some of the things I would like to make better for the next one. You were very encouraging about the turnout of the first discussion, and I felt like I had your complete trust and support in trying out my ideas.

After my first discussion facilitation, I was pleased with the students' responses to my questions; I thought my questions were insightful and open-ended enough to prompt a meaningful discussion. However, I felt like the sequence in which I presented my questions somewhat limited the progression of our discussion. With the second literature discussion, I made a specific point to make sure that there was a logical progression in the order I presented my questions. I resisted that approach with the first discussion because I didn't want my expectations of where I thought the discussion would go to hold the class back from what they wanted to talk about. However, I realized the benefit of having a linear outline going into the discussion, and I promised myself that I would give it up quickly if the class drifted to different and more interesting topics.

The second text we read did not prompt the same level of response as the first short story we read. For that reason, I didn't feel like the conversation had the same energy as the first, but I felt like we were still able to have a thought-provoking discussion about the young adult literature we were reading. For our third discussion—which turned out to be our final one in class—I decided to take a more casual approach that focused on students' positive reactions to our reading. I felt like this approach more appropriately fit the text we were reading, and the student response was positive as well.

JRM: Wow, Kresten! It's so strange to remember that we only held three face-to-face discussions. It seems like we engaged with that assignment so many more times. Even now, thinking before and after March is a strange experience for me. Anyway, I feel like the questions were working well, and I was easily able to formulate essential learning questions from what I heard students saying. As we continued in this process, I came to a greater appreciation for the collaborative nature of this process. I think that creating the essential learning

questions gave the conversation more purpose; students knew that we were creating something that they could use in the future. Having two teachers in the room allowed us to perform two distinct pedagogical tasks. You were able to listen closely to the students and draw out more experiences and perspectives. I was able to listen closely for a different purpose—connecting students' ideas to potential teaching possibilities. As we continued to engage in the literature discussions, in other words, I feel like I became more aware of my role in those conversations, thereby listening more deeply to students' responses.

KE: I did appreciate being able to focus all my energy on the class' conversations. I think if I had also had to create essential learning questions while I was facilitating the discussion, I would have been less effective at both tasks. I appreciate you trusting me with the role that put me in front of the class, directly working with the students. It probably would have been a lot simpler for you to lead the discussions and then put me in charge of developing the essential learning questions. However, I am grateful that you placed me in a position that allowed me more personal growth as a teacher. Because of how we changed responsibilities following the university's COVD-19 shutdowns, I had plenty of time to practice developing essential learning questions, just in a context none of us could have anticipated.

JRM: Yes! We ended up flopping roles, sort of. My overall goal in our transition was to preserve as much of the course's work toward our initial learning goals and let go of anything that could be removed, making the course manageable for students. This was a hard shift, one that I had to grieve. I felt like I had to let go of many expectations. I clearly remember chatting with several colleagues on our last day on campus to brainstorm ideas for reconfiguring the course. Early in the day, I planned small changes that I thought could preserve most of the course. By the end of the day and after multiple conversations, I became convinced that I needed to make the class an asynchronous online course. I realized that I wanted to make the class manageable and accessible, considering all the different circumstances our students were facing (e.g., moving, loss of employment, health concerns, etc.).

Along these lines, I wanted to respect your needs as a learner during this uncertain time. I was pleased when you said that you wanted to continue your role in the course. With this knowledge, I proposed that we move the literature discussion conversation online through Canvas's discussion board feature. In doing so, the questions were narrowed to the following questions: What's worthy of study in this text? Where is the complexity? Identify what you found interesting or compelling. I missed the more pointed questions you brought to class, and our assignment needed to shift in an asynchronous context. During this transition, though, I was thankful that we had co-designed two initial teaching roles: prompting conversation and listening to conversation. I think doing so allowed us to understand the relationship between these two tasks and switch our roles in the middle of the semester. With the transition to an online context, I spent ample time reaching out to students individually to learn about their specific situations and create alternative assignments when necessary. Reimagining our roles allowed me to meet the new demands I faced as a teacher and person experiencing the uncertain time.

KE: The last class I attended on campus for the Spring 2020 semester was Teaching Young Adult Literature, on Thursday, March 12th. That same day, when Utah State announced their transition to online learning, everything became uncertain for me. I didn't know what my own coursework would look like. I didn't know if we would be back on campus at some point during the semester or not, and I was no longer able to work my on-campus job. In all this uncertainty, your communication with me made all the difference. I knew multiple other UTFs at USU who, after the transition to online learning, never heard from their cooperating professor again. I enjoyed our collaboration, and I worried that my opportunity to work with both you and the class was lost because of the pandemic. I wanted to continue in my co-teacher role, but I was worried that I would become a burden rather than a help. However, you supported me in choosing to continue my contribution to the course. My confidence that I could still add meaning to the class' experience was bolstered by you treating me as an important part of the class' learning.

Like you mentioned earlier, it was crucial that we had created this assignment in collaboration. Because of that, I think we both understood what needed to happen in every step to make it most effective. That prepared us well for a reversal of roles as we moved online. You and I discussed ways that I could contribute, and then we decided that my role would still be closely tied to the literature discussion assignments. Instead of initiating the class conversations, I created essential learning questions based on the class' discussion, much like you did before we started online learning. My responsibilities shifted from being a conversation facilitator to being a listener. After the transition to online learning, I read students' discussion posts on Canvas, then created essential learning questions based on my synthesis of all their responses; instead of creating questions in preparation for a discussion, I was creating questions to conclude the discussions students were already having on their own. Because we worked closely in this part of the assignment already, I felt very comfortable switching into this role, and I was grateful that role still felt meaningful.

JRM: Kresten, you also contributed to the class by creating a handout with teaching resources for our young adult texts. You found interviews, TED Talks, and more resources that are great materials for lesson planning. I was eager to share your handouts with our students, and I saved them for my own files, too. In this activity, you contributed wonderful materials that I hope enhanced students' experience in the course. It's difficult to assess all of our choices—the situation was so complex. I know that my use of Canvas was a little clunky, and that's something I've had to really address this year. The students' course evaluation comments, though, expressed regret that we were not able to finish the class as it was initially designed and gratitude for the choices we made in the transition to online learning.

KE: I'm also wondering what we could have done better during this transition. It's difficult to say. From my perspective, the nature of Utah State's initial closure was unclear. For the first couple of weeks, I wasn't sure if we would be returning to in-person classes or not. Since it was during those first couple weeks that we planned my responsibilities for the rest of the semester, I think we did the best that we could with the knowledge that we had. Of all my courses in Spring 2020, I felt that this course handled the transition most

effectively. From my perspective as a UTF, students still received an educational experience that covered all the key concepts that the course was focused on.

Learning From our Dialogue

We believe collaborative partnerships between faculty and UTAs are a valuable way to support student and teacher learning in uncertain times and beyond. By its nature, the practice of designing curriculum collaboratively prompts ongoing dialogue between a faculty member and UTA, and that conversation creates a context for (re)imagining pedagogical roles and practices. Our dialogue demonstrates that our ample and frequent discussions provided a thorough understanding of our assignment's design, and we used that knowledge to redesign our assignment and course in a new and unanticipated teaching context.

To support the practice of designing curriculum collaboratively, we offer two specific recommendations. First, we encourage faculty–UTA partners to engage in ongoing, open-ended conversations about their observations from the classroom, rather than focusing solely on specific pedagogical tasks to complete. While it is important to discuss specific details involved in teaching a course, broad conversations about classroom learning create a context for unexpected surprises. In an open-ended conversation, for example, we brainstormed a way to connect one of our course's key concepts—text complexity—with our goals for the literature discussion assignment. Movement between open-ended and specific teaching conversations creates a context for UTAs to share their perspectives and expertise. Purposefully making time to learn from each other, in other words, can produce wonderful insights.

Second, we recommend that faculty members and UTAs remain flexible when negotiating their pedagogical roles and responsibilities. We have learned that it is acceptable (and even beneficial) to discover these roles and responsibilities throughout the partnership, rather than defining them firmly at the outset of the partnership. Discovering these roles and responsibilities throughout the partnership allows faculty members and UTAs to apply their strengths, passion, and expertise to learning experiences that are created in response to the students in the course. In doing so, though, communication is essential. As our dialogue illustrates, open communication is important for helping UTAs feel confident in contributing to the course. Engaging in explicit and recursive conversations about roles and expectations can help UTAs grow into a co-designer role. Additionally, establishing a pattern of ongoing discussion of roles and responsibilities enables faculty–UTA partnerships to adjust for unexpected circumstances.

Our experiences during the Spring 2020 semester taught us that it is important for faculty members and UTAs to critically examine their notions of what a UTA can bring to their role. Collaboration requires partners to negotiate their understanding of what is possible through the partnership. UTAs may need to stretch themselves to fulfill a collaborative role, and faculty mentors may need to support this growth by remaining mindful of the fact that undergraduate students may have different levels of comfort with moving

into a collaborative role. Faculty mentors may need to critically reflect upon the values, beliefs, and assumptions underlying their conception of a UTA role and offer support to help UTAs reach these expectations and/or negotiate the roles and responsibilities. Our collaboration was shaped by our willingness to (re)imagine a collaborative partnership, and we are grateful to have learned so much from each other as a result. Though UTA programs vary across institutions, we encourage faculty members to find ways to form collaborative partnerships with UTAs. We believe that doing so expands the learning opportunities for students in the course, the UTA, and the faculty mentor.

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"THINGS ARE DIFFERENT NOW" A STUDENT, STAFF, AND FACULTY COURSE DESIGN INSTITUTE COLLABORATION

Maggie Debelius, Susannah McGowan, Aiyanna Maciel, Clare Reid, and Alexa Eason

We, the authors of this chapter, are writing as a partnership of Georgetown undergraduates, graduate students, staff, and faculty. Eason recently earned her undergraduate degree; both Maciel and Reid are graduate students and graduate associates at CNDLS; McGowan is the associate director for curriculum design at CNDLS; and Debelius is a professor of both English and learning, design, and technology as well as the director of faculty initiatives at CNDLS.From March 2020 to the time of writing this, our group met multiple times and in many formats about partnering in this work, what this looks like, and how this has an impact on our institution. We use the first-person plural "we" in this piece to describe our team efforts but switch to "I" to share individual perspectives to achieve a coherent balance between our collective and individual experiences in partnership.

Our Online Pivot

Like other institutions across the world, Georgetown University in Washington, DC switched to remote learning in March 2020 as the COVID-19 pandemic hit the United States. Our Center for New Designs in Learning and Scholarship (CNDLS), which serves as both a center for teaching and learning as well as a center for technology innovation, responded quickly with a series of offerings to prepare and support faculty to teach remotely. Options included a virtual conference on digital pedagogy, a series of cohort-based Course Design Institutes (CDI) throughout the summer where faculty engaged with intertwined principles and best practices from inclusive pedagogy and online course design; and a series of workshops on select teaching topics. As with so many other centers for teaching and learning, we saw a rapid increase in faculty participation as instructors planned for fall 2020 remote courses. We worked with over 1,800 unique faculty through our summer conference, CDIs, and other engagements.

One of the key decisions we made as a center was to engage students in the work of preparing faculty to teach remotely. The decision to collaborate was born out of necessity; we wanted to offer faculty a rich, high-touch

experience but lacked the resources to run offerings with CNDLS staff alone. Our experience echoed the Students as Partners work that Healey et al. (2014) describe as "a relationship in which all involved – students, academics, professional services staff, senior managers, students' unions, and so on – are actively engaged in and stand to gain from the process of learning and working together." They view these partnerships as a process rather than goal, which best describes our own work.

Rather than being an intentionally designed Students as Partners framework, ours was an iterative process that gradually incorporated increasing numbers of students taking on more significant roles over the course of six months. Cook-Sather et al. (2014) identify respect, reciprocity, and responsibility as the three guiding principles of student-faculty partnerships. We propose adding one more "r" to the list: resilience. We mean this not in the sense of resilience to engage in partnerships as has been established in the literature but rather partnership as a form of working that increases resilience to challenging contexts. Not only was our partnership based in respect and mutually beneficial for those involved, but it also reinforced the concepts of shared responsibility and resilience for the faculty with whom we were working. Prototyping and redesigning our training efforts was an exercise in the kind of challenging teaching we were asking faculty to do during the pandemic. Our experience was shaped by experimentation and iteration, which are the same qualities that faculty and students needed as they adapted to the uncertainty, stress, and disruption of remote teaching in the face of a pandemic.

Approaching preparation for the fall through a partnership framework not only enabled us to extend the reach and impact of our CDIs, but also to present realistic, viable options for faculty planning to teach remotely and flexibly. Georgetown did not announce plans to deliver all classes virtually until the end of July, which meant that we spent much of the summer preparing for the unknown. Many faculty expressed concerns about the complexity of adapting their teaching for a remote mode in which meeting learning goals might require them to deliver information synchronously and asynchronously to students across multiple time zones; facilitate discussion in new ways, moderate an online chat, share slides, promote engagement, and more. One described the prospect of teaching in a hyflex classroom as being akin to a gymnast twirling a flaming baton while completing a routine on the uneven bars. It soon became clear that faculty members would need to incorporate the student perspective, possibly looking to students as partners, in new ways in order to navigate and cocreate a new kind of classroom experience.

Theoretical Context

Students as Partners (SaP) scholar Cathy Bovill visited Georgetown in January 2020. She spoke to educational development staff and faculty about her SaP research as well as her emerging work related to relational teaching and the promise of whole-class cocreation. Bovill's (2020) concept of whole-class cocreation occurs when students and faculty co-design an entire class as an inclusive educational activity and high impact practice. Her presentation focused on the need for equitable engagement in SaP work, ensuring that all

students have opportunities to participate. Following her visit, we drafted a proposal to develop a more explicit SaP initiative in our center. While there were examples of SaP work scattered across campus, we identified a need to incorporate students intentionally into the design of learning initiatives based on well-established programs at similar institutions (Cook-Sather et al., 2014; Cook-Sather, 2014; Mercer-Mapstone & Marie, 2019). In March 2020, however, we pivoted our focus from our plans for future SaP initiatives to focus all of our center's efforts toward preparing faculty and staff for the virtual environment transition.

Amidst the uncertainty at that time, we did not lose sight of the inclusion of student voices. Most of our efforts for preparing for summer and fall semesters were immediate, responsive, and context-specific, focused mainly on evidence-based uses of technology to support learning. At the same time, our center led in efforts to gauge student and faculty engagement in the virtual environment through weekly surveys. Through our established relationships with faculty through the years, we understood faculty perspectives of virtual teaching and learning. In order to understand the student experience, however, we realized we needed to look for ways to include their voices responsibly (and nimbly) into the equation as a means to strengthen the virtual experience at the university. As Sasha Mathrani (2020) writes, "partnership is engagement between student and faculty that pushes the boundaries of traditional hierarchies," and never was there a better time than 2020 to look for ways to infuse the "partnership mindset" (Peseta et al., 2020) into our plans and preparation as a benefit to our community.

In retrospect, our efforts to engage students as partners in the massive efforts to sustain instructional continuity were more akin to Mercer-Mapstone's and Marie's (2019) description of SaP that promotes more expansive opportunities for students to partner with faculty and staff: ways of thinking about partners *in* rather than evaluators of teaching, ways of engaging in teaching and learning as something done *with* not *to* students, and ways of working based on respect, reciprocity, and shared responsibility. These SaP values informed our interactions or emerging partnerships with students and faculty in ways that promoted a responsive, agile mindset to a persistently uncertain academic and societal environment.

This chapter affords us the opportunity to look backwards, as Mathrani and Cook-Sather (2020) discuss in thinking about the shape of SaP work,

> Direction emerges from how we combine extending ourselves and being receptive to what comes toward us and how we work around the obstacles we encounter. The growth and change that come through pedagogical partnership are not always apparent at the time, but through reflection, they can be mapped backward, continuing that ever-branching rhizomatic growth.

Our SaP work represented here was an implicit, subliminal response to instructional continuity rather than an intentional one. Mapping backwards to Cathy Bovill's visit, the groundwork for students as partners was emerging in our institution, yet our efforts for instructional continuity compelled us to think in partnership to adapt, to change, and to branch off into multiple forms of support for virtual teaching and learning.

The CNDLS Summer in Context

Influenced by our conversations about SaP, CNDLS designed and delivered programming throughout summer 2020 to prepare faculty for flexible and adaptive remote teaching. We were poised to make such a move because of our 20-year history as a center that integrates teaching and learning, technology innovation, and research. We serve as the university's center for teaching excellence but we also design and support many of the university's online classes. Our combined efforts in these spaces positioned us to respond quickly to the shift to remote teaching. Our staff includes faculty developers, instructional designers, technology specialists, media producers, diversity and inclusion experts, web developers, and graduate assistants. We knew we wouldn't be able to offer the level of support we provide for faculty who teach fully online courses, since the design process for a single course can take up to eight months, but we wanted to draw on our experience in learning design and faculty development to support remote teaching across the university (thus we will continue to refer to Fall 2020 courses as remote rather than fully online).

While we were prepared to work with faculty on issues of teaching, learning, and technology innovation, we faced challenges in scaling up our efforts. We worked with over 1,800 unique faculty members in summer 2020, which is more than three times as many as we had worked with the previous summer.

Table 1
Faculty Participation in CNDLS Programs

Summer 2020	Teaching, Learning, & Innovation Summer Institute	Course Design Institute	Digital Learning Days	Individual Consultations	Unique Faculty Overall
Faculty Participation in CNDLS Programs	907	1,137	279	516	1,856

We began with our annual teaching and learning conference in May before launching a more intensive CDI from May to August followed by digital learning days prior to the start of the Fall semester. Below we discuss each component of the summer work with a focus on how student participation evolved throughout the summer as we worked to adjust and improve our efforts.

Annual Summer Conference and Student Panel

CNDLS has hosted the Teaching, Learning, Innovation Summer Institute (TLISI) for more than 20 years, offering faculty a space to explore the intersection of pedagogy, technology, and practice. Each year, sessions cover topics from inclusive pedagogies to innovative technologies offered by a range of faculty and staff. While

we have always tried to include students in TLISI in the past, the event occurs annually the week after graduation, just after most students have left campus. In 2020, the planning committee pivoted from an in-person conference to a virtual one focused solely on fall planning. This pivot included canceling previously scheduled external keynote speakers and replacing them with two new plenary sessions, one of which was a student panel. Because all programming happened on Zoom, students' physical location no longer prevented them from participating.

At the request of CNDLS, student Alexa Eason agreed to organize and host a student panel. Here is her reflection on the experience:

> At the time, I was a senior in the College studying African American Studies while working at The Hub for Equity and Innovation. I was struggling with what it truly meant to be a Hoya (Georgetown's mascot) when I had to adjust to learning remotely. I was also coming to terms with what it meant to be alive during an unprecedented time where the environment of this country was being impacted by climate change, a global pandemic, racial warfare, and more. I was in my last semester of college trying to maneuver through new and drastic changes not only impacting my daily livelihood but my surroundings as well. My sense of community and camaraderie was stripped away with my dismissal from campus and the Washington, DC area. I returned home to Connecticut to begin learning through a computer screen, while trying to navigate what was going on in the world around me and how that impacts me in the present and my future aspirations. As I soon realized the advantages and disadvantages that this new reality presented for me, it ignited a drive within me that sought to help reimagine and design what a Hoya experience should be from henceforth. Thankfully, I got the opportunity to be the lead moderator of a student panel during TLISI.

> The panel, which we called Cura Personalis in the Cloud, consisted of 8 students from varying years and majors. Cura Personalis is Latin for "care for the individual person;" it's a key institutional value that includes a holistic view of people and emphasizes their individual needs and gifts. As a whole, Georgetown needs to translate their Jesuit Catholic values, in addition to what it means to be a Hoya and the need to care about others, not only within a virtual setting but also in the midst of the pandemic. Each student was asked about aspects of their courses that were effective in maintaining both a sense of community while also retaining student's engagement upon campus. While the student panel's central focus was to hear from students and their shared experiences, it also included small breakout rooms in which faculty and staff could ask the students more specific questions. Students discussed how having professors be flexible, understanding, and provide a balance between work and their social lives, played a role in their engagement with the Georgetown community. Most of the responses focused and delved upon the idea of seeing students more as human, trying to apply a holistic approach, than as simply scholars.

This panel ended up being one of the most highly attended (322 faculty, staff, and students), receiving the most praise of the nearly 20 sessions offered during TLISI. Students and faculty alike commented on the impact and importance of connecting and communicating as they prepared to navigate an uncertain academic environment. The breakout rooms that Eason describes contributed to the sense of reciprocity and shared responsibility that undergirds most SaP work (Marie & McGowan, 2017; Healey et al., 2014) and the concept of *cura personalis* itself. Values of reciprocity and shared responsibility in the panel contributed an early glimpse of dialogue and shared identity as forms of resilience to take into the summer and impending

fall. We chose not to record the panel session to enable open discussion, but we were fortunate to have coauthor, Clare Reid, illustrate what the student panelists said (with their permission):

Figure 1 Panel Illustration From the Graphic Essay "Cura Personalis in the Cloud" by CNDLS Graduate Assistant, Clare Reid

Course Design Institute Curriculum and Format

After the success of the TLISI conference, CNDLS launched the CDI, a series of 3-day institutes for almost every main campus department and program running from May to August. The intent was to give faculty a

deeper dive into remote learning than could be offered in the TLISI conference and a space to begin the hard work of adapting courses and building resilience. Faced with the challenge of preparing so many faculty to teach remotely, we wanted a model that allowed us to reach large numbers while still making room for significant conversations and evidence-based research. We determined four main learning goals for participants:

- Adapt their syllabus and semester plan for remote learning

- Meaningfully integrate technology to give students a rich learning experience

- Adopt intentional teaching practices that focus on engagement, responsiveness, community, inclusivity, and flexibility in an online environment

- Consider what a "signature" Georgetown course looks like online

Participants engaged in 9 hours of synchronous meetings stretched over 3 days, with some additional asynchronous work and one-on-one consultations as needed. We were successful in reaching the majority of our faculty but faced many challenges along the way, including scaling up and building faculty engagement with key pedagogical issues.

Nearly 2,300 Georgetown main campus faculty were encouraged, but not required, to take part in the CDIs. We wanted to deliver not just a series of webinars and workshops but instead a deeper engagement to prepare faculty to be flexible, resilient, and inclusive. We faced the challenge of doing so with fewer than 20 CNDLS full-time staff members available to lead the effort (all of whom were also working on other projects). In addition to our full-time staff, CNDLS employs more than 15 graduate associates (GAs) in part-time positions from a wide variety of degree programs and departments. Our GAs are truly full partners in the work at CNDLS—they manage social media accounts, write for our blog, help to design and run workshops and programs, perform quality assurance and assist with the design of online courses, and manage digital platforms, to name a few. Because of our longstanding partnership with these students, we were eventually able to support a CDI model of gathering approximately 100 faculty per week for morning plenary sessions, after which the faculty dispersed into cohorts of 15–20 people for discussion and hands-on practice. Each cohort was facilitated by a team of one or two CNDLS staff members, a faculty mentor, and a graduate student coordinator. These collaborative teams allowed us to expand our reach to work with a total of 1,137 faculty in 67 small CDI cohorts over the course of the summer. Not only were we able to reach more faculty as a team, but including faculty, staff, and student voices in the planning and delivery of the institute allowed us to get buy-in and examine the complications of remote teaching and learning from diverse perspectives.

Figure 2
Sample CNDLS Course Design Institute Schedule

We were committed to doing more than teach faculty how to use tools like Zoom and Canvas. Like many universities, CNDLS blends technology instruction with conversations about pedagogy. But we also wanted to engage with faculty around our institutional values, inviting them to consider what makes a signature Georgetown experience and how that could happen remotely. Graduate coordinators organized Canvas sites, sent out communications, moderated Zoom sessions and chats, distributed materials, compiled data, and answered questions about online pedagogy. They also played a key role in the design of the institute by keeping the student perspective at the center of the work.

Although the CDI design was intentional and effective, we determined after the first two weeks that we could leverage our synchronous time with faculty to discuss more important themes. As faculty grappled with new technologies, they were less likely to consider pedagogical choices that we considered central to the remote experience. Drawing on the success of the TLISI student panel, we decided to invite student partners to join us as not only cohort coordinators but as panelists and presenters at our plenary sessions. We shifted our design to integrate a panel of both graduate and undergraduate students into every weekly institute to speak about their experiences in the spring and answer questions from the faculty attending that week. Adding students as session speakers, rather than just coordinators, deepened the level of conversation and switched the focus of the CDI from teaching to learning. It became clear that one element of resilience included thoughtful professional development and relationship building during periods of relative calm; establishing a strong foundation and identifying the value of student partnerships meant we were better prepared to adapt when a crisis hit.
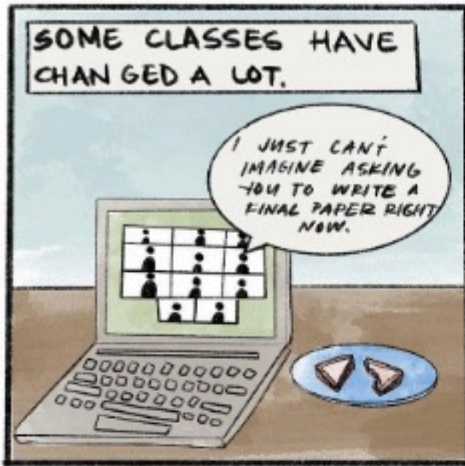
Partnership Perspectives: Presence and Labor

Talking with students about their remote experience rather than talking about them revealed the complexity and diversity of our students' lives during the pandemic as well as their own resilience and commitment to completing their studies. Leveraging the synchronous time as an opportunity to hear from a range of students, ask questions, and make decisions about their courses informed by a learner-centered perspective proved to be an effective, humanistic response to continue in our weekly institutes. One of the most enduring student contributions to these plenary sessions came from Clare Reid, who not only appeared during our weekly plenaries, but also produced a second graphic essay titled, "Things Are Different Now," excerpted below.

NOTES

THINGS ARE DIFFERENT NOW

BY CLARE REID

SOME CLASSES HAVE CHANGED A LOT.

I JUST CAN'T IMAGINE ASKING YOU TO WRITE A FINAL PAPER RIGHT NOW.

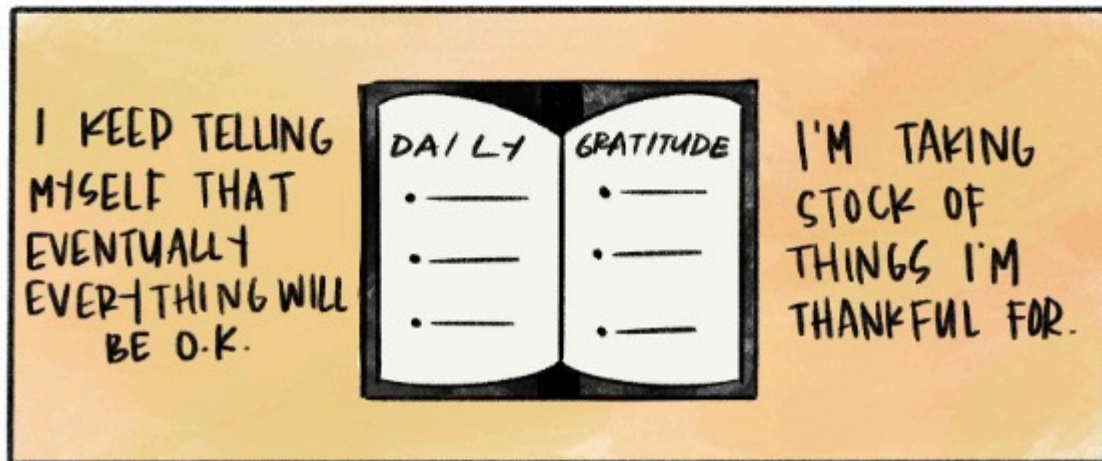OTHERS, NOT SO MUCH.

SO, YOU'LL HAVE 15 PAGES DUE ON THE FIFTH.

ODDLY ENOUGH, BOTH APPROACHES ARE COMFORTING.

ON ONE HAND, IT'S NICE TO ACKNOWLEDGE THAT THE CURRENT SITUATION ISN'T NORMAL.

BUT AT THE SAME TIME, I NEED SOME SENSE OF CONTINUITY — I NEED TO KEEP WORKING — IN ORDER TO FEEL LIKE THE WORLD ISN'T ENDING.

I KEEP TELLING MYSELF THAT EVENTUALLY EVERYTHING WILL BE O.K.

DAILY GRATITUDE

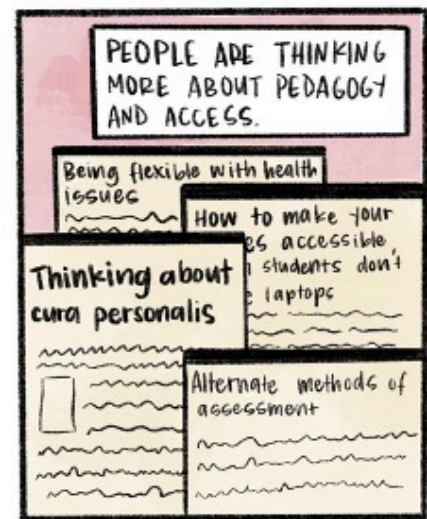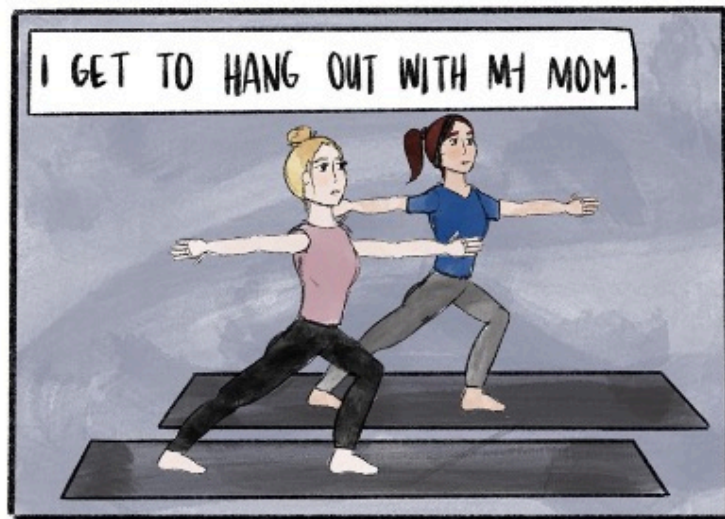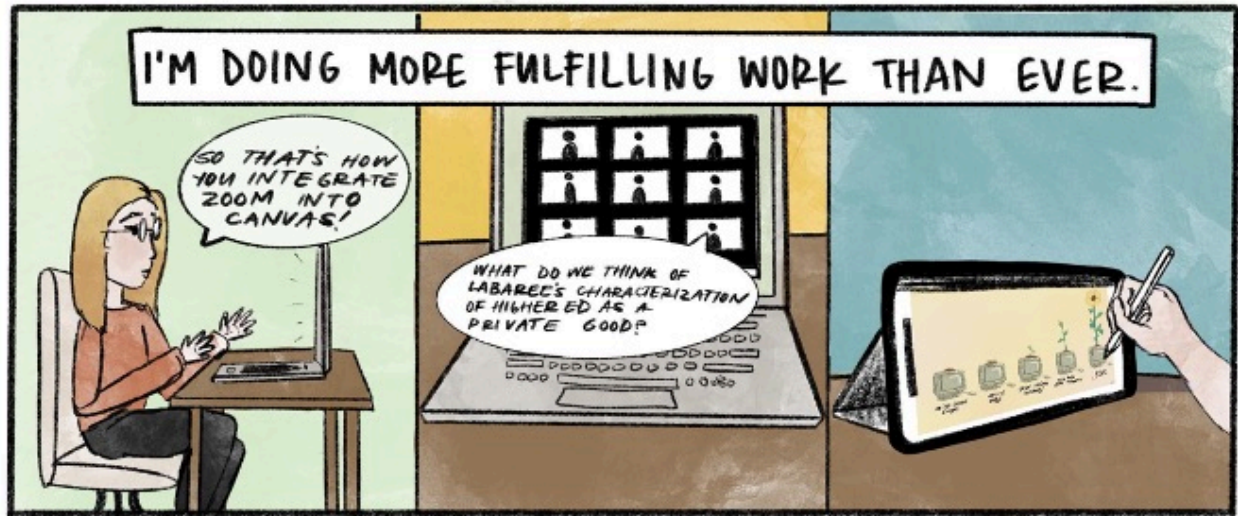I'M TAKING STOCK OF THINGS I'M THANKFUL FOR.

Figure 3 Sample Panels From Clare Reid's Graphic Essay, "Things Are Different Now"

Of course, Reid's story is just her experience; this is not meant to represent the experiences of others facing different conditions. The most powerful aspects of Reid's essay are those that refuse easy answers. Many faculty wanted to know whether it was fair to ask students to complete any graded work in the spring, given the global crisis, while others felt a responsibility to teach and assess the full range of content their students had signed up for. Reid's essay displays the degree to which her professors took differing approaches—and the effect that had on her. The essay also resists the need to pass judgement on remote learning, which she doesn't categorize as better or worse than in-person learning, but instead sees as being "different now."

Reid's presence at the CDI plenary panel sessions allowed her to contextualize her work in important ways, as she does here:

> Over the course of the month of April, I wrote, storyboarded, revised and fully illustrated this essay, entitled "Things Are Different Now," which detailed my transition from living in Washington DC and working and attending classes in person to moving in with my parents in small-town Illinois and working for CNDLS and completing my classes remotely. Specifically, this essay focused on both the personal and emotional experience I had during this transition as well as the pedagogical approaches that allowed me to feel like my coursework, research, and CNDLS work were still meaningful even when rapidly shifted online. I particularly focused on imploring faculty to be flexible but maintain academic rigor, which was a theme we ended up carrying through the summer in our CDIs as a big takeaway for our faculty. Throughout the composition of the essay, I partnered with a full-time CNDLS staff member who helped with revisions and suggested the general direction of the essay. His partnership throughout the process made my work feel less like a novelty and more like a crucial expression of the student and GA experience at Georgetown and CNDLS.
>
> I also find it important to note that I am not a trained artist or graphic designer — in fact, a full-time staff member in the office noticed my doodles and hand-drawn planner pages and asked if I'd be willing to do more of that work. The fact that I was hired to be the assistant to one of our Faculty Initiatives programs and ended up with this and many other illustration projects was the biggest evidence, to me, that people at CNDLS were paying attention to my work and myself as a person, and wanted to showcase my talents — it was the proof that I, as a GA, was a partner with CNDLS staff throughout all aspects of my work. I was also stunned that full-time CNDLS staff members were so enthusiastic about sharing my work, and even more so that my essay would lend its name to this chapter. My inputs as a GA were valued as much as if I had been a full-time staff member, which seems rare for graduate student workers. This is all to further say that at CNDLS I, along with many other GAs, have been treated as true partners and have been given the opportunity, resources, support, and platforms to showcase all of our work.

Unlike a typical semester in which the majority of our students live on campus and eat in dining halls, they were now spread across time zones and juggling responsibilities more complicated than those they might have been facing on campus. In the spirit of *cura personalis*, checking in on students as an integral component of a pedagogical plan became a cornerstone of our CDI approach. Using Reid's vivid personal story as a touchpoint, many faculty adopted ways to reach out more intentionally to their own students to try to understand the contexts and conditions under which they were learning in the form of surveys, emails, reflective writing, and office hour check-ins.

Summer efforts to prepare, convene, guide, and support faculty proved time-intensive for all CNDLS staff, yet we held heightened concerns for our student partners' time. An important aspect of any Students as Partners framework or initiative is ensuring proper compensation for students, either with academic credit or financial compensation. With the exception of our TLISI student panel, all students we partnered with were compensated for their time. Even when compensated, the labor involved in SaP work is significant, especially during a time of global crisis.

Here, graduate associate Aiyanna Maciel reflects on the complexity of her role as a student partner:

Not only was I a frequent panelist during the Thursday "Teach" plenary, but on two different CDI occasions, one in June and one in July, I was asked by institute facilitators to share my student perspective on the Spring semester and hopes for fall more intimately with the weeks' cohorts. Instead of them only getting a snippet of my experience in the plenary session, they were able to engage fully with my story. At the moment I first presented, protests against police brutality had just unfolded across the country, and I found myself concerned both about the COVID-19 pandemic and the parallel pandemic of systemic racism. I was far removed from my hub of Washington DC and sitting out the pandemic in my small town home in Maine, worrying about my Black and brown friends in larger metropolitan areas. I wanted to donate, protest, and do everything I could to support the movement, but hesitated for fear of becoming infected with COVID-19 and passing it to my grandmother. This first time that I presented, I was working with my own program, the Center for Latin American Studies, so I felt that it was important for them to interface directly with one of their graduate students in order to be able to understand the breadth of experiences their students face. I was able to relate to them, speak with them on a personal level, and relate the state of our world to what was going on in Latin America to help contextualize my story.

I was taking a summer course, working almost full-time, and trying to balance being home with family for an extended period of time for the first time since graduating high school. Even so, I recognize that my situation was privileged, to have been able to relocate to my home with my family and my own workspace, to have food on the table, and to have a relatively stable internet connection for my responsibilities. I recounted these complicated struggles to faculty with the hope that they could delve into one experience with empathy and understanding and see similar situations reflected in their incoming students. My experience was only one, but an example of the many ways the pandemic affected students. By having me, a Graduate Associate and full-time Master's candidate, take the lead and encourage dialogue, we, as a CDI team, were modeling to faculty what it may look like to involve students in reflective activities in their courses.

Peer-to-Peer Design

Graduate associates also played a key role in our final CDI offering of the summer: preparing graduate students to teach remotely. As our faculty CDIs came to an end, a need to support incoming teaching assistants arose. During the academic year, CNDLS runs the Apprenticeship in Teaching program designed to help graduate students and other developing teachers in their journey to becoming more skilled and reflective instructors through workshops and teaching-related opportunities that draw on research and pedagogical practices. In order to continue this direct support for Georgetown's future teachers to prepare for the fall, it became necessary to provide an opportunity for teaching assistants to be a part of the CDI training.

Because of the breadth of programs represented in our initial enrollment, the facilitators decided to recruit another set of facilitators and split the group in half. The first set of facilitators worked with the half of the group that was mostly humanities-based programs and social sciences, and the second set of facilitators worked with teaching assistants (TAs) that would be teaching in STEM fields. Just as with the other CDIs, the facilitators and GA coordinators worked together to mold the CDI materials and resources to fit the needs of TAs. A Canvas course contained teaching resources and specific directions on how to use certain tools like

VoiceThread, Panopto, and Hypothes.is, as well as some practice assignments using those tools in order to get them accustomed to what their future students may experience in the virtual classroom. In many ways, this CDI approached the training in the same way as the others directed toward full-time and adjunct faculty. Even as students braced themselves for an unusual semester, the TAs engaged in dialogue around teaching practices in an online environment with the same interest and concern for their students as full-time faculty members. Despite being organized in the same way, it was important to make sure that the TAs, some of whom were first-time teachers, partook in the same guidance into the virtual teaching environment with as much support we could provide.

In addition to TLISI and the CDIs, CNDLS continued to offer faculty support throughout the summer in the form of virtual office hours and digital learning days, a series of August workshops on tools and technologies. Once again CNDLS graduate associates played key roles, helping to staff office hours and moderate workshops. Throughout our summer programming and leading into the fall, our GAs and undergraduate students were a natural fit for the challenges presented by designing and delivering personalized content. This partnership was not forged anew in the transition to online learning—rather, partnership with our GAs is a crucial part of the fabric of all operations at CNDLS. Because partnering with students was already part of the fabric of our work environment, we were able to rise to the challenge of preparing our university to teach remotely.

From Pilot to Program: Instructional Technology Aides for Fall Semester

Even as we focused intensive efforts on preparing faculty to teach remotely, we were also mindful of the staggering impact the pandemic was having on our students, including the financial challenges. Many units on campus turned their attention to the dire issue of students' employment opportunities diminishing due to COVID-19 through loss of internships and jobs. Working with Molly Morrison from Georgetown's Hub for Equity and Innovation and the employment office, Susannah McGowan led a small pilot to offer students enrolled in the federal work study program in high need of employment for summer jobs to support faculty teaching remotely. A core team of 12 students, led by an experienced undergraduate TA, supported 33 courses representing *one third* of all students enrolled in summer session courses. Students supported courses through monitoring Zoom sessions, organizing materials in the course LMS, monitoring student activity in LMS, troubleshooting technology, peer tutoring, and collecting feedback from students about their wellbeing and experience in their courses. Faculty feedback indicated a strong appreciation for the support received in the ability to create a seamless, technological environment enabling faculty to focus on course materials. One faculty member noted, "Just a quick note of thanks for offering the SCA program this past summer session. [SCA] was a huge help to me and the class. Her ability to help organize the Canvas site freed up me [sic] to do

my primary duty – teaching and interacting with the students." Across the faculty feedback there were descriptions of true partnerships in making the courses engaging and investment in connecting with students.

The successful feedback around the summer course assistants convinced administrative leadership to scale up the program as a form of support for the fall semester. The early indications of a successful pilot translated into a plan to scale the program to any interested faculty member who requested additional support. Through CNDLS, the Provost's Office, and the Student Employment Office, and points of contact within each school of the university, a call went out to undergraduate students across the university who were enrolled in federal work study to become instructional technology aides (ITA). The ITAs supported faculty in many of the same ways that the SCAs did over the summer terms through organizing materials and troubleshooting technology on behalf of the faculty member or students. In total, the program hired 150 undergraduate students across each year level. Scaling from 12 students in the summer to 150 for the fall led to unique challenges in working across departments for administrative purposes in addition to providing quality training on the main technologies used.

In order to provide the ITAs with the skills and support they needed to begin their position in the fall, CNDLS incorporated three students from the summer pilot program to be their lead coaches. Alongside Aiyanna Maciel and Susannah McGowan (CNDLS), the lead ITAs led live training sessions from mid-August to late September. The live training sessions had two facilitators to guide recently hired ITAs through their responsibilities in maintaining a virtual environment for the courses they would support. The live sessions allowed for discussion on basic instructions for the course management system, a discussion forum for questions, video testimonials from experienced ITAs, and a detailed outline of where to go and whom to ask for help throughout the semester. With 150 ITAs and 214 participating faculty, feedback indicated initial success in supporting faculty in remote teaching. This program is far from perfect and is in the beginning phases of deciding how we could infuse more elements of partnership, yet this collective, institutional response to remote teaching opens new possibilities for engaging in teaching and learning environments *with* students as an institutional, collaborative approach.

Conclusion

Referring back to Mathrani's and Cook-Sather's (2020) vision of Students as Partners work as multidimensional and demonstrating "un-ending" growth, we experienced Students as Partners as an evolutionary rather than revolutionary process that unfolded as a necessary response to pandemic preparation. Without our initial groundwork in identifying the importance of having students as partners, we would not have been able to pull off the CDIs and other efforts with the same degree of success. We began with a fortuitous, inspirational visit from Cathy Bovill, convened a successful TLISI student panel, relied on graduate students to co-design portions of the CDI, further reinforced by including students as CDI presenters and panelists, pulled in students to staff office hours and workshops, and launched a new

undergraduate instructional technology assistant program to give faculty access to trained student partners in remote classes. Just as we worked to build faculty resilience in the face of the unknown, so likewise we built our own resilience as faculty developers as we developed deeper and more meaningful relationships with student, staff, and faculty colleagues across campus. Our experience suggests that building connections across staff, students, and faculty is also essential to building pedagogical, curricular, and institutional resilience. It has become something of a pandemic cliché to say, "We're all in this together," but it's a cliché that resonated with us in the summer of 2020.

Initial results indicate that our combination of instructional efforts was effective. Student surveys conducted monthly indicate that student engagement increased significantly after the majority of our faculty had participated in our CDIs. As devastating as the effects of the pandemic and racial strife have been on our campus, in our region, and globally, we firmly believe that we have developed a deeper understanding of what it means to teach *with* students rather than teach to them as a result of our instructional continuity efforts. We are at an inflection point in teaching and learning; higher education will never look the same, even after the discovery of vaccines and effective treatments. While many may mourn the loss of the classroom as we once knew it, we also heard time and again from faculty that if and when they do return to the classroom, they will rethink their approach as a result of this experience. As Gärdebo and Wiggberg (2012) argue, "If there is to be a single important structural change during the coming decades, it is the changing role of students who are given more room in defining and contributing to higher education." We saw a glimpse of this future as we prepared for instructional continuity. Rather than dwell on whether the experience of remote learning has been better or worse, we prefer to acknowledge that things are different now.

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