

**Equity by Design and Delivery Model in Online Learning:  
Educator and Student Perceptions and Behaviors as Leading Indicators  
of Systemic Change**

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### **Dedications**

In 1978, my family left the Philippines in search of a better future. Though the journey to the United States was less than a day, making the new land our new home took decades. Such is a story of immigrants. There were sacrifices, losses, and challenges along the way. There was also love, laughter, and hope. While this country is not yet perfect, it makes progress possible. It works to be better and accomplishes much in the process. For these reasons and more, I am grateful to be part of the American journey.

This doctorate is for my first family, my source of inspiration and love: Papa Romie for modeling what matters, listening to my musings, and making me feel that I could accomplish anything; Mama Betty for helping me study as a child, showing me resilience, and letting me roam freely; and to my siblings, Romeo, Romson, Romel, Lizamie, and Romeliz, for loving and believing in me.

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### **Abstract**

The purpose of this study is to explore educator and student perceptions of and behaviors in the Equity by Design and Delivery (EDD) model and its online courses as leading indicators of systemic change. The EDD model is a pilot intervention to eliminate opportunity to learn gaps at the program level in a mid-sized northwestern college in the United States. It shifts instructional behavior from individual efforts to collective approaches to limit quality variances in online courses, theorized to be a major contributor of missed opportunities to learn at high levels, by developing and delivering reliable quality courses based on collective agreements to apply evidence-based practices. It improves course and credentialing outcomes (e.g., course grades, course and degree completion rates) as it eliminates significant outcome disparities between student groups in programs with a strong online learning presence. It uses systems theory, improvement and implementation sciences, as well as principles of adaptive leadership as an operational framework to increase the likely efficacy of the EDD model. A convergent mixed methods of a single-site case study research design is used. It collects primary and secondary quantitative and qualitative data to conduct a comprehensive analysis of and findings from the pilot. It ends with recommendations for implementation at scale and scholar-practitioner reflections of practice.

*Keywords:* collaborative online teaching, disparate online outcomes, equitable online design, equitable online learning, online learning systems, quality online education

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## **Chapter 1. Structural Problem: Persistent Outcome Gaps in Online Learning**

An important function of almost every system is to ensure its own perpetuation.

~ Donella H. Meadows

Forty percent of undergraduates in the United States enroll in community colleges (Community College Research Center [CCRC], n.d.). More and more seek online options to balance life, work, and school demands (Choy, 2002; Jaggars, 2014; Ortagus, 2017). While course and degree completion rates are increasing (ATD, 2019; ATD, n.d.c), they continue to differ significantly where White students complete at considerably higher rates than Black and Hispanic students (CCRC, n.d.; Johnson & Mejia, 2014). Moreover, the gaps between student groups continue to widen (Witham et al., 2015). This problem persists despite wholesale strategic efforts to counter them at the institution and program levels (Malcom-Piqueux & Bensimon, 2017; Bailey et al., 2015). What explains the persistence of outcome disparities between student groups? What can be done to improve student outcomes, especially in online learning where gaps are larger (Jaggars et al., 2013; Xu & Jaggars, 2011a)?

### **Explanations and Responses to a Systemic Problem**

There is much literature on the nature of online learning (e.g., Moore, 2019; Cleveland-Innes, 2019), the existence of disparities in student outcomes (e.g., Figlio et al., 2013; Kaupp, 2012; Xu & Jaggars, 2011a, Xu & Jaggars, 2011b), frameworks to assure quality (e.g., Online Learning Consortium, n.d.; Quality Matters, n.d.a; Tam, 2014), and strategies to improve online learning and teaching (e.g., Crow et al., 2019; Jaggars & Xu, 2015; Swan, 2001). Most of these examined variables relate to online learning linearly, linking probable cause to probable effect (e.g., Muilenburg & Berge, 2005; Regmi & Jones, 2020). For example, several studies explored confidence as an online learner (e.g., Muilenburg & Berge, 2005) or perceptions of efficacy as an

online teacher (e.g., Conceição, 2006; Fish & Gill, 2009) to success in online learning. Johnson et al. (2015) examined the role of best practices in online instruction in online pass rates. There is also growing research, articles, blogs, and other discussions about how access to high-speed Internet and technological devices (e.g., Galanek et al., 2019; Hamilton, 2020; Schaffhauser, 2017) affect access to and success in distance education.

Adding to the discussion are critical theorists who reference macroeconomic and cultural forces (e.g., racism, poverty, sexism) as impacting learning in general (Zamudio et al., 2011; Abes et al., 2012) and online learning by extension. Frameworks such as the Equity by Design's Five Principles by the Center for Urban Education (CUE) at the University of Southern California urge reformers to "acknowledge and foreground the policies and practices contributing to disparities in educational achievement" and to refrain from blaming students from structural problems (Center for Urban Education [CUE], n.d., para. 1). Specifically, principle four of CUE's framework posits that while disaggregating data is important in identifying and prioritizing problems, how practitioners interpret the data is more critical than collecting the data. It asks, do the educators blame the students for systemic problems?

A systemic orientation to addressing outcome disparities drive system stakeholders (e.g., ATD Network, policymakers, community leaders) to increase wrap-around, non-instructional student services (e.g., advising, counseling, tutoring, socialization groups, child care, transportation, financial aid) to engender a sense of belonging and connectedness to the institution (McMillan & Chavis, 1986; Strayhorn, 2012; Tinto, 1997) and promote academic success (Karp, 2011; Karp et al., 2008; Karp et al., 2010). Other efforts to address problems of learning, inclusive of those online, include professional development (Shahid & Azhar, 2014; Vrasidas & Zembylas, 2004; Weaver et al., 2008) and promotion of professional learning

communities to increase collaborative inquiry (Carnegie Foundation for the Advancement of Teaching, 2008). Few initiatives, however, penetrate the instructional core where teaching and learning occur.

Missing in the literature is a conceptual narrative to explain how systemic structures in instructional design and delivery create variances in the quality of educational experiences and how these variances disproportionately and negatively impact the most vulnerable of students. Few explore how faculty and student perceptions about structures intended for systemic change signal intervention efficacy. In the absence of a systemic explanation, stakeholders risk applying solutions today that become tomorrow's problems (Meadows, 2008; Senge, 2006). They risk spending more on solutions that have not worked and will never produce socially significant outcomes (Fixsen et al., 2019). Lacking a holistic perspective to interrogate current orientation to solve systemic problems, stakeholders may push harder to invest more in familiar solutions or press on with the "what we need here is a bigger hammer" approach, maintaining counterproductive illusions about effective teaching and learning.

Case in point, the 2020 COVID-19 pandemic's wholesale shift to online instruction has exposed the myths of online education. System leaders previously touted online benefits as increasing access to the masses, strengthening the competitiveness of community colleges against for-profit competitors, and advancing technological literacy of its students (Cox, 2005). The reality in practice is far more complicated. Even as administrators herald the democratizing promise of online learning and the need to remain competitive in the marketplace of educational choices, instructors find themselves lacking the time, training, and appropriate resources to respond with instructional or technological confidence. For better or worse, the pandemic reveals a disconnect between rhetoric and reality. With the sudden shift from face-to-face (F2F)

instruction to online learning during the nationwide shutdown, higher education leaders fear widening disparities as a result (Glatter, 2020). To boot, the pandemic has also affirmed that economic downturns affect the U.S. unevenly, with the most significant impacts on the most vulnerable groups, among them those without a college degree, those in poverty, and those who have faced prejudice and discrimination (Carnevale, 2020). With growing attention on societal inequities – with their impact on individuals, communities, and the economy, system stakeholders (e.g., policymakers, educators, and community leaders) reorient their efforts to increase credentialing completion rates and end disparate outcomes (Carnevale, 2020; Malcolm-Piqueux, 2017). While there are improvements in completion with more to go, significant disparities remain. What is the limiting condition to success?

### **Hypothesis**

After conducting a literature review to establish foundational knowledge and drawing from my professional practice and observations of how aspects of the higher education system behave to ground theory, I developed a hypothesis using system theory to explain the persistence of outcome gaps. System stakeholders are committed to improving student learning, often with heartfelt intentions and vast commitments of public dollars to end systemic barriers to student success. Yet, their efforts conflict with the very goal they all seek. Far beneath the visible metrics of academic achievement is a belief that instruction should be maintained as an independent practice. While instructional autonomy may stem from the days where lone teachers taught various-aged students in one-room schoolhouses separated from the community (Lortie, 2002), today this hands-off approach in higher education is largely perceived as the right of academic freedom, where faculty individually or collectively determine curriculum, content, teaching, and research without outside interference (AFT, n.d. para. 1). The current practice, however, is far

from being collaborative in nature. To be clear, the right of academic freedom does not mean “anything goes” (AFT, n.d., para. 3). Yet, its all-encompassing coverage to right of curriculum development and delivery leaves little for institutional discussion, examination, or support. I posit, however, that such a posture leaves individual faculty members to do the heavy lifting of systemic change – an untenable and exhausting proposition. Supporting the belief that instruction is solely in the domain of individual instructors are structures that perpetuate this long-held status quo.

These structures create patterns of behavior that cause significant variance in the quality of educational experiences. For example, Johnson et al. (2015) found that the “[d]esign and delivery of online education in California’s community colleges is idiosyncratic, depending primarily on the initiative of individual faculty members operating within the constraints and resources of their departments and colleges” (p. 8). As suggested by varying completion rates across sections of the same course in the college of this study (arguably common in higher education system), significant differences in course quality create missed opportunities to learn at high levels. These learning gaps have downstream effects as students struggle to pass progressively more challenging courses in their credentialing pathways. The impact on historically marginalized communities such as students of color and students of low SES are disproportionately negative, affecting their life and intergenerational trajectories as they and their families struggle to attain social mobility.

While there is scholarship that recognizes how historically disenfranchised students are disproportionately impacted by systemic structures, few directly discuss the persistence of these disparities as a function of an educational system without widely practiced standards in instructional design and delivery. Few explore how highly individualized instruction within a

department, its programs, or where courses are operationally linked (e.g., prerequisites and sequence of required courses) relate to serial missed opportunities to learn and how they result in systemic and persistent outcome disparities. A notable relative to this topic is one made by researchers such as Jennifer Gore (2021). She brought attention to the importance of having standards for teacher education programs in elementary and secondary schools and where the beneficiaries are children from historically marginalized communities. Such discussion is remarkably absent in higher education, where instructors are hired as subject matter experts (SMEs), not as pedagogical authorities (Halupa, 2019). Faculty are aware of this discrepancy, many working diligently to develop their teaching skills over time. However, their individualized and siloed efforts do little to eliminate systemwide variance in quality or disparity in student outcomes.

I further hypothesize that these variances are avoidable with the application of known and proven methodologies used in other fields to increase the reliability of quality, limit significant variance in performance, and consistently result in intended outcomes. Yet, improving system performance is not solely a technical fix of implementing known solutions to known problems (Heifetz, 1994). There are adaptive behaviors to instill, “developing the organizational and cultural capacity to meet problems successfully according to our values and purposes” (Heifetz, 1994, p. 3).

### **Summary of Pilot Intervention**

As a response to the structural problem of persistent outcome disparities, I developed the Equity by Design and Delivery (EDD) theory of change (ToC) based on a literature review and observations from my professional practice. I created the unified systems change (USC) framework made of systems theory (Meadows, 2008; Senge, 2006), the sciences of improvement

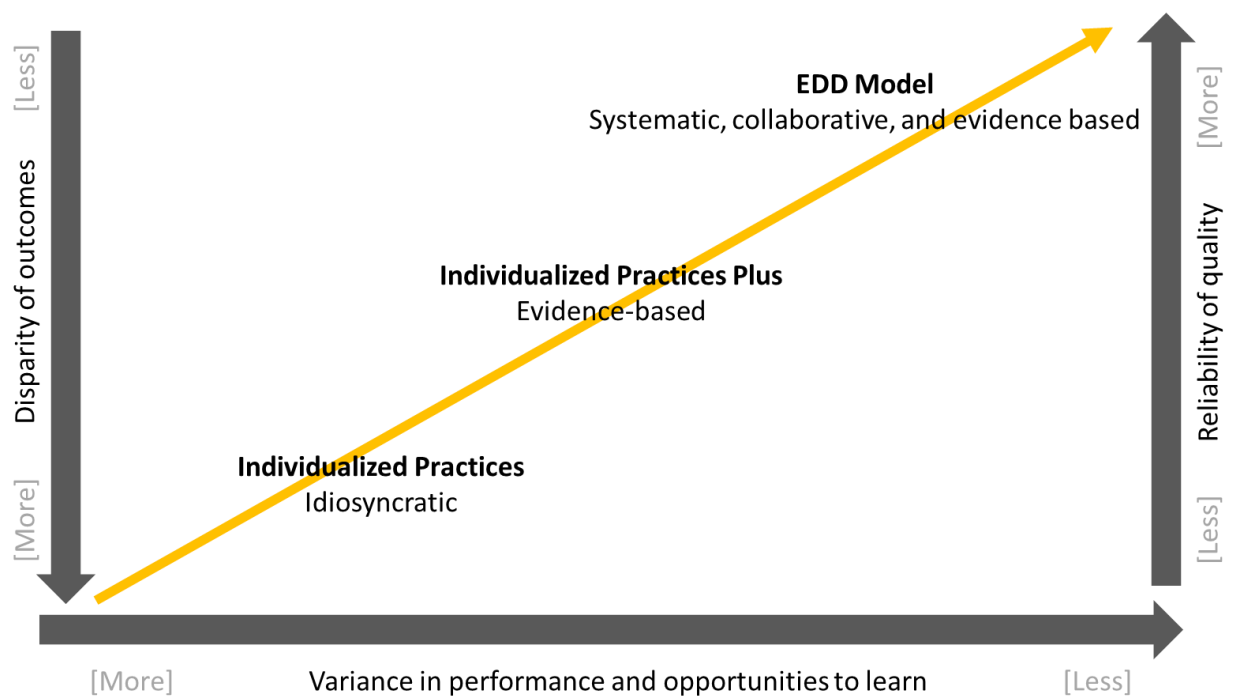
(Bryk et al., 2016; Crow et al., 2019) and implementation (Fixsen et al., 2019), and principles of adaptive leadership (Heifetz, 1994) to explain structural problems in online learning, increase completion rates, and eliminate significant disparities in student outcomes. The EDD-ToC has three parts to address the structural problem systemically. The EDD theory of action (ToA), or the *why*, explains the structural relationships between problems of learning and problems of instructional and institutional practice. The EDD framework, or the *what*, presents technical and adaptive solutions. It organizes principles and benchmarks to reorient isolated, fragmented, or non-evidence-approaches to collective, evidence-based practices that leverage institutional resources. The EDD model, or the *how*, operationalizes the framework, installs new structures, and shifts behavioral patterns to create and deliver reliable quality courses no matter who teaches and learns. The model shifts the burden from the shoulders of individual instructors to eliminate historic and systemic barriers to learning and onto a system of high-leverage supports, methods, and processes. While the model benefits all faculty, it has particular advantages for part-time faculty, representing over half of the instructor contingent in colleges (Hussar et al., 2020). The EDD model offers adjuncts time-saving and stress-reducing support structures so that they can focus on teaching content. The model applies improvement and implementation sciences and adaptive leadership principles to increase the likelihood of efficacy at the program level.

An organizing principle within the EDD model is that operational methodologies that effectively reduce quality variance in many fields (e.g., healthcare, business, and law) and increase the reliability of intended outcomes would also effectively work in education. It recognizes that idiosyncratic and individualized approaches create harmful variances in performance, which result in undesired results. The EDD model's systematic, coordinated, and collaborative methods are levers to create reliable quality courses within a program or

educational pathway. They reduce variance in instructional design and delivery and significantly decrease missed opportunities to learn at high levels. The EDD model's integrated approach increases completion rates and significantly decreases disparities in student outcomes. See Figure 1 for a graphical illustration of the interplays among reliability of quality, variance in performance, and differences in outcomes by individualized practices and the EDD model. An extensive discussion of the EDD-ToC and its applications is in chapter two.

### Figure 1

*Relationship Among Reliability of Course Quality, Variance in Performance, and Disparate Student Outcomes by Individualized Practices and the EDD Model*



The development of the EDD model began during my doctoral studies and evolved as a result of my professional duties to develop a new baccalaureate program. This new education unit was designed for non-traditional students who would not otherwise have access to a

bachelor's degree – a credential that good-paying, family-wage jobs increasingly require. The degree was not new, as the state had already authorized nearly a hundred other Bachelor of Applied Science programs in its two-year community and technical college system. The novelty was integrating the EDD model to end learning inequities and increasing completion rates at the program level.

### **Purpose of Study**

In 2019, a community college in a northwestern state in the U.S. piloted the EDD model to disrupt persistent disparities known to exist in the associate levels of a business department while ensuring high completion rates in the newly approved baccalaureate program. I conducted a convergent mixed-methods case study in winter 2021 as my dissertation in practice (DiP) to learn how the model affected educator and student perceptions and behaviors as predictors of systemic change.

This DiP is generative and intends to impact a complex problem of practice (Carnegie Project on the Education Doctorate [CPED], n.d.). It is centrally concerned with equity and social justice. It aims to construct and apply knowledge that makes a positive and lasting difference in the lives of students, their teachers, and institutions. It probes problems of instructional and institutional practice as they manifest in the field where the work lives. It uses multiple frames to understand the multifaceted problem and develop meaningful solutions. As systems-based research, its design and discussion are comprehensive. It integrates foundational knowledge with the construction of new knowledge into a new theory of change. It applies established research principles in examining research inquiries and applying practical approaches to develop usable and meaningful professional knowledge and skills. It uses a case study format

to understand the likely effectiveness of the intervention in context and draws insights for future work.

### *Research Questions*

This convergent mixed-methods case study of a single site is concerned with what the EDD model pilot reveals about leading indicators of systemic change and poses three research questions to draw insights:

1. What are educator and student perceptions of the EDD model and its courses?
2. How and why did the EDD model affect educator and student behaviors?
3. What are the student outcomes (e.g., course grades, course completion rates) of the first EDD model course, and how do these compare to other like courses?

As the architect of the EDD-ToC, I have questions about the EDD model's likely efficacy and scalability in an environment where there are significant limiting structural behaviors to overall student success common to higher education institutions. The college wherein the EDD model resides, unlike many colleges, has undergone significant systemic changes due to its work in the Achieving the Dream network since 2012 and Guided Pathways since 2016. It may, therefore, have certain enabling conditions to promote effective upscaling of evidence-based innovations (Fixsen et al., 2019). Understanding the degree to which the EDD model within these conditions disrupts entrenched behavioral patterns may uncover strengths and opportunities for development in the model, provide insights about what efficacy requires, predict the likelihood of desired change, and inform subsequent iterations.

### *Audience*

This study and its multi-layered orientation to understanding a persistent educational problem are for educators in various capacities as Heifetz (1994) conceived leadership: not as a

person or position, but as an activity, which “allows for leadership from multiple positions in a social structure” (p. 20). This definition of leading disassociates physical or positional traits as necessities of being a leader. It regards leadership as not value-free, where people of responsibility in an organization must take sides to carry out a social contract. Leadership here is the work of adaptation where college members – whether it be the college president, instructor, or registration specialist – can lead by preparing and advancing colleagues for complicated work (Heifetz, 1994). This work also has technical aspects, known solutions to change archetypal structural behaviors through the application of improvement and implementation sciences.

I encourage leaders to orient themselves to what import the pilot intervention and its findings have for their activity through the USC framework discussed in chapter two. For example, in applying Heifetz’s (1994) principles of adaptive leadership, a college president may want to consider what their authority permits for the mobilization of change, how they can prepare the greater college for learning new ways of behaving, and how they can protect those without formal authority to influence change. A dean of a division might examine what their role affords to support shifts in faculty perceptions and behaviors by encouraging collaborative online instructional supports. A professional development director could explore how current training practices may reinforce or shift certain instructional perceptions and practices. Faculty can reflect on how to leverage their informal authority to rally colleagues toward collective agreements in adopting evidence-based teaching. I offer recommendations in chapter five to guide specific practical applications.

### **Significance**

Efforts to improve online learning completion rates and end significant outcome disparities in community colleges remain elusive despite sustained public investments.

Particularly concerning is the fate of non-traditional students, many of whom struggle in online learning relative to traditional classrooms (Xu & Jaggars, 2014). The sudden shift from F2F instruction to teaching online due to the COVID-19 pandemic affirms that distance education is very much a part of our present and future. The unexpected move to digital learning also shows that not having systems in place to take advantage of technological affordances and apply pedagogical strategies unique to online learning can result in students falling through the cracks (Garcia & Weiss, 2020; Kuhfeld et al., 2020), exacerbating known disproportionate impacts on certain student groups (Jaggars & Xu, 2010; Xu & Jaggars, 2011a; Xu & Jaggars, 2011b).

I argue that depending on individual instructors to develop systemic solutions in their respective practices did not work before the pandemic. It will certainly not now, especially given the outsized problem the system faces. Though rooted with good intentions, individualized approaches leave much to chance where students bear the greatest risks and costs in terms of their time, money, and future access to opportunities. Instructors lose too: they bear the burden of systemic change, are blamed for lack of progress, and become exhausted with little reward for their efforts. Institutional reliance on inspiration or aspiration also has limitations. As in other fields with great complexity, higher education can benefit from thoughtful structures and proven methodologies to improve reliable quality in learning. A socially significant endeavor to prepare a large and diverse student populous for a fast-moving and competitive world requires a unified all-hands-on-deck strategy. It requires a change in collective beliefs, behaviors, and structures before desired outcomes are realized reliably through time and across contexts.

Ending significant outcome disparities are consequential to individuals and their quest for social mobility. It is also critical for the United States, whose future depends on knowledgeable and agile learners able to participate in the nation's prosperity (Carnevale, 2020). An

examination of how interventions can change systemic behaviors before full implementation can reveal insights into their likely efficacy at scale. I argue that large-scale interventions need to address inequities at the locus of where they occur and are measured – in the instructional core. Moreover, any intervention intended to affect learning outcomes must examine educator and student perceptions of and behaviors in the *acts* of teaching and learning. Understanding how scholarship and practice engage in this area is essential to understanding what contributes to the persistence of gaps and what can be done about them. This study aims to contribute to the discussion.

### **Definitions**

Below is a list of terms used in this study. Unless otherwise noted, I developed them for this paper.

- *Academic achievement* is the quantitative measure of institutionally derived outcomes such as grades, retention and persistence rates, and course and degree completion rates. These measures are at the institutional level and are typically aggregated at a group student level (e.g., by demographics such as race/ethnicity, gender, age) and not at the individual student level.
- *College readiness* is the level of preparation a student needs to enroll and succeed in credit-bearing, college-level courses, including those offered in online learning. It simplifies and generalizes the operational term offered by Conley (2007).
- A *course* is a conceptual representation of a class with content, outcomes, and assessments. A class is the actual manifestation of a course and can be in multiples such as ten class sections of the course ENGL& 101. Sections of the same course can be taught with the same or varying content, outcomes, and assessments.

- *Course delivery* involves methods and processes of offering a course (Olube et al., 2015).
- *Course design* is the process and methodology of creating quality learning environments and experiences that are supportive and appreciative of learning and intellectual development (Capital University, n.d.).
- *Distance education* is “teaching and learning in which the teaching normally occurs in a different place from learning, requiring communication through technologies, as well as special institutional organization” (Moore & Kearsley, 2012, p. 2). Online learning is a subset of distance education. Distance education and online learning are used interchangeably.
- *Equitable education* is fair, evidence-based, quality teaching and learning conditions and experiences where students of all backgrounds can succeed at high levels. At the center of equitable education is equality of opportunity, not equality of outcome as numerous landmark U.S. court cases have established (Stanford University, n.d.). Therefore, equitable education is not lowering standards so that all students pass a course, graduate, etc. It is not all students have the same or equal outcomes. It is not quotas or guaranteed outcomes.
- *Equity gap* is the quantifiable and/or qualitative difference in academic measures such as grades, retention and persistence rates, and course and degree completion rates among and within student groups as represented by their aggregated numbers (e.g., course completion rate difference between White students and students of color, grade differences within Black students as a group).

- *Face-to-face (F2F) instruction* is where zero to 29 percent of the content is delivered in physical classrooms (Allen & Seaman, 2013). These courses are also referred to as in-class instruction, traditional classrooms, grounded courses, and their derivatives.
- *Instructional core* is the dynamic interplay among teacher, student, and content in a learning environment (City et al., 2009).
- *Instructional precision* is the intentional application of evidence-based practices for the purpose of broad and sustainable student success. It involves developing common goals, principles, practices, and capacity for teachers to engage in deep learning and awareness of their impact on student learning (Fullan & Quinn's, 2016; Hattie, 2012).
- *Non-traditional students* are likely 25 years or older, work full-time, have dependents, and have low-SES status. They are more likely to attend school part-time and as a collective more racially and ethnically diverse than students from traditional four-year universities (Carnevale et al., 2015; CCRC, n.d.)
- *Online course* is where at least 80 percent of the course content is delivered online. Hybrid or blended instruction has between 30 to 80 percent of the course content delivered online (Allen & Seaman, 2013). The focus of this study is online courses primarily and blended/hybrid courses secondarily.
- *Online learning, distance education, e-learning*, and their derivatives are where teacher and learner are separated and mediate the engagement of content via a computer network (Freeman, 2010; Moore, 2019). In this study, it is also when at least 30 percent of content is presented, delivered, and engaged online for the purposes of education and is accessible via an Internet connection (Allen & Seaman, 2011). The terms are used interchangeably in this paper.

- *Opportunity gap* is a difference in the distribution of resources necessary for various student populations to perform at levels appropriate for the complexity of the prescribed task. This definition is an operational response to the myth of meritocracy (Zamudio et al., 2011), which challenges (a) the notion of equality or “sameness” in measure and response (Merriam-Webster, n.d.a) regardless of need against (b) the notion of equity or “fairness” (Merriam-Webster, n.d.b) in measure and response in context of need in order (c) to arrive at equal access to opportunity.
- *Outcome disparity* is a quantifiable difference between and among cumulative performance metrics (e.g., assignment and course grades; course, assignment, program retention, and completion rates) across student populations. This term is preferred over the phrase “achievement gap” to underscore the role of institutions in outcome results versus student ambition.
- *Problem of practice* is “a persistent, contextualized, and specific issue embedded in the work of a professional practitioner, the addressing of which has the potential to result in improved understanding, experience, and outcomes” (CPED, n.d., near para. 15).
- *Scalability* is the ability to efficiently use limited resources (e.g., time, talent, and funds) and to maintain institutional and programmatic efficacy as educational demand increases. This definition is related to economies of scale, where there are cost savings as production becomes more efficient (Kenton & Drury, n.d.).
- *Subject matter experts* (SMEs) are content experts, course authors, course educators, faculty, and instructors (Heiser & Ralston-Berg, 2019).

*Language, Meaning, and Use of Terms*

I am centrally interested in equal opportunities to learn at high levels and the methodologies to assure them. Consequently, I take an evidence-based posture in my research and analysis. I prefer not to engage in ideological arguments that place people in combative and polarized zones, where nuances and shared values are lost. The work of education is far too important to be placed in a battlefield, where no one wins, and students incur the greatest losses. I focus on synthesizing what reliably works, informed by values. The language in this dissertation is decidedly hopeful because *hope* is the nature of education. It is also about *progress*. Educating the citizenry to access opportunities in a democratic society is about improving lives. It is also about *social justice*, not as a claim by one side or another for one group, but as a common goal achieved by shared conceptions and applications of *fairness for all*.

A major underlying goal for just and fair education is for all students, regardless of their background, to learn at high levels, free from avoidable barriers to their academic success. Avoidable obstacles are those that can be mediated by intentional design with present means. Unavoidable barriers are those that are historically or naturally occurring (e.g., long-term economic cycles, laws of nature, and acts of God) for which few present human interventions could effectively remove within a reasonable timescale or for which a solution would exact a price too great to pay. Avoidable barriers are distinct from operational or developmental challenges, which benefit the system or learner with strengths, insights, and progress. These opportunities for growth are not to be avoided or met with interventions that circumvent their purposeful confrontation. Growth avoidance creates fragility (Taleb, 2014) – the opposite of strength, responsiveness, and excellence – which counters a central aim of equity: opportunity to learn *at high levels*.

I take special care to distinguish what is meant by “equity” versus “equality.” Though the two are highly related – each meaningless without the other, their nuanced and specific functions in education bear distinction. The concept of “equity” refers to the interlocking principles of *fairness* (free of prejudice), *impartiality* (free of bias), and *integrity* (honesty, coherence, and wholeness). In education, the characteristics of equality are tied to *reliable* access to quality education. Without reliability, quality is in doubt. If access to quality education is relegated to low levels, then the aim for equality is dubious as well.

I qualify that for education to be equitable, it must have as its purpose learning at high levels. There are two reasons: one is practicality; the other is morality. To participate in today’s digital-based workforce, workers need higher orders of skills and knowledge than previously required in the industrial age. Employers increasingly require at least a bachelor’s degree to demonstrate 21<sup>st</sup>-century competencies (Burning Glass, 2014). Debate economic forces, but avoiding the realities of global competition leaves many people behind – widening and deepening income inequalities. An education system that aims for low levels of learning or low expectations suggests an underlying belief that students are unable or incapable of achieving excellence, personal mastery, and growth. Such deficit orientation is negatively prejudiced and dehumanizing. If such beliefs are reserved for students of color, then they are also racist.

I believe in the unbounded capacities of the individual and groups of people. As a species, we share common desires and pursuits to realize individual and collective potentials. I believe that humans of all backgrounds are capable of learning at high levels in various content areas and across contexts. Education interventions should not aim for the lowest common denominator in fear that students cannot meet expectations or that they will break from trying. Higher-order thinking, complex computations, languages, and various fields of study are not

reserved for some people, but inheritances of humanity. I believe people are by their nature antifragile (Taleb, 2014) with profound capacities to persevere and strengthen through life's many challenges. Positive perceptions of self-efficacy drive behavior and goal attainment (Bandura, 1977a). Messages and biases, conscious or otherwise, that project students are incapable of excellence negatively affect their sense of who they are and what they can accomplish. These are educational sins. They miss the mark. If these perceptions are based on a lack of confidence in one's ability to promote learning at high levels, then this is a matter of training. There are practical methods to facilitate effective teaching and learning.

Equality is distinct from equity. From a legal standpoint, it refers to equal or the same rights before the law and its processes. For example, the Equal Protection Clause of the Fourteenth Amendment to the United States Constitution provides, among other things, that all citizens of the United States have equal rights, privileges, and immunities of being a citizen and that they cannot be denied equal protection of the nation's laws. The same law grants all students equal access to public K12 education regardless of a student's immigration status. Such right does not guarantee nor require that all public schools provide quality education, however.

Nevertheless, federal and state laws tie school funding to school performance as measured by student outcomes (e.g., graduation rates) to assure quality through accountability of results (Wood et al., 2010). Be that as it may, there is an intrinsic recognition that those who attend our public schools, inclusive of postsecondary schools, should have equal access to *quality* education. I further posit that *equal opportunity* to quality education is made possible through *reliable access* to quality education. There is also growing awareness among higher education leadership that significant disparities in student outcomes are unacceptable to a public

education system designed to offer pathways to the American Dream. In addition, system stakeholders recognize that inequitable outcomes will exacerbate inequalities in our society.

Equity is a social aim. It is an informal yet powerful social contract. To aim for equity is to realize a shared value of fairness, impartiality, and integrity in the design and delivery of education. It is also necessary for the perseverance of our democratic society. In education, this entails fairness in opportunities to learn at *high levels* – without which equality of rights does little to afford access to quality of existence. I posit that reliable learning opportunities at high levels are therefore consequential. Higher orders of critical thinking, adaptive skills, and lifelong learning are crucial to ongoing participation in our evolving world. I also propose that the complex work of education benefits from methodologies that have succeeded in other fields to limit variance in quality and result in intended outcomes. Implementation science discussed later in this paper is critical in this regard. Therefore, the language I use is not value-free. While I seek to find empirical evidence to answer research questions without bias toward a pre-determined finding, I do so with a commitment to finding practical answers in the light of social justice.

I do not mean to suggest that it is practically possible nor ideal to create an educational system where there are no disparities, differences, or hierarchies, for such a world does not exist in nature. The human condition is far too complex for such simplifications. To control human behavior and its systems to such an extent would be oppressive and dangerous, as evidenced by the ideologies of communism and its real-world manifestations in Russia and elsewhere. Instead, I aim to propose that the work of education is purposeful and involves intentionally designed structures that produce desired learning outcomes consistently and reliably.

I also want to be clear that the work of equity does not ignore the role students play in advancing their goals. Agency is a liberating force. The structures of the EDD-ToC do not intend

to rob students of their individual and collective capacities to grow from challenges before them. Instead, the EDD-ToC facilitates sound pedagogical practices for the manifestation and integration of purposeful, meaningful, and lifelong learning. It puts a light on the responsibility of institutions and their practitioners to set up conditions for success versus barriers to progress. As Malcom-Piqueux and Bensimon (2017) say,

Equity-mindedness does not suggest that student behaviors, motivation, and attitudes are unrelated to their success. However, focusing on students alone, to the exclusion of understanding the ways in which institutions and practitioners can change their practices, policies, structures, and culture to more effectively promote student learning and outcomes, is equally problematic (p. 7).

I also do not want to suggest that individuality should be subordinated to the collective will. On the contrary, I believe that personal mastery strengthens humanity. I also believe that in education settings, much is gained from cooperation, expertise across domains, and the application of proven methods to achieve shared goals. Therefore, I ground my research where empirical evidence shows the likely efficacy of social interventions meant to improve lives.

### **Researcher's Positionality**

As a researcher, professional, and member of a free society, I acknowledge that my thoughts and actions are informed by a web of values, references, and motives. For example, as a scholar of philosophy, I account for how different perspectives orient understanding of reality and am conscious of phenomenological significance within contexts. As a certified K12 instructor, I look for pedagogical alignment across content, instructional supports, outcomes, and assessments and how these manifest in the instructional core. As a former policy analyst in higher education, I look for how institutional practices map back to public policy goals and for

empirical evidence for the likely efficacy of interventions to have intended outcomes. As an instructor of business courses, I teach operations, marketing, and finance principles within the context of scarcity. As a former co-chair of a professional-technical department and a current director of professional education at open-access public colleges, I am committed to offering high-quality education-to-workforce pathways for all students to improve their lives. As a first-born daughter of a large immigrant family from a Catholic and collectivist-oriented culture, a first-generation college student of color, a wife in an inter-racial marriage, and mother of a child of mixed heritage, I am driven to serve causes larger than myself. As a lifelong learner and individual with agency, I am committed to truth, development, and a life of meaning.

Collectively, these references and others put me where private and public sectors intersect with higher education's academic and workforce development goals. There I stand to critically examine their creative tensions, between vision and current reality (Senge, 2006) and between reality and the transcendent; to engage in dialogue about what matters within constraints and toward aspirations; and to find and deliver solutions with others in ways that draw people toward shared and timeless values. I believe that we cannot have all our wants and needs, not purely, and not always. I also believe that humanity is called to press forward and be better than its past without sacrificing the present. Hard as it may be at times, I believe progress is made in the palms of compromises. My engagement in this DiP reflects these orientations and beliefs.

I accept and am comforted that my experience and knowledge are not representative of all perspectives. It is important to me to be oriented as a learner – to embrace cultural humility, a lifelong commitment to self-evaluation and self-critique with intent to redress harmful power imbalances and socially constructed injustices in the world (Tervalon & Murray-Garcia, 1998). I also reflect on the Dalai Lama's message in the *Middle Way: Faith Grounded in Reason* – to

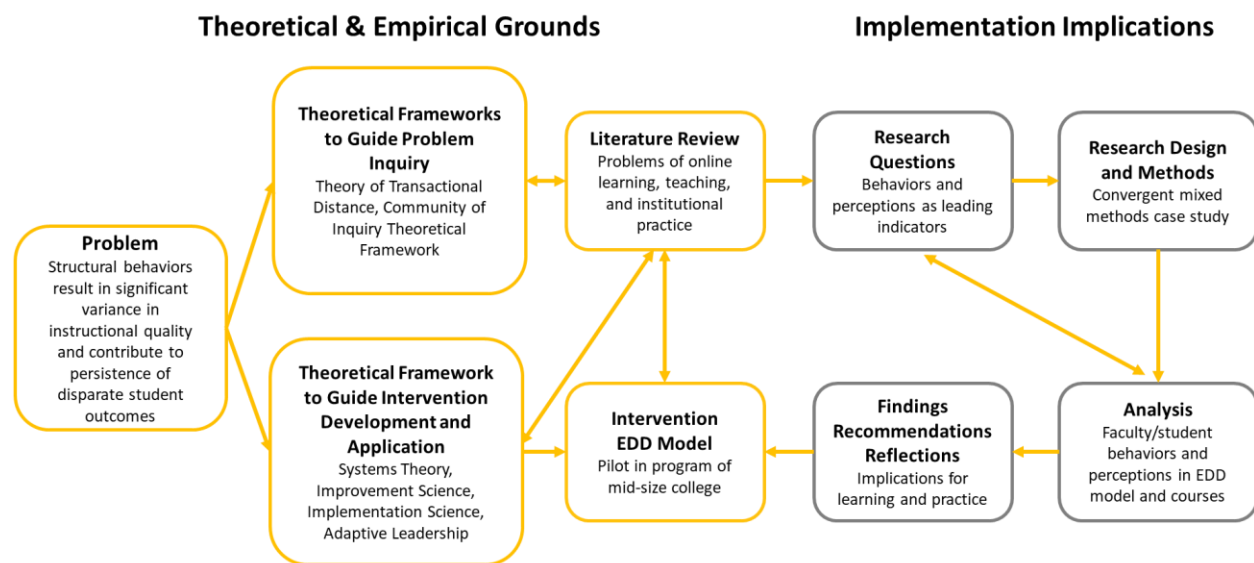
approach all matters with the “highest spirit of critical research...without falling into traps of fixed ideas or extreme views” (The Dalai Lama, 2009, inner book flap). I proceed in this study with this ever in my mind, heart, and spirit.

### Logic and Organization of Dissertation in Practice

This DiP began with a curiosity to learn the limiting condition to student success. This interest led to identifying multiple frameworks, conducting an extensive literature review, and drawing from my professional practice to create the EDD-ToC and its three components. A college in the U.S. piloted the EDD model, the operational part of the EDD-ToC. As the architect of the new intervention, I have questions about its efficacy at scale. The form and substance of the research questions led to a case study research design. The study’s methods represent a linear but dynamic interplay among inquiry steps to arrive at findings, recommendations, and reflections. Figure 2 illustrates how elements of the dissertation in practice logically relate.

**Figure 2**

#### *Logic of Dissertation in Practice*

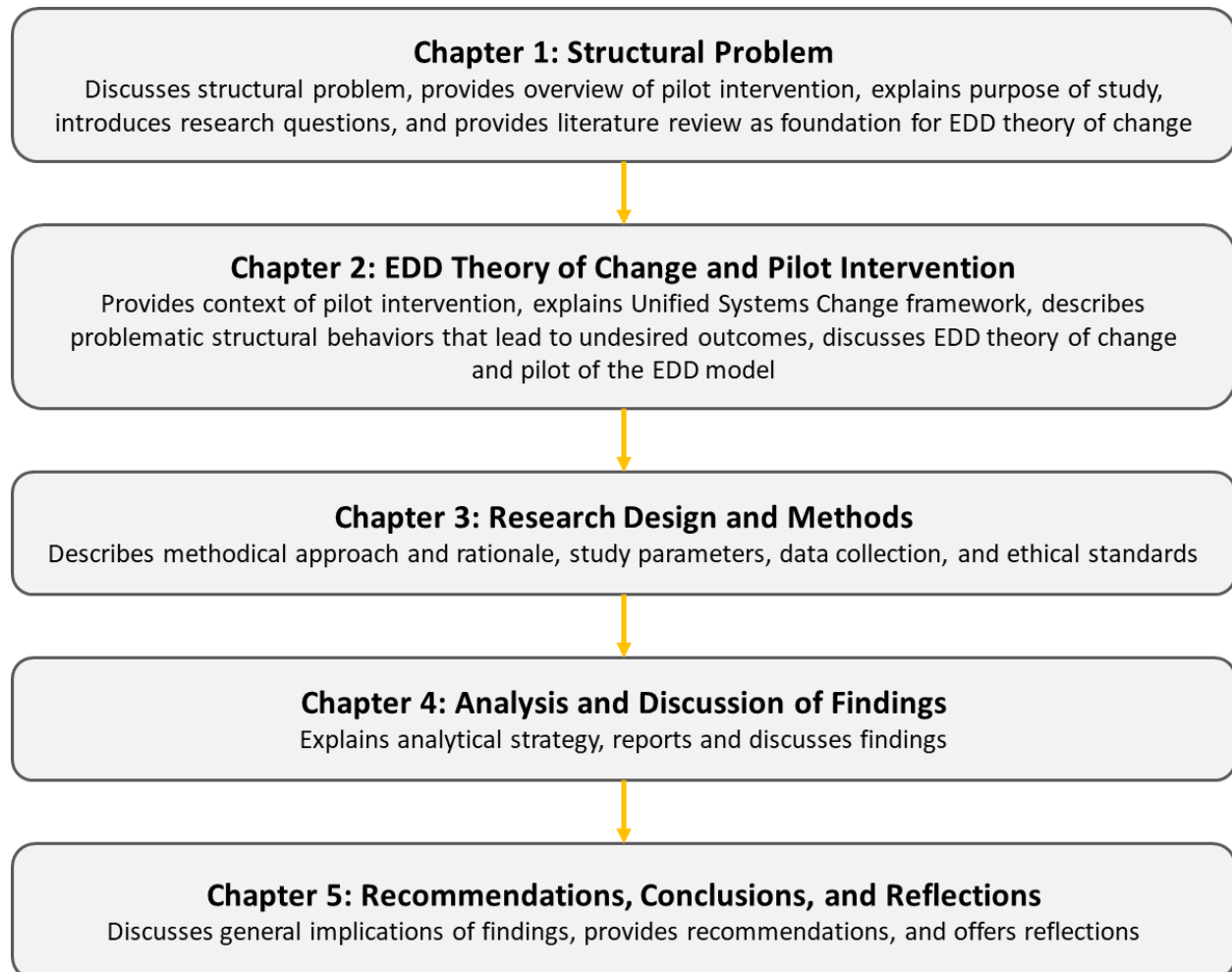


Equity by Design and Delivery – fair, reliable, quality educational opportunities to learn at high levels – are in linkages between structural problem, theoretical constructs and their applications to eliminate persistent disparate outcomes across student groups at the program level.

Given this dissertation's applied nature, the rest of this chapter proceeds with a literature review to establish foundational knowledge upon which the EDD-ToC was developed. This ends the introductory chapter. Having established what is known of the problems of online learning and instructional and institutional practice, chapter two discusses the EDD-ToC and the pilot intervention as a backdrop for the case study. The third chapter explains the research design, its rationale, and its methodologies. The fourth chapter discusses analysis and findings. The fifth and final chapter offers conclusions, recommendations, and a short reflection. See Figure 3 for a conceptual map of the dissertation.

### Figure 3

*Organization of the Dissertation in Practice and How Parts Relate*



## **Literature Review**

This literature review consists of a narrowly defined set of materials that help provide context, dimensions, and insights against problems of learning and practice in online learning. The review begins with a discussion of the theory of transactional distance and the Community of Inquiry framework to differentiate learning in traditional classrooms and learning online. This sets the stage for what is known about problems of online learning, followed by problems of instructional and instructional practice and efforts to address disparities of academic achievement in online learning. It ends with a discussion of possible gaps in the literature. This review grounds the EDD theory of change discussed in context in chapter two.

### **Select Theoretical Frameworks for Online Learning**

#### *Theory of Transactional Distance*

Moore (1980) developed the theory of transactional distance to provide a framework for researching, exploring, and applying pedagogical strategies of particular significance to distance education, where patterns of teaching and learning behaviors are separated. Moore (2019) wrote:

It is this separation between learners and teachers that necessitates special “patterns of behavior” in how content and teaching are organized in courses and programs – that is their structure – and special “patterns of behavior” in how teachers interact with learners when using communications technologies in the tasks of creating knowledge – that is, through dialogue (p. 33-34).

The framework includes three interlocked elements: the dynamic relationship between course structure (course plan, its objectives, and their execution) and dialog (interaction with the student), which affect a student’s behavior as an autonomous learner. For example, less program

or course structure necessitates more dialogue and vice versa, where more structure requires less need for dialogue (Moore, 2019).

**Structure.** Moore (2019) asserted that while learning and education are related, they have important distinctions. He contended that learning could occur without the aid of a teacher; education cannot. Moore defined education as a “transaction between two or more people, both teachers and learners, in which learning is not random but deliberate and planned” (p. 34). He posited that high-quality distance programs, especially those technical in nature (e.g., nursing, engineering, finance) have a high degree of standardization so that students achieve the same level of competencies. However, I observed in my capacity as a member of the curriculum adoption committee that most disciplines (i.e., English, math, physics, sociology) have technical aspects. Faculty were interested in preserving discipline technicalities as embedded in content, objectives, and assessments, though few processes enforced adherence. At any rate, Moore (2019) argued that the program's credibility rests on its ability to teach students desired competencies reliably, consistently, and effectively.

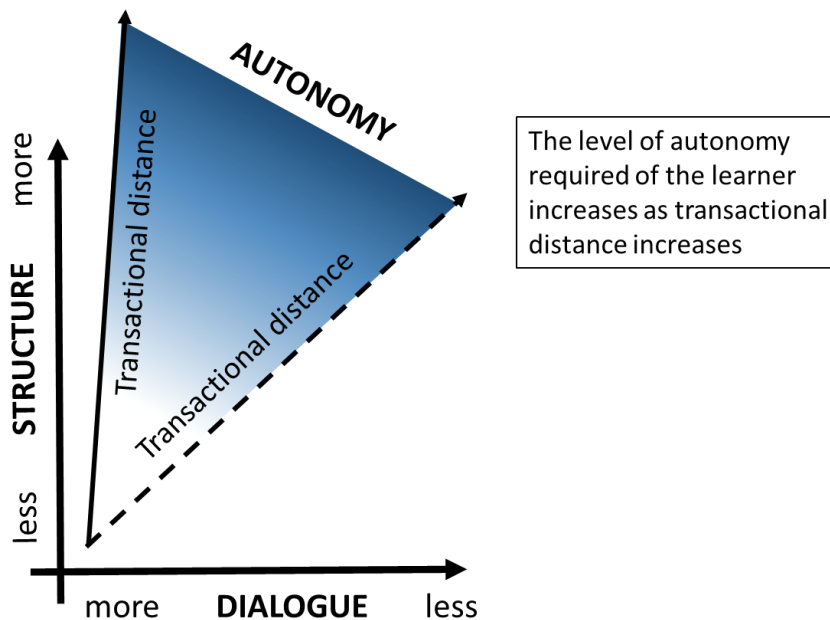
**Dialogue.** Moore (2019) described the second variable in the theory of transactional distance theory as dialogue. This second macro-factor involves participants in an open and synergistic exchange of ideas that build on each other's contributions to gain knowledge and insights (Burbules, 1993; Moore, 2019). Moore argued that the nature of the dialogue is primarily determined by the course structure, saying that “teach yourself” courses can be highly structured with little necessary dialogue with an instructor. Moore added that programs differ in the levels of structure and dialogue based on behaviorist and cognitive theories of learning. He posited that programs with minimal structure tended to have high levels of dialogical exchange – a behavioral leaning. Cleveland-Innes (2019) departed from Moore's dialogic position as one

primarily between teacher and student and favored the engagement of a community of learners. In this case, critical learning with others is prioritized versus autonomous learning.

**Autonomy.** Moore (2013/2019) identified autonomy as the third critical macro-factor. It explains how the dynamic interplay between levels of structure and dialogue affects a student's participation in the design of the learning as intended. He said, "managing transactional distance requires more than deciding the structure of the lesson and skillful management of dialogue in presenting it, but also requires knowledge about the ability of each student to manage his or her engagement with varying degrees of those teaching procedures" (Moore, 2019, pg. 36). See Figure 4 Moore's illustration of the interplay between structure, dialogue, and autonomy.

**Figure 4**

*Relation of Dimensions of Transactional Distance and Learner Autonomy*



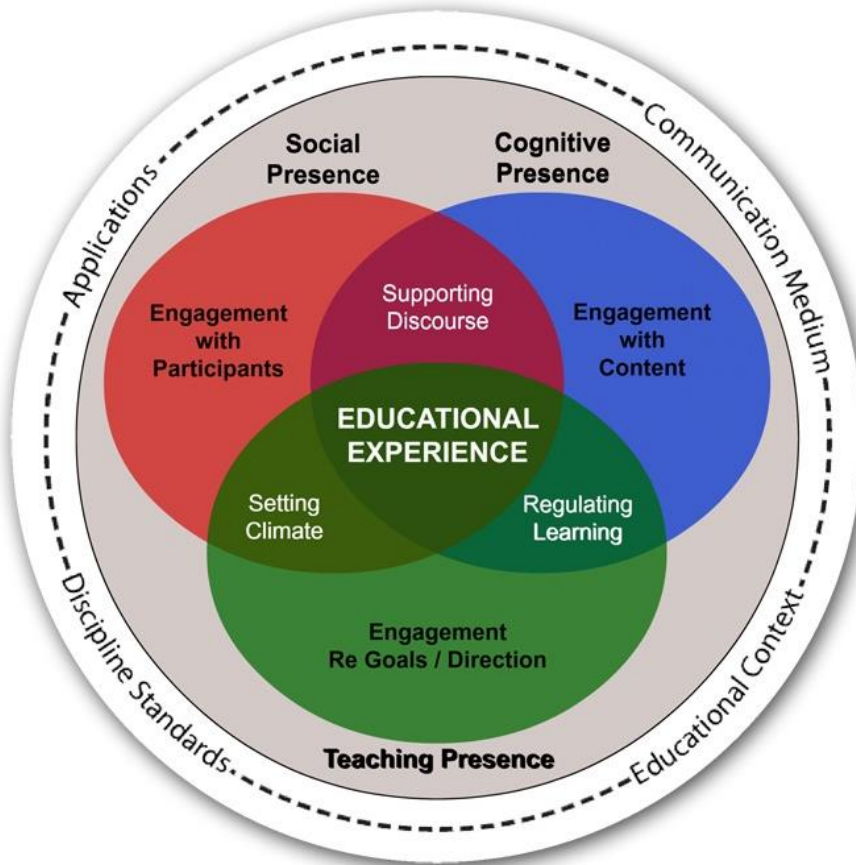
*Note:* The above is an adaptation of Moore's (2019) illustration of transactional distance. The gradient in the shaded area of the triangle represents the degree of autonomy required, with darker shades indicating greater autonomy required as transactional distance increases.

Moore's theory of transactional distance seemed located within the technological affordances of the time of its development – before the wide use of the Internet and other digital communication advances (e.g., email, learning management systems, video conferencing). An autonomous learner would be idealized in this context, and that independent study would be linked in its application (Cleveland-Innes et al., 2019). In today's context, where instructional design interacts with technological affordances and where embedded resources and supports are possible, what and how teaching is defined has implications for what constitutes structure, dialogue, and autonomy. This idea of interplay is not necessarily new, however. Bandura (1977b) said, "teaching is always a distributive function and, at the very least, individual self-efficacy and, by extension, independence, is a complex emergent phenomenon dependent on an interplay between self and others, not a purely individual characteristic" (p. 48).

In any event, Moore's original theory of transactional distance was validated theoretically and empirically by Saba and Shearer (1994). It continues to inform today's greater body of theories to explain and predict the myriad complexities of teaching and learning in distance education. For example, Dron (2002), Pruitt (2005), Stein et al. (2005), and others measured transactional distance and its relationship between student satisfaction and learning outcomes. Others sought to add to Moore's work by expanding the discussion to include such areas as concepts of "transactional control" (Dron, 2006, 2007), learner's perceptions of "transactional presence" (Shin & Chan, 2004), and the role of a student's social presence (Lowell, 2004). However, Kang and Gyorke (2008) argued that while the theory of transactional distance has served the field well since its inception, technological, cultural, and societal complexities raise limitations of the theory in recent years.

### *Community of Inquiry Theoretical Framework*

Other theorists contributed to the development of distance education epistemology by exploring more dimensions of online learning. For example, as the digital revolution advanced in the 1990s, theorists took note of new technology's socializing and democratizing features (Gunawardena, 1991). Moreover, technological affordances allowed for the pursuit of more collaborative-constructivist learning theories to emerge (Garrison & Archer, 2000). For example, Swan et al. (2009) and Garrison et al. (2009) moved away from emphasizing autonomy and independent learning and focused on social, cognitive, teaching aspects of learning online. They developed the Community of Inquiry (CoI) theoretical framework to frame online learning effectiveness in higher education as one that promotes higher-order learning experiences through collaborative discourse (Cleveland-Innes, 2019). This was consistent with Dewey's (1959) notion of education as a collective and constructivist activity. It was also in keeping with one of the Seven Principles of Good Practice in Undergraduate Education by Chickering and Gamson (2006): Good practice encourages cooperation among students. Cleveland-Innes et al. (2019) posited that exchanges go beyond mere cooperation and venture into the realm of critical discourse. They discussed interactivity between students in online learning not previously conceived in Moore's theory of transactional distance. The CoI framework brought to the fore three presences for higher orders of learning to occur: the necessity of community (social presence) to engage in activities (teaching presence) to learn at high levels (cognitive presence). See Figure 5 for a graphic illustration of the CoI framework.

**Figure 5***Community of Inquiry Framework*

Source: Community of Inquiry Framework (n.d.)

**Social Presence.** Garrison (2011) defines educational community inquiry as “a group of individuals who collaboratively engages in purposeful critical discourse and reflection to construct personal meaning and confirm mutual understanding” (p. 11). This socializing aspect engenders a sense of belonging, which is essential to learning success (Garrison & Akyol, 2013). The social aspects are neither static nor assured. For example, Akyol and Garrison (2008) showed that an increase in group cohesion decreases open communication. Cleveland-Innes (2019) found that “the development and progression of social presence categories may vary

depending on the instructional design of the course, the technology used for communication, or the level of teaching presence (Swan & Shih, 2005; Nippard & Murphy, 2007; Shea et al., 2010” (p. 70).

**Cognitive Presence.** The second element of CoI is cognitive presence, which helps learners to construct and corroborate meaning through reflection and discourse with others (Garrison et al., 2001). It is operationalized by the Practical Inquiry (PI) model inspired by the work of Dewey’s (1933) cycles of reflective inquiry. The cognitive presence is “particularly relevant to the e-learning experience in an asynchronous and text-based environment” (Cleveland-Innes, 2019, p. 70). Here deductive and inductive reasoning engages reflection and integration of internally and externally derived information and meaning.

**Teaching Presence.** The third element is teaching presence, which integrates social and cognitive presence during inquiry processes (Garrison & Akyol, 2013). It is “what the participants (usually the instructor) do to create a purposeful and productive community of inquiry” (Garrison & Akyol, 2013, p. 110.) The presence of teaching in CoI is defined as “the design, facilitation, and direction of cognitive and social processes to realize personally meaningful and educationally worthwhile learning outcomes” (Anderson et al., 2001, p. 5). Functions of teaching are further organized in three categories: design and organization, facilitating discourse, and direct instruction (Garrison & Akyol, 2013; Garrison & Anderson, 2003; Song et al., 2004). These include setting the curriculum and activities, shaping constructivist exchange, and focusing and resolving issues in the course (Garrison & Anderson, 2003). Like in social presence, indicators of teaching presence in online learning tend to change over time. Like the dynamic interplay among the macro-factors of structure, dialog, and autonomy in the theory of transactional distance, the CoI framework has dynamic variables that

affect the student experience. For example, teaching presence in the act of facilitation has been shown to decline and direct instruction to increase as courses progress (Garrison & Akyol, 2008). Such dynamics have implications for instructional design in promoting social learning.

Design and organization in online learning have added pedagogical complexities for optimized learning to occur. Therefore, course design is intertwined with the mode of delivery – necessitating a level of responsiveness not sought nor available in the early history of distance education. Garrison & Akyol (2013) explained that teaching presence manifests as the required structure and facilitation of higher-order learning. Garrison (2003) further stated that learning activities should be structured intentionally for the appropriate level of critical thinking, designed for learners to progress, and for students to become metacognitively aware of this developmental engagement.

Both Moore's (2019) theory of transactional distance and Garrison et al.'s (1999) CoI pose a multitude of instructional design considerations and pedagogical implications in online learning, including its cousin blending learning. Moore, Garrison, and other theorists would likely argue that without a clear understanding of how learning occurs optimally in distance education, problems of learning and practice would likely surface.

### **Problems of Online Learning**

Problems in distance education show up in different ways, one of which is in the metrics of academic performance in classes and credentials. It is here that this section begins – with a discussion of online learning outcomes relative to traditional F2F instruction, followed by what is known about student characteristics. It then discusses the effects of academic status and online exposure, time management, and course-taking behaviors on student outcomes in online

learning. It ends with what studies found about student perceptions and motivations in online learning.

### *Online vs. Face-to-face Courses*

Studies attempting to measure the efficacy of online learning relative to F2F instruction in such areas as learning outcomes and student satisfaction are many (e.g., Allen et al., 2004; Bernard et al., 2009; Tamim et al., 2012). The results are mixed. Some showed positive and neutral effects of online learning, while others discovered negative impacts on specific subpopulations or under certain conditions (e.g., Bernard et al., 2004; Jahng et al., 2007; Means et al., 2009). For example, as distance education spread across the country during the 1980s and early 2000s, it gained acceptance because of studies that found online learning to be equivalent to traditional classrooms in terms of cognitive gains (e.g., Cosgrove & Olitsky, 2015; Garratt-Reed et al., 2016). A summary of quantitative systematic reviews and meta-analyses published between 2000 and 2014 found that the online instructional format was at least equal to traditional in-class instruction in terms of student outcomes and at times exceeded them (Bernard et al., 2019). In 2009, a U.S. Department of Education meta-analysis reviewed more than a thousand empirical studies in online learning. Among the findings of the study were the following: (a) students who took all or part of a class online performed better, on average, than their peers taking the same course through traditional F2F instruction; (b) students in hybrid – part online, part in-person – conditions tended to have better outcomes relative to students taught entirely F2F; and (c) students in online conditions who spent more time on task than students in F2F conditions had better learning outcomes. The researchers noted that students in blended conditions received more learning time and instructional supports not received by students in traditional F2F conditions. They suggested that better learning outcomes may be more a function

of additional instruction, curricular design, and materials offered than in the mode of instructional delivery (Means et al., 2009).

A complicating factor in generalizing the relative strength of online learning to the entire body of the online learning experience is who tended to enroll in online courses. Before the wholesale shift to online learning during the 2020 COVID pandemic, online learners tended to be 25 or older, attend school part-time, are fully employed, and with dependents (Jaggars, 2012). They were less likely to be ethnic minorities, low-income, or academically unprepared in terms of their English and math proficiencies. Their propensity to choose online courses may be more a matter of their access to high-speed internet, relative comfort with technology and digital platforms to conduct online coursework, as well as need to balance multiple work and family responsibilities (Jaggars, 2013). Thus, despite studies that showed the relative strength of online learning as an instructional mode, students as a whole and under certain conditions did not necessarily fare better than students in F2F classrooms (Hart et al., 2018; Huntington- Klein et al., 2016; Johnson et al., 2015; Kaupp, 2012; Xu & Jaggars, 2013).

### *Student Characteristics*

Various studies examined student characteristics and how these related or explained student outcomes in online learning. Terrell & Dringus (1999) found that online learners tend to be self-directed, independent learners who are intrinsically motivated individuals with an internal locus of control. These characteristics, however, did not seem to be necessarily predictive of their success in online learning. Other studies explored student characteristics such as race/ethnicity, gender, socioeconomic status, employment status, first-generation college<sup>1</sup>

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<sup>1</sup> A first-generation college student or first-gen (as they are often called) is a student who is the first in their family to attend college (Mitchell, 1997) or someone whose sole parent or parents did not complete a baccalaureate college degree (Chaney et al., 2003; U.S. Department of Education, 2009).

students, and college preparedness and how they relate to student outcomes (e.g., Jaggars & Xu, 2010; Xu & Jaggars, 2011b; Figlio et al., 2013).

Still, other studies examined how online learners differed from their F2F counterparts. For example, large-scale studies of online learning in the Virginia and Washington State community college systems found that students who enrolled in at least one online course were different from those who chose only F2F courses (Jaggars & Xu, 2010; Xu & Jaggars, 2011b). Like the general community college student population, online learners tended to be older, with dependents, and employed full-time. However, they were less likely to be of ethnic minority background, less likely to be of low SES, and more likely to be English and math proficient at college entry. As such, they may have been more likely to have access to resources (e.g., high-speed Internet) and were better positioned academically to succeed in college-level coursework online where autonomous learning is a tacit expectation (Jaggars, 2014). On average, online learners who were not of similar characteristics did not tend to do as well (Jaggars & Xu, 2010; Xu & Jaggars, 2011a; Xu & Jaggars, 2011b); thus, the gap in course outcomes.

Other studies examined the role of other learner attributes. A Kaufman (2015) study observed that students could be just as successful online regardless of their preferred learning style, suggesting that students are adaptable to different learning environments (Aragon et al., 2002). Although students may have differing levels of technological comfort, studies showed that this did not significantly affect their success once in online learning courses (Kerr et al., 2006; Muilenburg & Berg, 2005; Waschull, 2005).

### *Student Course-Taking Behaviors*

Although studies found online learning as equal to or even exceed student outcomes in traditional in-class instruction (Bernard et al., 2019), there are differing student course-taking

behaviors and their resulting course outcomes. Simonson (1999) defined equivalence as “appropriate application should provide equivalent learning experiences for all students – distant and local –for there to be expectations of equivalent outcomes of the educational experience” (p. 7). Differences in course grades and completion rates appeared to depend on if, when, and how often students take online classes. For example, several studies showed that students who took online courses were more likely to fail, drop out, or withdraw (e.g., Bettinger et al. 2017; Hart et al., 2018; Huntington et al., 2016; Johnson & Mejia, 2014; Murphy & Stewart, 2017; Xu & Jaggars, 2011). Still, others found that online learning completion rates tended to be lower than traditional in-class courses (Bettinger et al., 2017; Hart et al., 2018; Jaggars, 2011; Murphy & Stewart, 2017; Xu & Jaggars, 2011). They were lower still for subpopulations like part-time students, students of color, and students with disabilities (Johnson & Mejia, 2015), as well as for students in low-income groups and students taking developmental courses (Jaggars, 2011). For those students who persisted in their courses, students who took online courses were more likely to persist at lower rates than their F2F counterparts (Xu & Jaggars, 2013). Among students who persisted in online courses, their grade on average was lower than those taking F2F courses (Bettinger et al., 2017; Krieg & Henson, 2016; Xu & Jaggars, 2013). Other studies implied that when students register for online courses matters. A study by Cox (2005) found that a significant number of online course enrollments occurred after in-class options were filled. Of these, those who enrolled at the end of the registration period tended to have lower completion rates. This course-taking pattern suggested that students would have preferred to take F2F options or were not ready for the autonomous learning demands of online learning. A Murphy and Stewart (2017) study advocated for early interventions to address early disengagement and re-enrollment practices, particularly for students who repeat courses.

Early interventions, however, do little to address instances where online classes are the only remaining options for students to progress on their educational pathways. For example, such approaches have limited impact during summer terms, where online courses may represent most course options (Cheslock et al., 2018). Also, mediations to prevent at-risk students from taking online courses have little value when online courses are the only ones offered, as was the case during the 2020 COVID-19 pandemic and the universal shift to online learning.

### *Academic Status and Online Exposure*

Academic status can be predictive of academic performance. A Murphy and Stewart (2017) study found that academically-at-risk students tended to enroll in online courses; a significant number of repeating students re-enrolled in online course sections; and students who disengaged in the first few weeks tended to fail or withdraw from their online course. The study also found that students who registered early for online courses tended to have higher GPAs and received significantly higher course grades than those who registered late; again, explanatory of the gap. The researchers, however, suggested that higher enrollments online may not necessarily reflect a preference by academically-at-risk students to take online courses but more indicative of later registration, leaving few remaining options but online sections. It is important that these studies did not explore reasons for disengagement, only that they occurred.

Xu and Jaggars (2011a) found that students who took online courses during the early part of their academic tenure were slightly but statistically significantly less likely to persist in subsequent terms, finding that online exposure can have a negative effect on persistence rates. They also learned that students who had a higher proportion of credits online overall were slightly but significantly less likely to gain a credential or transfer to a four-year institution.

Another research discovered that online classes had a significant negative relationship with both course persistence and grade (Xu & Jaggars, 2013).

A large study by Bettinger et al. (2017) found that students who previously failed an online course were less likely to remain enrolled in a later course. Such students also tended to reenroll with fewer credits in subsequent semesters. The study discovered that negative effects of online course taking were concentrated in students who were less prepared – had lower grades – prior to taking courses online and that online course taking exacerbates low-performance rates in future classes. Bettinger et al., however, cautioned not to regard the negative effects of online courses compared to in-person courses as an indication that online courses should be discouraged. Rather, they, like Xu and Jaggars (2011a, 2013), urged the need to improve online courses – particularly for students most at risk of failing the course and/or dropping from college.

Another study by Tyler-Smith (2006) distinguished adult learner characteristics that may help explain reasons for student attrition in online learning: sociological, psychological, technical, and cognitive. His research found that online learners often experienced cognitive overload, especially during the early stages of an online class, and were therefore likely to drop out. He argued that a learner's orientation to a locus of control – the degree to which an individual believes that they, internally, versus external forces (Rotter, 1954), can affect whether they remain in the course. Tyler-Smith (2006) cited the importance of considering what students believe are reasons for online attrition. Four reasons identified by students in the study were personal motivation; course design; conflicts among study, work, and family; and feeling that they learned what they need to learn. The study concluded with general conceptual ideas like early interventions to ameliorate attrition causes without prioritizing or identifying which factors to attend and left this for other studies to explore.

### *Time Management*

There was plenty of literature on the importance of time management as one of the major factors of success in higher education in general (e.g., Macan et al., 1990; Trueman & Hartley, 1996). There is also scholarship exploring poor time management as a predictor of academic underperformance (e.g., Balduf, 2009; Reis et al., 1995). This was also true in online learning, where self-regulation, motivation to learn, and independence were among the key indicators to online success (Kerr et al., 2006). Indeed, Michinov et al. (2011) found that procrastination in online learning discussion forums was positively correlated to academic underperformance. They suggested that online learning success depended on the learner's time management ability. However, the researchers noted that their study did not distinguish the difference between task avoidance and postponement. This distinction may have instructional design considerations.

### *Student Perceptions*

Several studies explored student perceptions of online courses. Song et al. (2004) found that students identified course design, motivation, time management, and confidence in using technology were among the variables that impacted their online learning experience. Of these, students indicated that the design of the course as the most crucial factor in their satisfaction of the course, followed by being comfortable with the technology used. They reported their motivation to learn as the third most significant factor to their success and their time management as the fourth. Although students did not indicate which aspects of course design impacted their learning, they cited difficulty in understanding instructional goals and lack of community as barriers and challenges to online learning. Xu and Jaggars' (2011a) extensive study in the Washington State community college system found that students gave similar reasons years later. Students in their study found technical difficulties, isolation, relative lack of

course structure, and general lack of support reasons for struggling online. Yi et al. (2020) found that students in a graduate program ranked instructional proficiency of basic online functionalities as the highest among seven factors to signify quality online learning. This was followed by teaching presence, communication, and individualized responsiveness to ease a sense of isolation in online learning. Interestingly, while students ranked teaching presence as second most valued, it received the most complaints by students in Yi et al.'s study. Students also desired clear feedback, a detailed syllabus, and better use of technological tools to aid instruction. Studies have long supported seamless and effective integration of technology as an instructional device as critical to a student's positive experience of online learning (e.g., Hooper & Rieber, 1995, Hill, 2002).

### *Student Motivation*

A sizable area of scholarly interest in the literature was student motivation, which is important to how learners think, act, and feel while learning, affecting their success (Paris & Turner, 1994). Wentzel & Brophy (2014) defined motivation as “a theoretical construct used to explain the initiation, direction, intensity, persistence, and quality of behavior, especially goal-directed behavior” (p. 2). Motivation was found to be inherently complex and dynamic involving multiple factors, and given its process-oriented versus outcomes nature, exceedingly difficult to measure (Hartnett, 2019). The studies were clear: intrinsic rewards are more effective than extrinsic rewards in motivating students to goal attainment (e.g., Stipek, 2002, Schunk et al., 2014). Moreover, online learners tended to be more intrinsically motivated than their in-class peers (Rovai et al., 2007; Shroff & Vogel, 2009).

In online settings, motivation was observed as the degree to which online learners engage in learning activities, with high levels of attention and energy committed as indicative of high

motivation. Low motivation levels contributed to low online retention rates (Artino, 2008; Keller, 2008), while high motivation levels related to retention (Levy, 2007). Allen et al. (2019) discussed relationships between student motivation and student satisfaction as linked, where students who connect with institutions are more likely to complete online courses.

Among the reasons students took online courses were access, convenience, and flexibility (Harris & Martin, 2012). However, this was not to say that external factors did not significantly affect the motivation and persistence of online learners. Street's (2010) analysis of eight studies found that course factors and instructional or institutional support greatly contributed to persistence in online learning. Tinto (2015), nevertheless, posited that student motivation is intrinsically different from those of institutions. Whereas colleges and universities are motivated to increase the number of students who graduate, students are driven by different factors, including their perceptions of self-efficacy, sense of belonging, and value of the curriculum they are asked to learn.

As online learning expands to include non-traditional learners, who may or may not have preferred online courses, but find few recourses, motivational factors may become more fluid than previously assumed. For example, while motivation is a stable trait (e.g., Yukselturk & Bulut, 2007), modern-day theorists acknowledged that personal, social, and contextual factors affect motivation (Tinto, 1993; Zimbardo et al., 2006). Harnett (2019) cited the work of contemporary theorists such as Schunk et al. (2014), who recognized that "emotions, in addition to values, cognition and behavior, form part of the motivational landscape" (p. 146). These studies suggested that motivations for taking online courses may be in flux. Student motivation levels differed at the beginning, during, and after a class as they experienced a course's many

opportunities and challenges. Understanding the nature of motivational fluidity in distance education has implications for supporting students where learning and teaching are separated.

### **Problems of Online Teaching**

This section begins with structural differences between in-class versus online teaching. This sets the stage for the importance of online design and delivery factors and the role of instructional design in online learning. It then proceeds a discussion about variance in learning and teaching as well as perceptions about teaching. It ends with studies about teacher behaviors as predictors of success.

### ***In-Class versus Online Teaching***

Teaching online is quite different from teaching in-class (Abbott, 2005; Cox, 2005; Wong et al., 2006). In a conventional classroom, instructors develop a curriculum based on F2F instruction. They choose a book and create a syllabus, which they hand to students (Chizmar & Walbert, 1999). They present information and interact with their class synchronously, where the engagement is verbal, sequential, given to all at once, and constrained by time and space (Shi et al., 2006). They have in-person opportunities to clarify expectations and correct misunderstandings. Online learning is quite different. The separation of instructor and student, where communication is mediated through technology, creates what Moore (2019) called transactional distance. In this context, course structure affects how teacher and learner need to dialog for intended learning and the desired level of autonomy to occur.

Cleveland-Innes et al. (2019) posited that online learning also requires social, cognitive, and teacher presences in the design and delivery of courses for higher orders of critical thinking. Although the technological tools of distance education present content in various ways accessible to the student anytime and anywhere, the inclusion of these tools requires additional

considerations for effective teaching and learning to happen. Online learning involves far more upfront preparation inclusive of detailed planning, organization, and presentation of content; specifications of reading materials and their assignments; as well as describing class deliverables in depth using digital technology (Levitch & Milheim, 2003; Min et al., 2006). It also necessitates new skills and support structures for both instructors and learners.

Online learning can pose instructors with creative tensions. On the one hand, teachers find that online teaching, with its asynchronous nature and many technological tools, gives them flexibility and a level of creativity they would not otherwise have in F2F classrooms (Conrad, 2004; Parker, 2003). However, they also find that teaching online increases their workload and redefines their schedules, where they feel and act like “24 hour professors” (Hislop & Atwood, 2000; McKenzie et al., 2000; Young, 2002). They soon discover that the many affordances and complications of digital learning require different pedagogical and instructional design considerations (Halupa, 2019). These complications are present as faculty manage transactional distance (Moore, 2019), where they need to account for an appropriate course structure to support student’s dialogic and autonomous learning needs. If higher orders of critical inquiry are also course aims, instructors will need to consider how to engage learners socially in ways that promote dialogic exchanges between peers (Cleveland-Innes, 2019). All of these require more time than needed in traditional classrooms.

The design and delivery of online learning is structurally different work (Avolio & Kahai, 2003). To be done effectively, it involves the inclusion of other employees and new roles not normally associated with the development of courses in traditional classrooms (Halupa, 2019; Yar et al., 2008). Importantly, appropriate pedagogical application of educational tools requires different instructional skills than those used in F2F instruction (Cox, 2005; Halupa, 2019). A

partnership among online teachers, instructional designers, and technologists can help facilitate effective application (Halupa, 2019; Outlaw & Rice, 2015). The use of universal templates to facilitate replicating evidence-based practices in online learning can reduce both instructor and student anxiety as both engage content in an unfamiliar environment (Outlaw & Rice, 2015). It can serve as a guide to building pedagogically sound courses (Shearer & Park, 2019).

Fundamentally, universally designed courses create consistency, save time, and reduce cognitive stress by eliminating the need to relearn how to navigate each course within a program.

Borgemenke et al.'s (2013) examination of common course shell design components in a graduate program found that intentional design resulted in students and instructors feeling better about the online program. Although the program has experienced significant increases in completion rates, linking specific universal course shell components to student success was more difficult to ascertain. A discussion of online design and delivery considerations for improving the student experience in online learning follows.

### *Online Design Factors*

With its asynchronous nature and delivery through a web-based platform, online learning was found to require a different and additional set of skills than those typically expected in F2F instruction (Berge, 2001; Halupa, 2019; Willis, 1992). These skills range from familiarity with learning management systems (LMS) used to present, organize, and deliver content; communication patterns for interacting with the teacher, peers, and content; and time-management skills. Although most institutions designed primarily for distance education provide an online orientation, most colleges designed for F2F instruction do not (Beckford, 2015). The college of this study provided optional online orientation. It also required students to take a college preparatory class, which showed students how to use the basic tools of the college's

LMS. However, the college did not have standards for course design, resulting in an array of course structures with varying quality – leaving students to figure out how each course operates and what instructors expect of them.

Several studies explored the importance of course design as it manifests in such factors as structure, clarity, and consistency. Dykman & Davis (2008) found that students can be easily confused in courses where expectations are unclear, especially if students do not know how to navigate an online learning environment. Lee (2008) and Swan (2001) explained that confusion could be avoided by creating streamlined and standardized course designs to facilitate student engagement of content and promote positive student online experiences. Swan's research further found that consistency in course modules increased student satisfaction and perceptions of how much they learned. Other studies similarly found that students valued clarity of navigation, easy retrieval of course materials, and access to information they needed to complete tasks (Richardson & Swan, 2003). Miller (2012) supported this practice, stating that instructors improve student engagement and course completion when online courses are easy to understand and navigate. Swan (2001) contended that consistent design in courses across the program increases student comfort levels to focus on learning versus being distracted, confused, or threatened by disorganization and lack of clear expectations.

Swan's contention is particularly significant in light of a student's educational plan, which consists of courses to earn a credential. That is, if course structures and their quality differed significantly within a program, it would be reasonable for student frustrations with individual courses to extend to the program. Indeed, I observed this to be the case at the college of this study as students openly lamented quality differences across the courses they took within and across programs as they met degree requirements. Such differences in quality are due to

structures that maintain the teacher isolation, one Lortie (1977/2002) argued was a significant impediment to improving teaching and student learning. Such isolation arguably reflects an ongoing professional culture that prioritizes autonomy over collective action and where educators develop their courses apart from their colleagues (Miller & Golden, 2012). Isolated practices can be further exacerbated in online learning where layers of separation are present: separation not only from students but also from colleagues, support structures, and the institution.

Online learning has additional structural separations to consider. Effective and intentional course design, individually and programmatically, requires instructional capacity supported by institutional resources, often lacking or elusive (Caplan & Graham, 2008). For example, online course design processes often proceed with content and technology disconnected from each other – even as online learning is growing as an educational medium (Koehler et al., 2004). Part of the problem is the disconnect between teachers and technologists from course design, where both try to ignore or are isolated from each other (Mirel & Goldin, 2012). Contributing to this distance are obstacles such as teacher angst around their lack of technological knowledge, the amount of time it would take to design online courses and away from other responsibilities, lack of opinion leaders who act as role models to less experienced instructors, and preconceived notions and attitudes about technology and its role in education. Higher education attempts to bridge the divide come short. Traditional workshops and tutorials do not explicitly make the connection between technology and pedagogy. Technical support groups or content producers who support instructors rarely have educational or instructional design backgrounds. Yet, institutions implicitly expect educators to interpret instructional ideas into educational tools. If institutions

do have instructional design supports, such as the provision of instructional designers to aid faculty in course development, other challenges may occur due to confusion of roles.

### *Online Delivery Factors*

Advancement in technology continues to expand methods used to deliver instruction not readily available to F2F-only classes. Learning management systems such as Canvas and Blackboard integrate electronic grade books, discussion boards, email clients, multi-media, and many educational apps. A multitude of ways to engage a student 24/7, using advanced pedagogical instruments, offers many opportunities to improve the quality of online learning (Mirriahi & Alonzo, 2015). Yet, their availability does not necessarily translate to extensive use or access by students for learning purposes. Furthermore, instructors expect students to effectively engage in online learning regardless of whether students are familiar with educational technologies used to deliver instructional content (Bozarth et al., 2004).

Jones and Binhui (2011), for example, found that patterns of technological use for learning purposes varied greatly among students. Similarly, McNeill et al. (2011) and Gosper et al. (2013) found that students tend to be more conservative in their use of technologies for learning purposes, relying more on Internet search engines, emails, texting, and social media sites to find information. This suggests that instructional assumptions of student proficiency and comfort in using sophisticated tools may need further examination. As well, students increasingly prefer their smartphones to access instructional materials (Smith & Caruso, 2010). This has implications in the delivery of instructional materials that were not designed for small screen engagement. Students also desire more online video lectures and podcasts (Mirriahi & Alonzo, 2015), which pose redesign challenges for online classes primarily delivered using text.

### *Instructional Design*

The field of instructional design originated during WWII when educators and psychologists came together to develop military training materials (Halupa, 2019). In this capacity, they developed and organized learning objectives as well as effective testing methods to help assess and assign people for specific jobs. After the war, they continued their research on instruction. Notable researchers such as B.F. Skinner, with his programmed instruction to solve learning problems, and Benjamin Bloom, with his taxonomy of learning objectives, contributed to the rise of instructional design (Reiser, 2001). Although instructional models grew through the 1970s, they were rarely used in higher education (Halupa, 2019). It was not until the 1990s, with the advent of the Internet and online learning, that instructional design grew in prominence (Chao et al., 2010). In 1998, the *Chronicle of Higher Education* recognized instructional designer (ID) as a new profession that combined teaching and instructional technology (Guernsey, 1998). The ID's main function was to help faculty in the effective design of courses (Halupa, 2019).

The roles of ID and faculty, however, can elicit tensions if not properly differentiated (Halupa, 2019). Given that IDs assist faculty, who are subject matter experts (SME), across various disciplines, they do not act as content experts and refrain from advising faculty on subject matters. Instead, they serve in a collaborative function in recognition that no single person has all the expertise to create an online course (Puzziferro & Shelton, 2008) and where “[d]eveloping a course for online instruction requires content knowledge and understanding of the interactivity, technological requirements, and possibilities in the asynchronous environment” (Xu & Morris, 2007, p. 35). Distinguishing instructional design from content delivery can nevertheless be fraught with conflicts. Part of this tension may be situated in the role of IDs as

change agents and instructional advisors, where they work closely with faculty and by so doing influence institutional change in pedagogy in online learning (Campbell et al., 2009; Tracey et al., 2014). This advising role is critical in helping faculty focus on course quality and the appropriate use of instructional technology (Chao et al., 2010). If not mediated with deference to the SMEs, such efforts can be perceived as overbearing and resisted by faculty. Therefore, all involved in the collaborative course development processes need their roles clarified. They also need to be supported by training on the value and engagement of each role.

### *Variance in Learning and Teaching*

Hattie's (2012) synthesis of over 1200 meta-analyses found that students are the greatest source of variance in learning. They differed across attributes and prior knowledge, backgrounds, motivations, abilities, study habits, purposes for learning, among many others (Hattie, 2015). Educational institutions, especially open-access systems like community colleges, can do little about the vast differences of the students they admit, primarily because by their charge, they accept all. Next in line were the qualities of the instructor, representing about 20 to 25 percent attribution to the total learning variance. Hattie noted that colleges and universities do have some control of this variability. He added that the rest of the variance involved structural matters (e.g., lecture vs. online), effects of peers, and leadership (Hattie, 2015).

Another area of variance in studies involved student outcomes by type of instructor. For example, Mueller et al. (2013) found that student outcomes in student classrooms varied significantly between full-time and part-time faculty. Their study did not suggest that adjunct faculty are necessarily less effective as teachers. Their lack of relative integration to the institution may have affected their level of institutional support to be successful.

### *Perceptions About Teaching*

Hattie (2015) found that one of the biggest influences in student success is teachers' attitudes about teaching and student learning. Given their academic success, most higher education instructors have strong views about teaching and extend this as an expectation that students apply themselves according to be successful, just as they did. This orientation to learning operates implicitly and shapes their role as teachers and students as learners in the classroom. Though Hattie did not explicitly state if such instructional perceptions differ across modalities (i.e., F2F, hybrid, or online), it is reasonable to assume that he meant this valuation of education to be agnostic across the instructional delivery modes.

Instructors who have not taught online can find the experience unsettling (Conceição, 2006; Fish & Gill, 2009) – as many did during the COVID-19 pandemic at the college of this study. Faculty's confidence in their instructional abilities can be put to the test by an unfamiliar mode of teaching (King, 2002; Lawler et al., 2004). A literature review by Dhillia (2017) cited numerous studies where faculty felt bewildered, ignored, and lost in the change – feeling demoralized as they lost their sense of efficacy. She proposed that institutions do a much better job of supporting faculty with more instructional design support, intentional socialization with peers to confront and overcome obstacles, and pedagogical reflection about their teaching practices in online learning and how these impact student learning. Dhillia (2017) recognized that instructional supports often require substantial resources, posing significant challenges for how faculty in smaller colleges can be supported effectively.

Hattie (2015) found that the most successful teachers are aware of their attitudinal orientation and look for how they impact learning. They function as evaluators of how their teaching (Clinton & Hattie, 2014). This act, what Hattie (2009) called visible learning (VL), has

a more extensive reach than just one's classroom. Therefore, Hattie (2015) argued such evaluative function should operate at the department and college level by normalizing collaborative inquiry, lending credibility to critical debates, and providing time to do so. Senge (2006) would agree that this engagement recognizes the creative tension between the reality of the challenge before instructors and the perception of how things ought to be done.

### *Teacher Behaviors as Predictors of Success*

Kowal and Ableidinger (2011) posited that reformers should look to leading indicators to know when dramatic changes are on track. These typically involve skills, habits, and behaviors known to promote success. Bandura (1977a) identified one of these indicators as positive perceptions of one's ability, or self-efficacy, to drive behavior and result in goal attainment. Bandura's work evolved individual efficacy into a discussion about collective efficacy. For example, Goddard et al. (2000/2004) and Eells (2011) raised awareness of how a group of teachers' perceptions in their abilities, collective teacher efficacy (CTE), can impact student learning outcomes (Hattie, 2016; Donoohoo, 2019). Hattie's (2016) Visible Learning research based on a synthesis of over 1200 meta-analyses relating to influences on achievement found factors to influence student learning. His research concluded that CTE to be the number one predictor of student success with an effect size of 1.57 – where 0.0 is no effect, 0.40 is an average effect, and 0.8 is considered a large effect size. In the ranking of over 250 factors influencing student learning, Hattie (2016) found CTE to be twice more predictive than feedback (0.70 effect size) and three times more likely to impact student achievement than student concentration (0.56), student engagement (0.56), and student motivation (0.42). Hattie's meta-analysis suggested perceptions of efficacy, individual and collective, as critical to student learning.

### **Problems of Institutional Practice in Online Learning**

This section focuses on problems of institutional practice relevant to the EDD theory of change, generally, and to the EDD model, specifically, as they relate to this study. Other aspects of the theory of change (e.g., coherence of institutional policies and procedures) is not discussed here as they were not formally sought or were limited in application during the pilot stage of the model. Therefore, this section attends to established foundations of knowledge in defining what constitutes quality education in general, quality assurance in online learning specifically, and professional development as they relate to behaviors and perceptions of system actors. Such a discussion provides a backdrop for the rise of a movement toward quality standards, for which adoption presupposes a need for consistency of application to reduce variance in performance – both at the instructional input and learning output ends.

#### *Defining Quality*

Higher education recognizes that learning experiences ought to be of quality as evidenced by mission, vision, and value statements across institutions. Yet, there is no clear and shared definition of what quality is. Some researchers nevertheless look for patterns using operational terms. For example, Schindler et al. (2015) found that this challenge is in part due to the varying perspectives of four stakeholders: providers (e.g., taxpayers, funding bodies, community), employees of the education sector (e.g., instructors, academics, administrators), users of educational products (e.g., students), and users of what the education produces (e.g., employers) – where each conceives of quality differently. Although different sector players may see quality from various vantage points, four broad strategic themes of conceptualizing quality emerge from Schindler et al.'s synthesis of the literature: purposeful, exceptional, transformative, and accountable. These remain stable over time. See Table 1 for an outline of the themes.

**Table 1***Classifications of Quality*

Classifications	Definitions
Purposeful	Institutional products and services conform to a stated mission/vision or a set of specifications, requirements, or standards, including those defined by accrediting and/or regulatory bodies (Cheng & Tam, 1997; Commonwealth of Learning, 2009; Green, 1994; Harvey & Green, 1993; Harvey & Knight, 1996; Peterson, 1999)
Exceptional	Institutional products and services achieve distinction and exclusivity through the fulfillment of high standards (Bogue, 1998; Cheng & Tam, 1997; Green, 1994; Harvey & Green, 1993; Harvey & Knight, 1996; Peterson, 1999)
Transformative	Institutional products and services effect positive change in student learning (affective, cognitive, and psychomotor domains) and personal and professional potential (Biggs, 2001; Bobby, 2014; Bogue, 1998; Green, 1994; Harvey & Green, 1993; Harvey & Knight, 1996; Haworth & Conrad, 1997; Pond, 2002; Quality Assurance Agency for Higher Education, 2012; Srikanthan & Dalrymple, 2002, 2004, 2005, 2007)
Accountable	Institutions are accountable to stakeholders for the optimal use of resources and the delivery of accurate educational products and services with zero defects (American Society for Quality, n.d.; Cheng & Tam, 1997; Green, 1994; Harvey, 2005; Harvey & Green, 1993; Harvey & Knight, 1996; Nicholson, 2011)

Source: Schindler et al. (2015).

Extending operational terms, a second approach of defining quality is how they affect inputs (e.g., faculty and staff) and outputs (e.g., graduates for employment) (Schindler et al., 2015). Four categories emerge across more than 50 quality indicators: administrative, student support, instructional, and student performance. The first three of these are primarily concerned

with inputs. The last category attends to outputs (e.g., skills, knowledge gained and demonstrated by students), which are increasingly associated with measures of quality (Tam, 2014). See Table 2 for a discussion of these more specific categories relative to the themes discussed above.

**Table 2**

*Categories of Quality Indicators*

Categories	Definitions
Administrative Indicators	A set of quality indicators that pertain to the administrative functions of an institution, including developing a relevant mission and vision, establishing institutional legitimacy, achieving internal/external standards and goals, and procuring resources for optimal institutional functioning (Cheng & Tam, 1997; Commonwealth of Learning, 2009; Hill, Lomas, & MacGregor, 2003; Iacovidou, Gibbs, & Zopiatis, 2009; Mishra, 2007; Online Learning Consortium, 2014; Owlia & Aspinwall, 1996; Zineldin, Akdag, & Vasicheva, 2011)
Student Support Indicators	A set of quality indicators that pertain to the availability and responsiveness of student support services (e.g., the degree to which student complaints are adequately addressed; Garvin, 1987; Hill et al., 2003; Iacovidou et al., 2009; International Organization for Standardization, n.d.; Lagrosen et al., 2004; Mishra, 2007; National Institute of Standards and Technology, 2015; Oldfield & Baron, 2000; Online Learning Consortium, 2014; Owlia & Aspinwall, 1996; Quality Matters, 2014; Wong, 2012; Zineldin et al., 2011)
Instructional Indicators	A set of quality indicators that pertain to the relevancy of educational content and the competence of instructors (e.g., programs and courses that prepare students for employment; Biggs, 2001; Commonwealth of Learning, 2009; Harvey & Green, 1993; Hill et al., 2003; Iacovidou et al., 2009; Online Learning Consortium, 2014; Quality Matters, 2014; Tam, 2014; Wong, 2012)
Student Performance Indicators	A set of quality indicators that pertain to student engagement with curriculum, faculty, and staff, and increases in knowledge, skills, and abilities that lead to gainful employment (e.g., increased critical thinking skills; Bogue, 1998; Cheng & Tam, 1997; Harvey & Green,

1993; Harvey & Knight, 1996; Haworth & Conrad, 1997; Iacovidou et al., 2009; Scott, 2008)

Source: Schindler et al. (2015).

Schindler et al.'s (2015) organized the relationships and possible applications between the broad and specific approaches to quality as goals in higher education into a conceptual model. The center of the model is the broad idea of "quality." It is encircled by various stakeholder perspectives through which broad strategies emanate. See Figure 6 for the multifaceted nature of this model.

### Figure 6

*Conceptual Model of Quality Depicting Broad and Specific Strategies for Defining Quality*



Source: Schindler et al. (2015).

Schindler et al.'s (2015) synthesis of the literature captured multi-dimensional aspects of quality, organized complexities of broad and specific strategies to define and operationalize quality. They offered recommendations on how to define quality in various contexts in higher education. It also revealed specific gaps in the field. For example, the synthesis did not specifically address quality in the instructional core – the interplay of teacher, content, and student (City et al., 2009); in instructional design; or how definitions of quality have pedagogical distinctions across learning modalities (e.g., F2F, hybrid, online). It can be argued that such considerations may fall under “instructional indicators” as discussed in Table 2. However, these indicators do not necessarily include means to achieve quality and *at scale*. Again, the implicit assumption is that the approach to assuring quality is at the individual level, whether by instructor, course, or institution. Such a strategy would require sizable resources to support; even so, it would naturally result in considerable variance across individuals, courses, and institutions. Among the resources would be how to deploy professional development to prepare both part- and full-time instructors for evidence-based pedagogies of online learning, arguably a heavy lift for a system not currently set up for such a challenge.

Moreover, while regional accreditation entities provide oversight through a peer-review process, each accreditor's qualifications of what constitutes quality differ, and generally do not seek to assure quality at the program or course level. This is likely rooted in a deference to the autonomy of institutions (Gaston, 2013) and higher education's culture of academic freedom. Also, as Schindler et al.'s (2015) model attests, *reliability* of quality is not yet a strategic focus. There is little discussion in the literature about how quality is strategically defined and maintained over time, across conditions, and modalities.

**Quality Pursuit versus Quality Assurance.** Although there is no clear and common definition of what constitutes quality (Schindler et al., 2015), there are nevertheless system actors interested in advancing its pursuit and maintaining confidence in its presence. In higher education, quality assurance (QA) generally falls under the purview of accreditors as well as state and federal regulators (Hamlin & Williams, 2019). Known as “the triad,” each plays a different role in assuring quality generally and distance education specifically (Gaston, 2013). Of the three, established national, regional, and program accreditations have broad oversight over what constitutes quality and continuous improvement. Their confirmation has great significance as it determines participation in federal financial aid programs under Title IV of the Higher Education Act (U.S. Department of Education [USDE], n.d.).

Historically, accreditors ensure that distance education is at least as good as those offered in traditional classrooms. Therefore, they seek to confirm that institutions integrate online learning courses and their programs through demonstrations of program alignment with institutional goals, processes, and commitment of institutional resources (Eaton, 2015). The seven regional accreditors, however, differ in what, how, and why they confirm accreditations – resulting in variations of what quality and continuous improvement mean. To boot, each state has an agency with the authority to license their colleges and universities against their regulations. Therefore, postsecondary institutions that offer online learning in multiple states must become licensed in each state, a time-consuming and complicated affair. To facilitate licensure and to make it easier for students to enroll in programs outside of their home state, the National Council for State Authorization Reciprocity Agreements (NC-SARA) came together to create agreements for standards comparability in distance education across four regional accreditation areas (Hamlin & Williams, 2019). The presidents of each regional accrediting body collectively

formed the Council of Regional Accrediting Commissions (C-RAC) to affirm common values and principles and to collaborate in the alignment of expectations across the nation's colleges and universities. One such manifestation of their collective work was the development of the Interregional Guidelines for the Evaluation of Distance Education, first issued in 2002 and updated in 2011. See Table 3 for the Guideline's hallmarks of quality. See Appendix A for the analysis and evidence sought by the C-RAC to demonstrate the "Nine Hallmarks of Quality."

**Table 3**

*Interregional Guidelines for the Evaluation of Distance Education*

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**The Nine Hallmarks of Quality**

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1. Online learning is appropriate to the institution's mission and purposes.
  2. The institution's plans for developing, sustaining, and, if appropriate, expanding online learning offerings are integrated into its regular planning and evaluation processes.
  3. Online learning is incorporated into the institution's systems of governance and academic oversight.
  4. Curricula for the institution's online learning offerings are coherent, cohesive, and comparable in academic rigor to programs offered in traditional instructional formats.
  5. The institution evaluates the effectiveness of its online learning offerings, including the extent to which the online learning goals are achieved, and uses the results of its evaluations to enhance the attainment of the goals.
  6. Faculty responsible for delivering the online learning curricula and evaluating the students' success in achieving the online learning goals are appropriately qualified and effectively supported.
  7. The institution provides effective student and academic services to support students enrolled in online learning offerings.
  8. The institution provides sufficient resources to support and, if appropriate, expand its online learning offerings
  9. The institution assures the integrity of its online offerings.
- 

Source: The National Council for State Authorization Reciprocity Agreements (NC-SARA, n.d.)

A close look at the C-RAC guidelines and demonstrations of quality reveals a propensity to prefer *processes* in pursuit of quality as evidence of quality versus evidence demonstrated in products or outcomes. Guidelines and supporting activities guide the need for “resources and processes essential to achieving institutional or program mission at a high level of performance” (Eaton, 2017, p. 1). It is arguable whether the terms of the guidelines assure quality or account for the efficacy of strategies pursued. Again, this accreditation posture is likely due to a culture that defers to individual higher education institutions to interpret quality in their context on the one hand and that “faculty members should hold primary responsibility for curricular development and instruction” on the other (Gaston, 2013, p. 11). A relatively high level of guidance, however, leaves much unattended downstream. For example, the guidelines do not require analysis or evidence in how processes, procedures, or plans address disparate results in online learning across student groups. Such matters would likely fall under the quality instructor and student performance indicators Schindler et al. (2015) discussed; however, these are not traditionally adopted by the accreditation system as part of its oversight function.

Student outcomes such as course and degree completion rates are nevertheless on the forefront of key system actors such as policymakers, employers, and the larger public. Stakeholders who are not satisfied with higher education outcomes are unconvinced of the efficacy of accrediting bodies to bring about change. They are alarmed by the rise of “diploma mills,” so-called because of the rise of bogus credentials, issued by fraudulent institutions and programs with claims of accreditation – often in name only (Hamlin & Williams, 2019). As regulators become more concerned with the quality of higher education in general and of online learning in particular, their attention shifted in the mid-2010s to gain more oversight over what constitutes quality and its demonstrations (Hamlin & Williams, 2019) through rulemaking and

reauthorization of the Higher Education Opportunity Act (HEOA) (Ewell, 2015). Policymakers increasingly look to assure the public's confidence in the higher education system by augmenting the nation's accrediting system to include focus on graduation rates, student debt load, and job placement rates:

It is now no longer enough for accreditors to be accountable to the institutions and programs they review and the higher education community generally, as in the past.

Accountability to the broad public arena is emerging as the primary lens through which accreditation is judged (Eaton, 2017, p. 2).

Increasingly assurance is synonymous with accountability not just procedurally or in the presence of resources committed to online programs – as has been the focus of accreditations in the past. Today, there are calls for consistency and transparency, emphasizing results (Ewell, 2015), all of which inevitably link to the discussion of standards. There are also shifts to focus on how providers of online learning can differentiate themselves from other providers. One such vehicle for differentiation is the adoption and application of quality standards.

**Rise of Quality Standards.** A lack of consistency across the accreditation bodies, maturation of distance education as a formidable force in higher education, and shift to greater regulatory control for a more pragmatic approach to quality assurance arguably has broadened the appeal for an articulated and specific set of quality standards. This is a monumental act and involves multiple players in the standards movement. Early providers of distance education focus their advocacy for online learning in frameworks and standards that support online learning institutions and their providers (Hamlin & Williams, 2019). Among the pioneers are Online Learning Consortium (OLC) and its “Five Pillars of Quality Online Education” and Quality Framework in 1997, and Quality Scorecard Suite in 2011; Western Interstate Commission for

Higher Education (WICHE) Cooperative for Educational Technologies (WCET) and its “Best Practices for Electronically Offered Degree and Certificate Programs” in 2002; the American Distance Education Consortium (ADEC)’s “Guiding Principles for Distance Teaching and Learning” in 2003. Common among their contributions to the standards movement are institutional commitment of resources, comparability to rigor and curricula of traditional classrooms, instructional effectiveness in online learning, preparedness of and support for distance education faculty, student engagement, comprehensive access to support services, regular evaluation of online courses (Hamlin & Williams, 2019). These touched various aspects of the model presented by Schindler et al. (2015), especially they relate to the broader qualifications of quality – administrative, student support services, instructional, and student performance.

Sensing growth in online learning and the growing sophistication of prospective online users to assess quality in their choice of online programs, online learning providers (e.g., colleges and university programs) and quality assurance providers (e.g., external validators of quality in online learning such as Quality Matters) seek to differentiate themselves in the application and validation of quality through established standards (Hamlin & Williams, 2019). An example of an institution that developed its own quality assurance standards is California State University Chico with its Quality Learning and Teaching (QLT) instrument to evaluate the quality of online and hybrid courses (California State University Chico, n.d.). Another is the Washington State Board of Community and Technical Colleges (SBCTC) with its Washington Course Design Checklist, currently in its third version at the time of the writing of this dissertation, which intends to assure quality in four areas: course design, outcomes, and objectives, assessment and feedback, and materials and tools (SBCTC, 2021).

An example of external parties created to assure quality mechanisms is Quality Matters (QM). Established in the early 2000s, QM, a non-profit organization, developed a comprehensive framework and rubric of standards as mechanisms for quality assurance (QM, n.d.a). Unlike the OLC and its Quality Scorecard Suite and its interest in the assurance of quality at the institutional level, the QM-branded instrument is concerned with courses. QM uses trained review specialists to engage in a peer-review and consensus process. This practice evaluates courses against researched-based standards to assure and scale quality. Noteworthy is an underlying assumption that QM standards and their review processes provide consistency of application across contexts, thereby reducing variance in quality. This peer-review approach is perceived as a strength within the QM model as faculty prefer to maintain oversight of their work. It also focuses more on evaluating the design of courses rather than the delivery; though, many QM users argue that the two are intrinsically tied – that good design accounts for delivery. The QM Higher Education Rubric, regularly updated, has become a benchmark and model for other quality assurance mechanisms. For example, the Open SUNY Course Quality Review (OSCQR) rubric and process have foundations in QM (Hamlin & Williams, 2019). As a well-respected and recognized validator of quality, it has more than 1,500 colleges and universities, mostly in the U.S. with a few abroad. As the QM framework and rubric gains traction, a growing interest in teacher-focused professional development has gained traction (Hamlin & Williams, 2019). In 2016, QM launched the QM Teaching Online Certificate to build instructor capacity to demonstrate mastery in online teaching with an appreciation of learning online from the student's perspective (QM, n.d.b).

### *Professional Development*

Higher education faculty are known as subject matter experts (SMEs), not necessarily as teaching experts (Halupa, 2019; Postareff et al., 2007). That is, the primary job of the postsecondary educator is not teaching per se but content maintenance and knowledge transfer. This is evidenced by many professional development offerings focused on researching the discipline, not instruction (Haras, 2018). Nevertheless, with stakeholder calls to increase completion rates and eliminate significant outcome gaps, there is growing attention on the need to attend to pedagogy to promote student learning (Gilbert & Gibbs, 1999; Meskill & Anthony, 2007). There is also growing attention on facilitating the development of the teacher as an integrated identity of faculty members. For example, Lieff et al. (2012) found that faculty grew in their identity as educators as they engaged in the work of being educators versus as a researcher or as an academic. In turn, as their identity as instructor deepened, they also sought to improve their instructional abilities and found satisfaction in contributing to student learning. While this development of identity from SME to one that integrates being a teacher can be a function of PD, it is not necessarily an explicit goal of most PDs in higher education in general or in online learning. This may be a function of a general acceptance that SMEs are relatively free to develop and deliver curricula under the right of academic freedom (American Federation of Teachers [AFT], n.d. para. 1). As such, it is not surprising that PD is generally passive, fragmented, non-collaborative, and not focused on systemic change (Fullan, 2001; Reeves, 2012).

However, the growth of online learning and the persistence of outcome disparities should give higher education leaders pause to provide PD opportunities that improve online teaching and learning (Vaill & Testori, 2012). To be effective online teachers, faculty need to know how

to engage students in the content using technological pedagogies in ways that promote student success (Alexio-Ray & Bentley, 2015). Without online teaching competencies, instructors can inadvertently confuse, frustrate, or cause students to be lost in the content (Alexiou-Ray & Bentley, 2015; Fish & Wickersham, 2009). Faculty need to understand how online teaching is different from traditional instruction (Hale, 2012). Part of becoming knowledgeable and proficient in pedagogy is to explore practices in a collaborative environment where questions are critically raised and insights are shared (Hahn & Lester, 2012; Brooks et al., 2011; Sorcinelli et al., 2006; Yun et al., 2016).

If PD were a gauge of where institutions believe they can address problems of online teaching and learning, it appears that the system relies heavily on individual instructional initiatives (Gast et al., 2017). Indeed, much of PD is supplemental, not integral or obligatory to the teaching practice (Haras, 2018). Best practices in the field are also slow to disseminate to faculty (Mundy et al., 2012). Most are designed to inspire changes in individual practice through reflection, not through practical explorations of evidence-based practices. Few facilitate collaborative practices despite a growing recognition of its value to do so. In the absence of systemic structures to bring faculty together and establish standards of work, variances in quality would consequently persist in the system. In the absence of agreed-upon standards in online practice, the reliability of the quality of the work remains elusive. It would certainly be in any other discipline or industry of complexity (e.g., medicine, law, nursing).

Regrettably, there is little research on the effectiveness of PD in the postsecondary teaching practice in general (Postareff et al., 2007). Indeed, higher education PD relies mainly on self-reported learning gains by instructors, not necessarily captured by structured evaluations with student outcomes as supporting data. Though, studies do show that the more an instructor

engages in sustained PD, the more their teaching changes to align with their goals (Flaherty, 2016). Studies focused on the efficacy of PD in online learning are fewer still. Studies on the success of PD to improve blended learning, for example, are scarce and have not distinguished between blended teaching competencies from those of traditional and purely online ones (Pulham et al., 2018). Few PD studies focused on empirical evidence on the success of instructional practices to eliminate significant disparate student outcomes. Such distinctions are important to assess the usefulness of specific types of training and the value gained by the continued use of public dollars to deliver them.

There is, however, literature about how perceptions and attitudes of as well as behaviors in teaching affect instructional practices. For example, Stuart and Thurlow (2000) found that prior childhood experiences heavily influenced how instructors behaved in classrooms and believed about themselves as teachers. Other studies found faculty approaches to teaching are influenced by various notions of teaching (e.g., Kember & Kwan, 2002; Prosser et al., 1994). Those who are more structured in the transfer of knowledge take on a teacher-centric approach. In contrast, those who are more facilitative of intellectual development take more of a student-centric posture. Both orientations have different PD considerations in preparing teachers for online learning and attending to students' varying needs. In any event, there are open questions about the efficacy of PDs focused on encouraging individual instructors to change their practice.

A notable discussion about the effectiveness of PD and training programs is by Beer et al. (2016). They discuss how despite millions of dollars committed to training employees in the corporate sector of the U.S., “Overwhelming evidence and experience shows ... that most companies are unable to transfer employee learning into changes in individual and organizational behavior or improved financial performance” (p. 1). They argue that failure to effect change is

rooted in where the focus of transformation lies. Whereas most training inspires people to change with little to show for it, Beer et al. (2016) contend that it is the change in the system's design that affects real change. Changes in patterns of roles, responsibilities, and relations affect real and sustained behavioral change. Change the structure of the system, change the behavior to effect change. This logical strain is inherently a system thinking approach to constructing effective PD.

### **Gaps in Literature**

Much is known about the nature of online learning and factors that affect the performance of learners, teachers, and institutions. Most studies seek to relate or find linkages between factors (e.g., student characteristics, course-taking behaviors, and teacher perceptions) to student outcomes (e.g., course complete rates). Critical theorists attempt to explain the role of macroeconomic and cultural factors such as racism and class as systemic barriers to student success. However, few studies and hypotheses use systems theory and system archetypes to explain how beliefs create structural patterns of behavior that result in visible measures of systemic performance. Fewer still examine perceptions and behaviors as leading indicators of performance. Specifically, there is little discussion on how cultural structures that prioritize autonomous and isolated instruction contribute to significant variance in instructional design in online learning. There is little exploration on how *variances* in instructional design and delivery contribute to missed opportunities to learn *at high levels*; how these variances have *downstream effects* as students struggle to pass progressively more challenging courses in their educational pathways, putting at risk their likelihood of credential attainment; and how these *negatively and disproportionately impact* students from historically marginalized communities. I emphasize nuanced distinctions so as to put a light on where levers of change need to meaningfully impact.

In my practice, I observed that quality variances are largely avoidable with the application of proven methodologies that work in other fields and the collaborative integration of various expertise across domains.

The next chapter discusses the EDD-ToC based on the literature review and informed by professional practice. The EDD-ToC explains systemic structures that create harmful variance in educational quality, provides a framework for evidence-based practices to eliminate equity gaps, and operationalizes the framework to increase student outcomes while eliminating significant disparate student outcomes. Chapter two also provides a close look at the EDD-ToC as it manifests in the pilot intervention.

## **Chapter 2: EDD Theory of Change and Pilot Intervention**

Alone we can do so little; together we can do so much.

~ Helen Keller

This chapter begins with a background of the college and the conditions wherein the pilot developed and occurred. It discusses the unified systems change (USC) framework used to describe the structural problem, develop the Equity by Design and Delivery (EDD) theory of change (ToC), and operationalize the intervention. A narrative of the structural problem using systems theory follows. I then discuss the EDD-ToC and its parts as it lives in practice to explain its theoretical suppositions and applications about equity in context. This extended chapter intends to describe the structures created by the EDD-ToC to change perceptions and behaviors that contribute to learning inequities. Consider this chapter as a description of the situation under study.

### **Background**

#### ***College and Program***

The publicly-funded college in which the EDD model pilot occurred is mid-sized, with over 10,000 students in 2019 fall term enrollments. It is in a northwestern state in the U.S. and offers certificate, associate, and baccalaureate degrees. Like other community colleges, its student population is considered nontraditional: older, more diverse, more likely to have dependents, and have proportionately more first-generation college students relative to traditional four-year universities (Jaggars, 2014).

The program wherein the pilot took place is in a workforce training department that grants certificates as well as associate and baccalaureate degrees. Its lower-level (100- and 200-level) courses are delivered in traditional F2F classrooms, blended (part online, part in-class),

and fully online courses. Its baccalaureate program is a mixed modality where courses are blended and entirely online. Beginning in the 2019-2020 academic year, the department offered nearly all of its courses as either hybrid or online. Relative to all students at the college, students in the department tend to be older, relatively as diverse, and with similar gender mix as the rest of the student population, but more likely to be of low SES, fully employed, and represent a larger contingent of first-generation college students. See Table 4 for a summary of student demographics.

**Table 4***2018 – 2019 Student Demographics*

Characteristic	All Students	E-Learning	Department (Study Site)
Age: 24 years and older	51%	37%	59%
Gender	63% Female 36% Male	66% Female 34% Male	65% Female 35% Male
Race / Ethnicity			
Students of color	42%	38%	40%
White	51%	56%	55%
Family Status	48% Without Dependents	53% Without Dependents	44% Without Dependents
Pell Grant	24%	27%	37%
Full-Time Employment Status	19%	17%	23%
First Generation College	68%	67%	72%
Veterans	18%	11%	23%
Disability	6%	6%	5%
Enrollment Status	47% Full-Time	32% Full-Time	48% Full-Time

*Note:* 2018-2019 academic year is representative of typical demographics. The 2019-2020 data is incomplete and reflects COVID-19 enrollment data, not representative of a normal year at the college. Students counted in the E-Learning column are those who take at least one blended or 100 percent online course during the academic year. Source: College Tableau

At the college, course and degree completion rates for first-generation college students, students of color, and students of low SES tend to be lower than their counterparts (College Tableau Dashboards, 2021), a common occurrence in the higher education system. For example, Engle and Tinto (2008) found that first-gen (as they are often called) students are four times more likely to leave higher education institutions. They face significant challenges navigating and satisfying the demands of the academic world and meeting their obligations and expectations of their home world (Mitchell, 1997). They have common struggles, including a lack of knowledge of or how to use institutional supports (e.g., academic advising, counseling, tutoring, library systems, financial aid). They often work to support their family. Many find that relationships with family and friends who did not go to college become strained as first-gen students are perceived as changing and becoming different from their original cultural references (Lara, 1992; Richardson & Skinner, 1992). This strain becomes a source of stress as they strive to make sense of their new surroundings.

### ***Institutional Transformation and Enabling Conditions***

The college began a strategic journey to remove systemic barriers to broad student success in the 2015-2016 academic year. An academic year starts in the summer and ends in the following spring. It refocused its operational efforts to center equity as its aim. It referred to persistent disparities in completion rates between White students and students of color as

evidence of systemic barriers to equitable outcomes. It set targets for three-year degree and certificate completion rates in the fall of 2015. What equitable outcomes would empirically look like were not necessarily well defined at the instructional level, but there was general agreement that there should not be significant and ongoing differences in course and degree completion rates among student groups. The college's strategy was part of its work as a member of the Achieving the Dream (ATD) network. This national nonprofit organization brings together over 300 colleges in 45 states to implement evidence-based practices to improve student learning across the K12 and higher education systems (ATD, n.d.d).

Among the college's ATD strategies was the democratization of data where the leadership invested in collecting, organizing, and presenting academic outcomes (e.g., course grades and degree completion rates) and other student achievement-related metrics, made accessible to all faculty via Tableau, a data visualization software. The college put new structures in place for the use of the data to inform instruction. For example, the college trained faculty to retrieve data and apply findings during a newly established annual assessment of student outcomes. The college supported this work by creating the Outcomes Team (OT), made up of a group of faculty members, of which I was one beginning in 2018, and led by an administrator focused on the alignment of outcomes, content, and assessment. An OT committee examined instructional policies and procedures, in which I was the chair. Several committees were also charged with reviewing curriculum and supporting faculty before formal consideration and adoption by the college's Learning Council, of which I was a voting member. This work revealed many challenges before the college to achieve student success goals. Among these was how to unify and connect efforts by full-time and part-time instructors – the latter making up over 60 percent of the faculty body.

Regrettably, adjunct disconnectedness to the college reform efforts posed significant limitations to wholesale strategic changes. Part-time faculty were not regular participants in wide-scale professional development and institutional activities – mainly due to budgetary constraints and a host of other reasons, including multiple instructional assignments across colleges in the state. While there was an awareness of the need to involve part-time faculty more in the reform efforts, there was a level of resignation that deep involvement was unlikely. As a result, some full-time faculty came up with creative means to bring part-time colleagues closer to the departmental intents. For example, faculty put forth course recommendations with numerous and detailed course objectives before the Learning Council for institutional review and approval. When asked why they detailed course objectives in such a way, they cited the need to ensure that adjunct faculty knew what content to cover. As a result, course proposals behaved more like curriculum outlines or syllabi, embedding assignments with learning outcomes. These comprehensive outlines created tensions between review committees who regarded learning outcomes as limited overarching takeaways and faculty who sought to reign in content variance between colleagues teaching the same course. From an institutional review and approval perspective, significant variances in course outlines made it challenging for the OT to support faculty and for Learning Council to discern course purpose and objectives. At the time of this dissertation, the college was engaged in clarifying the purpose of course outlines to faculty.

Another systems-wide strategy was the faculty-led implementation of Guided Pathways (GP), an initiative to streamline student education plans to facilitate graduation. Over time, the college instituted other initiatives vetted and supported by most faculty via a matrix of shared governance processes. As a result, faculty were involved and had a voice in the pursuit of change efforts. During much of this work, I was a participant and observer as I was an adjunct faculty

member in the spring quarter of 2016 and joined as a full-time tenure track professor in the fall of that year. Although the college made significant progress in increasing completion rates, outcome disparities between White students and students of color persisted. These were the conditions in which leadership pursued a new baccalaureate program designed for non-traditional students who would not otherwise have efficient means to gain their bachelor's degrees.

As a new tenure-track faculty member in the fall of 2016, I focused on evidence-based, equitable practices as this was also my work as a K12 teacher. I let my tenure committee members know of my interest in online learning and took the required training to teach online. I was thrilled to know that the college made access to student data readily available. Taking a close look at student outcomes made student learning visible to me, as Hattie (2016) might say. In February of 2017, the college engaged in its first annual assessment day, where faculty examined student outcomes, retrieved from the Tableau dashboards, against key course assessments. The college tasked the faculty to examine various grades and course completion data and complete an annual review of the program. All three full-time faculty and one part-time faculty in the department participated. While I was familiar with outcome disparities across student groups from my previous work in K12, it was the first time I had access to and could disaggregate higher education student data. I became curious about significant outcome disparities and significant variance in grades and completion rates in departments and credentialing programs.

### ***Birth of a Program***

In 2017, leaders at the college asked me to conduct a feasibility study for a new baccalaureate program. Having found an educational pathway gap, I recommended that we seek

state approval for a bachelor's degree in applied business to serve busy, place-bound, working adults who did not have efficient options to earn a four-year degree. Like the average community college enrollee, they would be non-traditional students – likely older, more ethnically diverse, with dependents, and need to balance work, life, and school commitments. I, therefore, recommended a mixed-modality (online and blended) program.

Leadership agreed, and I proceeded to write a baccalaureate proposal responding to criteria established by the board responsible for coordinating the state's public two-year colleges. Criteria included such program-level considerations as curricular rigor, qualified faculty, selection and admission processes, appropriate student services plan, and commitment to build and sustain a high-quality program, largely budgetary. These criteria and their standards served as a kind of quality assurance for baccalaureate programs across the state. Given my long-standing interest in equitable education, I explored a holistic programmatic framework to align the state's criteria and the college's mission toward quality educational opportunities to serve its diverse community of learners within a context of ever-changing and challenging conditions. I chose to ground the framework in academic and operational areas such as evidence-based pedagogical practices, wrap-around student services, affirmative professional development, and continuous quality improvement.

As I mapped the program design, it became evident that there would likely be challenges to programmatic fidelity and efficacy to close persistent equity gaps, one of the college's goals. Among the more significant of these were existing variances in course and associate degree completion rates, especially across sections of the same course. My professional observations and examination of student outcomes as recorded in the college's Tableau dashboard concluded that these variances were logical consequences of siloed instructional practices and inconsistent

or lack of program-level policies (e.g., grading, point distribution, and use of rubrics). Given my familiarity with operations, I understood that varied inputs (what the program and its faculty put into the courses) would naturally result in varied outputs (what students learned as measured by academic metrics). It was also clear that these variances (in inputs and outputs) were natural occurrences of a profession practiced in isolation (Gaikwad & Brantley, 1992; Flinders, 1988; Lortie, 1977) and operationalized in a system designed to maintain this status quo.

### *Operational Challenges*

Independence and separation from colleagues presented at least two paradoxes: teachers attend to many students at a time – requiring a full array of interpersonal (and now intercultural) skills – with little time or incentive to discuss their work with colleagues, on the one hand; and teachers see their classroom as both barrier to and a means of protection from outside interference, on the other (Flinders, 1988). In higher education, the teaching experience has another layer of tradition: academic freedom, “the right of faculty members, acting both as individuals and as a collective, to determine without outside interference: (1) the college curriculum; (2) course content; (3) teaching; (4) student evaluation; and (5) the conduct of scholarly research” (AFT, n.d. para. 1). This right is defended in collective bargaining agreements to preserve “colleges and universities [as] ‘safe havens’ for research, places where students and scholars can challenge the conventional wisdom of any field—art, science, politics or others” (AFT, n.d., para. 1).

Academic freedom, while well established, is recognized by faculty as not meaning “anything goes” (AFT, n.d., para. 3). It is generally understood as limited to scholarly research or the production of ideas, which manifests in content and its delivery. Nevertheless, it leaves ambiguous what role of academic freedom plays in pedagogy and how it accounts for student

learning. By practice, tradition, and freedom to teach content, higher education faculty implicitly expect to be and are explicitly left alone to teach content as they see fit. As a tenured faculty member, I observed that this tension between the cost of going alone and autonomy was not lost on most teachers. With the increasing demands on instructors to attend to the various needs of students, uphold rigor, maintain high expectations, and eliminate outcome disparities across student groups, teaching in isolation can lead to burnout and feelings of helplessness (Gaikward & Brantley, 1992), which would logically affect student outcomes. Yet, little research explores the circular relationships between isolated instruction, quality variance in instructional design and its delivery – especially online instruction, disparate student outcomes, and teacher frustrations – and its relationship to disparate student outcomes.

The literature gap led me to dig deeper in the college’s database to examine course and degree completion rates. The data led to one conclusion: if students of color and students of low SES continued to complete their associate degrees at low rates, they would apply for baccalaureate programs at lower rates. This trend would have downstream effects. The research was unequivocal: family-wage jobs increasingly required baccalaureate degrees for entry (Burning Glass, 2014). Therefore, lack of access to baccalaureate degrees would contribute to the widening income divide already at play in the U.S. (Carnevale, 2020).

### *Doctoral Studies*

In the summer of 2018, I began my doctoral studies focusing on equitable education in online learning. My interest in distance education deepened as I taught online and became more aware of the outsized role online learning played as the digital revolution marched on to affect all areas of modern life. As I delved into the data, I became increasingly concerned with educational

disparities between student groups – especially as these affected students of color and students of low SES, a growing base of the population (U.S. Census, 2015).

My backstory, professional work, observations, and doctoral studies coalesced into exploring how higher education subsystems contribute to disparate outcomes, especially in online learning where enrollments are increasing (Allen & Seaman, 2013) and where outcome disparities are greater (Jaggars & Xu, 2010). I say subsystems in that all complex systems are made of a hierarchy of interlocking subsystems (Meadows, 2008). These hierarchies serve specific purposes invisible to most system actors. They function to serve lower levels for the system to function properly. Undesired outcomes are therefore lagging indicators of a malfunctioning system where parts are behaving in ways that counter stated goals. That is, the system's purpose, known or unknown, can only be deduced from its results (Meadows, 2008). This awareness led me to create a systems map to illustrate how structural parts interrelate and behave to create missed opportunities to learn at high levels and contribute to persistent outcome gaps. This map led me to unite multiple frameworks, organize response principles, and operationalize an intervention to the structural problem.

### ***Literature Review and Birth of a Theoretical Framework***

As the literature review in chapter one suggests, research about distance education generally talks about problems of learning and practice in a linear fashion. For example, discussions about grades and completion rates as lagging indicators (Reform Support Network, 2015), so-called because they measure a current state and appear after a change effort, make relatively direct connections between variables as cause and effect. While there is discussion that distance education is part of a system (Moore & Kearsley, 2004) and that outcome disparities in higher education are systemic (Carnevale, 2020), none that I came across discuss such problems

in terms of their system archetypes. System models are important because they can help visualize and describe how parts connect, interrelate, and behave by implicit or explicit design (Meadows, 2008; Senge, 2006). They can also show where system traps are and how to seize opportunities (Meadows, 2008). Without them, the problem remains abstract or anecdotal – ripe for blaming system actors, especially teachers, who may be largely unconscious of and subject to powerful invisible forces that maintain status quo behaviors. A system map can help reveal system delays and leverages between inputs and outputs. It can help make visible the logic of feedback loops and how they maintain systemic behavior, set actions in motion, create structural patterns, etc. To be useful, the system map or diagram needs to be based on empirical evidence, verifiable, or at the very least recognizable in meaningful ways by those who experience its effects.

### **Theoretical Framework**

A need to diagram what may be happening in the system is an essential step in problem definition (Bryk et al., 2016; Crow et al., 2019). It can help identify and explain how beliefs create structures that lead to behavioral patterns, which lead to desired or undesired results (Meadows, 2008; Senge, 2006). Without a clear narrative of how specific structural components come together to contribute to inequities, references to systemic barriers remain abstract. With few tangible areas to address, abstraction of a complicated systemic challenge can lead both faculty and administration to seek simple responses to a complex and deeply rooted problem. Awareness of this gap in literature led me to apply systems theory by Meadows (2008) and Senge's (2006) diagramming technique to conceptually illustrate what I analyzed and evaluated as archetypal behaviors that connected the problems of learning and practice.

As the program proposal matured and institutional processes moved to approve the baccalaureate program, I focused my attention on diagramming the instructional design and

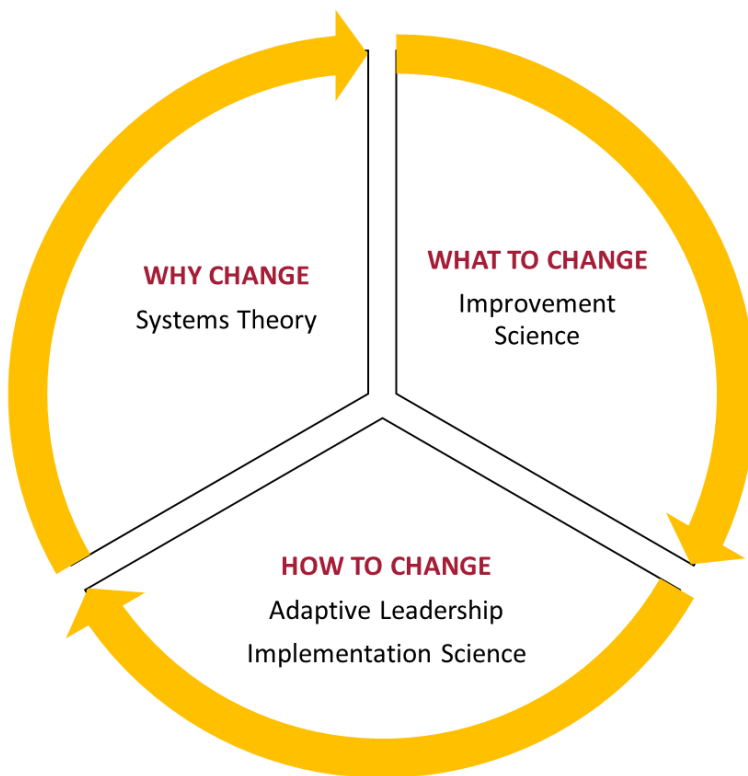
delivery subsystem. I focused on this level of the system hierarchy to understand how inputs and outputs interrelate and create patterns of behavior that led to disparate student outcomes. In so doing, I was able to backward map along multiple feedback loops to identify leading indicators, variables that predict system direction and outcome. It became evident that upstream causes reside in faculty and student perceptions (e.g., beliefs about learning, identity as teachers, self-efficacy) and their behaviors (e.g., choices, actions – individually and collectively). I integrated relevant aspects of what the literature suggested and my professional observations of how faculty try to solve problems of learning in the diagram. This activity and its resulting system diagram became the genesis for the EDD-ToC and served as the “why” or reason for change. I then created a conceptual framework to organize the “what” to change by synthesizing, organizing, and unifying strategic areas based on evidence-based practices. To put the framework into action, I created the EDD model as the “how” to change.

My background in business led me to apply implementation science as a methodology to increase the EDD model’s effectiveness against desired outcomes. Technical implementation matters lent themselves to known and established operational processes (Heifetz, 1994). However, changes involving human perceptions and behaviors are far more complicated. After considering the context of the college and the required behavioral change (from isolated to collaborative practices), I relied on the adaptive leadership principles by Heifetz to reconfigure feedback loops within the realities of a deeply social and complicated phenomenon. These loops are basic structural operating units that carry information and affect levels of stocks in a system. “Stocks are the elements of the system that you can see, feel, count, or measure at any given time” (Meadows, 2008, p. 17). Together, systems theory, the sciences of improvement and implementation, and principles of adaptive leadership served as a unified systems change

framework through which the EDD-ToC and its parts developed and iterated. See Figure 7 for an illustration of the framework. What follows is a discussion of each part of the framework related to the conditions within the college, where the pilot resides.

**Figure 7**

*Unified Systems Change Framework*



*Systems Theory*

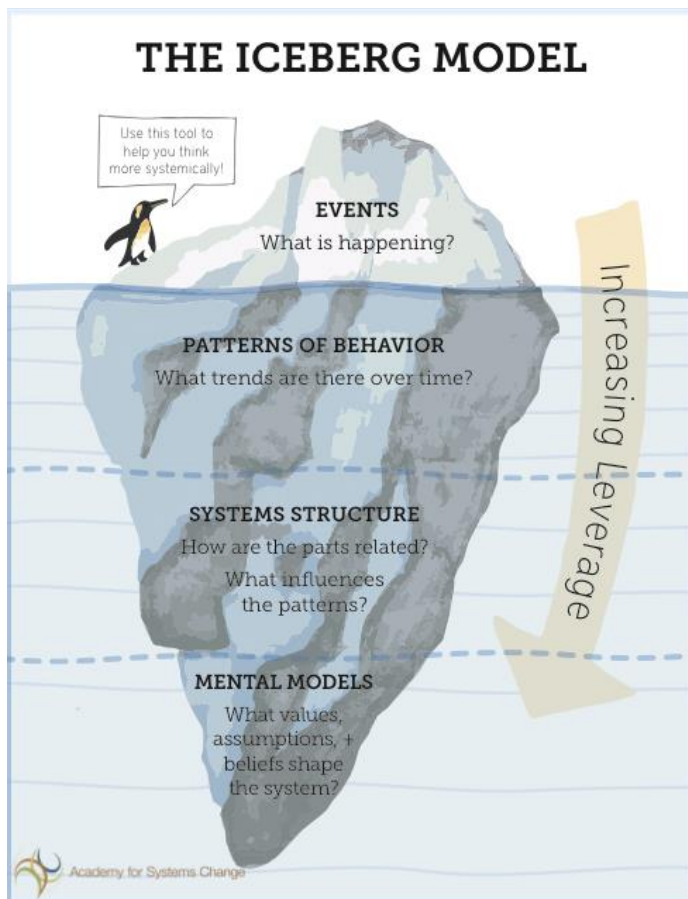
If a factory is torn down but the rationality which produced it is left standing, then that rationality will simply produce another factory. If a revolution destroys a government, but the systematic patterns of thought that produced that government are left intact, then those patterns will repeat themselves.... There's so much talk about the system. And so little understanding.

—Robert Pirsig, *Zen and the Art of Motorcycle Maintenance*

A system is made up of interconnected intangible and tangible parts that are organized for a purpose (Meadows, 20018; Senge, 2006). Underlying the system is a set of beliefs and assumptions (mental models) that “shape practices, guide how people do things, and, in turn, determine what skills and capabilities people develop based on those organizational practices” (Senge, 2006, p. 285). How these systemic parts interact to create their own patterns of behavior over time, which show up as events that we can feel, see, or measure. See Figure 8 for a graphic conceptualization of the concept of this system as the Iceberg Model by the Academy of Systems Change of the Donella Meadows Project.

### Figure 8

#### *Systems Thinking Iceberg Model*



Source: Academy of Systems Change, DonellaMeadows.org

The system may be affected by outside forces such as a diversifying student populace, increasing need for advanced degrees, or a pandemic. Still, the way it responds is a characteristic of itself. The system creates its own behavior because of its underlying beliefs and structures (Meadows, 2008; Senge, 2006). A similar event that affects one system may produce a different response when encountering another. For example, persistent low graduation rates motivated the college of this study to undergo transformative changes through the Achieving the Dream (ATD) network, a non-profit organization supporting community colleges in the U.S., and the Guided Pathway initiative. Other colleges similarly committed to ending gaps may pursue similar strategies but have different outcomes. Problems that persist within a system are mainly characteristic of system structures that produce them (Meadows, 2008; Senge, 2006). Within the college, reform strategies live alongside legacy structures (e.g., course development, professional development, tenure process) resistant to change. New and old structures interconnect and act with visible and invisible, yet palpable, tensions.

A change in one part of the system affects other parts of the system simultaneously through feedback loops. These loops affect stock levels. Among the more consequential stocks are hidden mental models or beliefs (motivated by values and cultural norms), which drive behaviors or practices (Meadows, 2008; Senge, 2006). Educator perceptions about their role as SMEs, degree of identity integration as a teacher, orientations to academic freedom, openness to certain types of professional development, and other stocks inform how and in what ways college leaders pursue and affect systemic change. Without understanding how system parts move together and affect stock levels, it would be incredibly challenging to understand why certain strategies that appear to be promising at the outset encounter limiting conditions that prevent further progress.

A system's function or purpose is not always evident (Meadows, 2008). Meadows says, “Purposes are deduced from behavior, not from rhetoric or stated goals” (p. 14). Carefully mapping the structures that create the behavior can show how subunits interact and what their dynamics produce. This exercise can reveal how the system perpetuates its existence. It can help system actors understand that “one of the most frustrating aspects of systems is that the purpose of subunits may add up to an overall behavior that no one wants” (Meadows, 2008, p. 15). In mapping the system, it is also important to be aware of how external factors (e.g., macroeconomic forces) affect internal systems. Everything is ultimately connected!

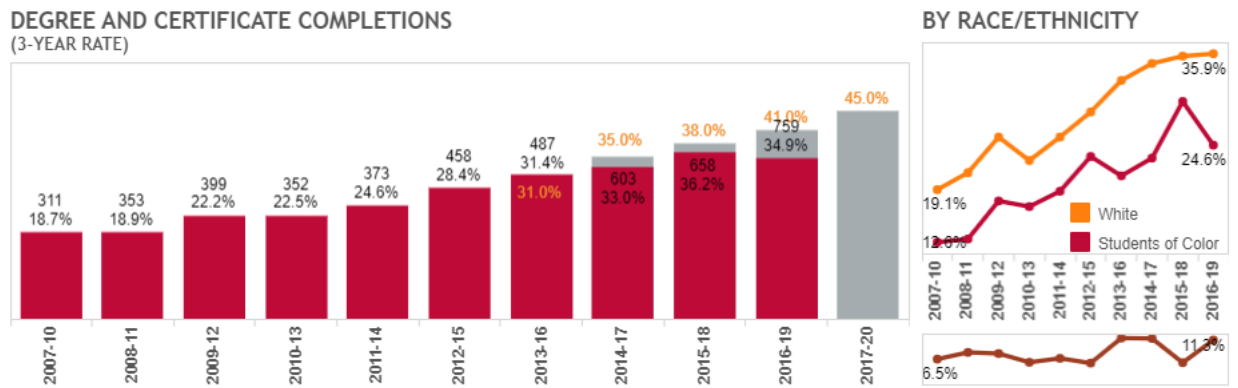
For example, public colleges live within a larger system governed and informed by dynamic interplays among economic, political, and cultural forces to name a few. For example, globalization factors influence curriculum development (Rusciano, 2014; Zahabioun et al., 2013; Dale, 2000). Declining birthrates and diversifying populations affect student enrollments (Anderson et al., 2003) and how institutions serve historically marginalized communities (Roach, 2009). Federal and local policy funding shifts from enrollment- to performance-based challenge operational viability. Educator beliefs and values inform professional development, which impacts teaching and learning (Palermo & Johnson, 2019). These factors function as powerful drivers, which influence institutional-level behaviors and incentives. For example, adopting more baccalaureate degrees in a traditional two-year institution and offering more online classes are responses to macroeconomic drivers. Yet, as powerful as these drivers are, local economics of culture serve as countervailing forces to change. These hidden substructures can determine limits to institutional success (Meadows, 2008). The following are key archetypes relevant to challenges before the college of this case study.

**System Archetypes.** To understand how institutional structures contribute to patterns of outcome disparities, this part of the paper discusses specific system archetypes that (a) limit success, (b) shift the burden of solving fundamental problems to individuals applying symptomatic solutions, and (c) erode goals. Collectively, they help illustrate the system in need of change and lay the foundations for how the EDD model restructures patterns of behavior to result in intended outcomes. Contextualization of the archetypes includes examples as I observed them at the college of this study. I acknowledge that embedding my observations in the capacity of researcher as instrument has its challenges and would likely affect the contours of the findings (Xu & Storr, 2012; Stewart; 2010). However, excluding them would leave out relevant data on the development of the EDD-ToC and the implementation of the EDD model. The research design and methods in chapter three discuss protocols pursued to uphold ethical research standards, including applying member checking techniques to ensure the accuracy of study findings (Creswell & Creswell, 2018).

**Limits to Success.** The college realized positive outcomes by implementing strategies driven by its efforts in the ATD network, Guided Pathways, and other initiatives. The results are nevertheless mixed disparities despite multi-year-long efforts and extensive resources committed to broad student success. The college, for example, had progressive increases in three-year graduation rates from 18.7 percent in 2007-2010 to 34.9 percent in 2016- 2019. However, significant outcome disparities between White students and students of color persisted and regrettably increased between 2015-2018 and 2016-2019. See Figure 9 to illustrate the increases in completion rates and persistence of outcome disparities at the college of this study. This graph and others are regularly presented to faculty as checks on the college's progress.

**Figure 9**

*Three-Year Graduation Rates and Outcome Disparities for the College (2010 - 2020)*



*Note:* The greyed bars were target goals set in 2015 with no current completion data available for 2017-20. Students of Color exclude Asians.

Source: The college Tableau Dashboards (2021).

The persistent disparities in student outcomes can be explained by a limiting condition that may or may not be apparent (Senge, 2006) to the college. The solution is not to push for more growth using the same strategies. Continued application of methods that have not worked would result in more of the same – disparate outcomes. A critical intermediary process is identifying the constraint or limiting behavior and adopting a new approach (Senge, 2006).

***Shifting the Burden.*** A structural pattern common to systems is when an underlying problem generates symptoms that require attention (Meadows, 2008; Senge, 2006). In the higher education system, this fundamental problem is perceived as opportunity to learn gaps, or commonly referred to as “opportunity gaps” for short, which is difficult to address either because it is costly to confront or difficult to define. The symptoms of the problem, or lagging indicators, show up as outcome disparities across student groups. Within a culture of isolated practices,

well-meaning educators individually attempt to narrow these gaps with well-intentioned easy “fixes” such as reducing assignments, lowering standards, adopting creative grading policies, and intensifying punitive measures to gain student compliance. These are so-called easy fixes because they are not evidence-based or meant to affect systemic change. They, nevertheless, result in short-term benefits but do not significantly change outcome disparities in their classrooms, let alone at the program or institution levels. Individual faculty efforts give the illusion of solving the problem, only to give way to uneven outcomes. These isolated attempts to solve common problems are themselves symptomatic of a larger structural barrier to transformative change. According to Lortie (2002), teacher isolation is a major obstacle in improving teaching and learning across American public schools.

In the college case, instructors were aware of outcome disparities through reports generated by the college’s institutional research (IR) department and made readily available in Tableau dashboards. The college’s IR trained instructors to use the data to assess student performance against learning outcomes as part of a college-wide annual assessment review process. Concurrently, the college offers in-service days focused on using data to inform student success. Professional development offerings were not unlike those offered across the country. They were well-meaning attempts to help advance instructional effectiveness. However, these singular, one-off training options presented an incoherent set of techniques that are at best quick fixes (Mizell, 2010). The lack of sustained and unified pedagogic examination of governing principles for effective instruction left most instructors unable to address systemic inequities beyond their individual capacity to solve (Darling-Hammond et al., 2017).

***Drifting Goals.*** A system can drift to low performance as it pursues goals but encounters difficulties in achieving them (Meadows, 2008). Prolonged gaps between desired goals and

actual performance can challenge system actors' perceptions of what the goal should be. For example, transformative changes take time to manifest in intended outcomes and can produce mixed results as the system adjusts. Differences in results may cause system actors to perceive isolated incidences as signs that things are not working and lead them to question what is possible. Such perceptions risk a drift to lower standards. Instructors experiencing persistent outcome disparities despite repeated attempts to eliminate them may doubt the viability of institutional goals. They may begin to believe that not much can be done and slowly settle for a lesser goal to feel better about efforts that repeatedly miss the mark. "That's the best I can do," they might say as they mediate perceptions of their efficacy as teachers in the face of sustained instructional challenges (Lieff et al., 2012). According to system theory, the way out of this system trap is to keep performance standards absolute using the same structures and methodologies that result in high performance (Meadows, 2008). Realizing desired outcomes requires effective improvement and implementation methods and strategies to sustain efforts in the face of resistance to change and tensions to keep expectations low (Bryk et al., 2016; Crow et al., 2019).

### *Improvement Science*

Inspection does not improve the quality, nor guarantee quality. Inspection is too late. The quality, good or bad, is already in the product. As Harold F. Dodge said, "You can not inspect quality into a product."

— W. Edwards Deming

Business and healthcare have long adopted processes and procedures to improve products and customer/client experience. They use continuous improvement methodologies like those organized and promoted by W. Edwards Deming. Today, educational leaders apply improvement

frameworks to address persistent challenges in education (Crow et al., 2019). Known as Carnegie's Principles of Improvement, this highly systematic approach to problem definition and problem-solving involves six central tenets listed in Table 5.

**Table 5**

*Carnegie's Principles of Improvement*

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Central Tenets of Improvement Science
1. Make the work problem-specific and user-centered.
2. Focus on variation in performance.
3. See the system that produces the current outcomes.
4. We cannot improve at scale what we cannot measure.
5. Use disciplined inquiry to drive improvement.
6. Accelerate learning through networked communities.

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Source: Crow et al., 2019

**Problem-Specific and User-Centric.** The first tenet of improvement science (IS) speaks to the importance of defining the exact problem to solve and connecting to those who are affected by the crisis. It needs to identify the problem in need of solving and why clearly. IS recognizes the importance of developing solutions that are created, supported, and sustained by the users in the system in a language that is meaningful to those affected (Peterson & Carlile, 2019). The use of systems theory to explain problems of online learning, teaching, and institutional practices is a response to this first principle of IS. Educators conceptually understand the nature of systemic issues. The language of systems theory is intuitive because educators understand how parts of a discipline relate or interact with the whole of a field.

**Variance in Performance.** The second tenet calls for focusing on what works, for whom, and reliably at scale. The focus is on variation in performance and getting quality results under various conditions (Bryk et al., 2016). For example, we expect the Toyota Camry to be safe and reliable and perform to standards regardless of which manufacturing plant made the car. We expect all heart surgeons to follow standard protocols to transplant effectively and reliably a complicated living organ. We want a restaurant to serve a favorite dish reliably to expectations no matter who happens to be the cook. Similarly, it is reasonable for students to expect that their courses be of reliable quality no matter who is teaching and where they are learning. They seek course ratings from external sites (e.g., ratemyprofessors.com) to gauge which professor to take, not necessarily which course, indicating where their perceived variance lies.

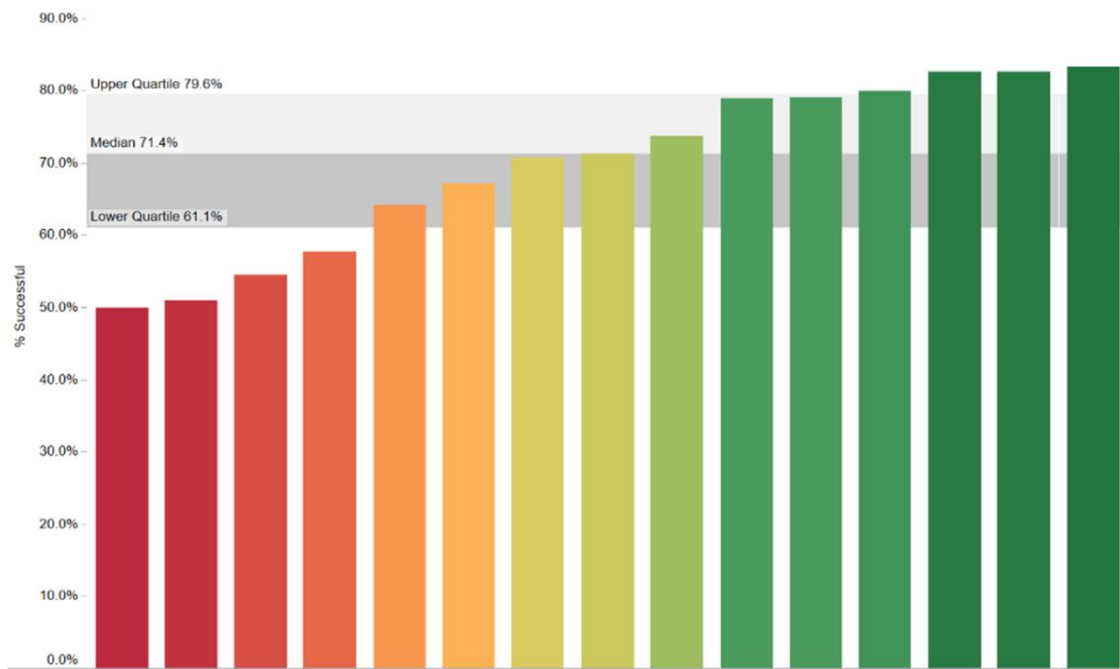
I posit that consistency, reliability, and efficacy of intended outcomes are characteristics of quality education. In public education, this quality should be assured and sustained over time and across contexts to benefit the vast masses – *not just some, and not just sometimes*. Absent these, quality education is elusive and reserved for the lucky. Inequities are logical outcomes in a system that lacks standards or guidelines to ensure reliable learning experiences. Without standards and the methodologies to assure quality in instructional design and delivery, there is no fidelity to equity aims. It should not be surprising then that disparate outcomes would result from a system designed for significant variability in performance.

Put another way, without instructional design specifications, *anything goes*. In higher education, where instructors are generally hired as SMEs, not pedagogical experts, the variability in course performance can be impactful. For example, sections of the same course can have significantly varied completion rates. Figure 10 illustrates an example of variance in completion rates across 15 part-time and full-time faculty teaching sections of an introductory English

course delivered online at the college of this study. In this instance, the completion rate variance range for the 2018-2019 academic year was 33.3 percentage points (lowest at 50 percent and highest at 83.3 percent). Each bar represents an instructor and the aggregate completion rates of course sections they taught. What explains this variability? What are the implications for students who happen to be in one course versus another course? Are these sections the same course in name only?

**Figure 10**

*Successful Course Completion Rate at 2.0 Grade (4.0 Scale) by Faculty Distribution, Introductory College-Level English Course – 2018-2019 Academic Year, 100% Online*



*Note:* Each bar represents one instructor teaching one or more sections of the course during the academic year. An academic year begins with summer term and ends in spring term. A regular section enrolls a maximum of 25 students unless the instructor accepts additional enrollees.

Source: College Tableau Dashboards (2021).

An IS challenge is to eliminate significant variability in course performance (Bryk et al., 2016) in ways that result in consistently desired student outcomes under diverse conditions (Fixsen et al., 2019). An area of examination is the individual work process (Bryk et al., 2016). For example, most college instructors create their own units of curricular work (e.g., syllabus, content, assignments, and assessments), which often take years to develop fully for students with varying levels of college readiness. In systems theory, processes that create delays in the system (e.g., development and delivery of quality instruction) are levers for significant change (Meadows, 2008). Thus, these time-consuming, variance-producing, duplicative units of work are points of leverage for productive change. Bryk et al. (2016) suggest:

Since an organization's capacity to engage in improvement efforts is limited at any given point in time, choices inevitably must be made. Educators will often want to concentrate on high-leverage processes. Such processes have the following properties: (1) they consume substantial resources, especially teacher or student time; (2) their execution and outcomes vary considerably; and (3) there are reasons to believe that changes in these processes might yield significant improvements (p. 47).

High-leverage processes are ripe for standardization of certain types of work to allow for professionals to focus on achieving reliable results consistently (Bryk et al., 2016). This is a practice common in healthcare (e.g., standards for administering vaccinations, performing anesthesia, delivering babies), without which variance would likely result in unintended outcomes. Pilots, doctors, lawyers, emergency medical technicians, marketers, and other professions have standardized units of work, routines, and other processes to guide through complexity so that they can perform at their best regardless of the situation. Similarly, in education, specifications of what constitutes standard work would improve quality by supporting

the reliability of desired outcomes in complex and challenging situations. For example, Universal Design for Learning (UDL) principles as a standard in course design and delivery provide upfront structures to support various learner needs effectively. However, the absence of pre-established strategies to address complex situations leave instructors overwhelmed and alone as they try to meet the many needs of students (Flinders, 1988), which likely leads to teacher burnout (Gaikward & Brantley, 1992).

**Systemic Problems.** The third tenet is closely related to the first. The exercise of problem definition typically involves mapping the problem's root causes and their effects using such tools as a fishbone diagram, interrelationship diagram, and current reality tree (Spaulding & Hinnant-Crawford, 2019). This activity needs to connect the problem with the solution for improvement (Bryk et al., 2016). It also must reveal the complexity of the challenge before the constituencies and frame educational improvement as a systemic problem. The casual links need to be clear and lend themselves to a theory of change. I applied the diagramming tools used by Meadows (2008) and Senge (2006) to map out the systemic problem the led to the development of the EDD theory of change.

**Metrics for Scalability.** The fourth tenet points to the need to have measures for improvement and that these serve different purposes (e.g., accountability, improvement, and research). Specifically, IS identifies at least six measures that (a) operationalize a theory for improvement, (b) are specific to the object of change, (c) have formative value, (d) are presented in a language that is meaningful to those engaged in the work of change, (e) result in timely and accessible data, and (f) are part of the routines of the work in ways that foster trust and sustain meaningful progress (Bryk et al., 2016). For example, in improving teaching and sustaining improvement gains, IS supports the use of well-designed instructional observations with rubrics

to measure demonstrations of pedagogical competencies across contexts. It would also support the disaggregation of course metrics such as grades and completion rates across student groups to help uncover areas in need of instructional attention.

**Disciplined Inquiry.** To focus the work of IS, educators engaged in change need to ask and answer three questions: “(1) What specifically are we trying to accomplish? (2) What change might we introduce and why? (3) How will we know that a change is actually an improvement?” (Bryk et al., 2016, pg. 114). Not surprisingly, this tenet is closely related to the metrics for the scalability principle. For example, in asking the first question, a disaggregation of student outcomes revealed persistent disparities in grades and course completion across student groups in the college of this study, which needed to change if the program were also to benefit students of color and students of low SES. The development of the EDD-ToC serves this function. Finally, tangible results demonstrating change would be improved grades and completion rates while reducing the disparities across and within student groups.

**Networked Communities.** The last of the IS tenets leverages social and organizational learning to promote and sustain improvement. The network is a powerful driver for change. It necessitates broad participation and the use of social capital gained from learning together (Bryk et al., 2016). It needs to be set up where continuous learning and improvement can occur and in ways that produce its own common and meaningful language. There needs to be dedicated time and tools to sustain the work and to develop shared meaning. This effort is necessarily collaborative, cooperative, and collective. Here, collective teacher efficacy (CTE), as discussed earlier in this chapter and elsewhere, would naturally fit. Without CTE, it would be extremely challenging to achieve intended results. CTE can manifest in professional learning communities (PLCs), where teachers build individual and collective capacity for sustainable improvement in

practice and learning (Stoll et al., 2006). For example, certain schools in Washington state promote PLCs by setting aside regular time for departmental faculty to meet, reflect, and discuss curriculum development, explore content, measure outcomes, and evaluate efficacy of assessments.

### *Implementation Science*

If it is true that each system is perfectly (if unwittingly) designed to produce its current outcomes, then the use of innovations to produce new and improved outcomes requires changes in behavior.

— Fixsen et al., 2019, p. 2

Implementation science is a relatively new discipline, with the first academic journal discussing its themes exclusively in 2006 (Kelly & Perkins, 2012). It involves systematic and methodical approaches to purposely put innovations to effective use in ways that bring about socially significant outcomes (Fixsen et al., 2019). It explores and explains “the gap between the design and development of evidence-based programmes or interventions and the design and methodology required to ensure their successful transfer and application in real-world contexts” (Kelly & Perkins, 2012, p. 3). It comes from studying why innovations fail – in perceptions, behaviors, and attitudes that prevent the transfer of evidence-based research into practice. Implementation science recognizes that by their nature, interventions designed to improve complex social conditions have unpredictable results. Therefore, IS needs implementation science and vice versa (Fixsen et al., 2019). Efforts to improve outcomes need fidelity in applications if their outcomes are to be reliable. Regrettably, there are often notable differences in what is desired and what occurs. Fixsen et al. (2019) says:

Effective implementation is the missing link in human service systems. It is the reason for the lack of progress in education, social services, and prevention of debilitating and costly diseases where effective innovations have been available and policies have been encouraging but implementation supports have been weak or missing. Without attention to effective innovations, effective implementation, and enabling contexts socially significant outcomes cannot be produced on purpose and wellbeing will continue to churn around a mediocre mean (p. 2).

Implementation science recognizes that stakeholders need to learn new behaviors for change to occur. Critical system actors need to be engaged in purposeful implementation in ways that increase their capacity to use the innovation as intended. The implementation process also needs to deepen the system's capacity to scale the needed change and its desired outcomes. It is not enough to have innovations to improve lives. Their ultimate measure is in their efficacy in real-world contexts. To do this, they must overcome barriers by instilling implementation supports as the intervention expands. Without the built-in scaffolds that draw from multiple disciplines, coveted goals are unlikely to result.

Implementation science is multidisciplinary and transdisciplinary, drawing evidence-based principles across several domains such as business, education, health care, public policy, and psychology (Fixsen et al., 2019; Kelly and Perkins, 2012). It has a systemic orientation, accounting for parts that make up the implementation whole in a real-world context; it is methodical, requiring the use of processes and procedures for capacity-building as innovations scale; and it is scientific, applying evidence-based practice to bring about predictable, reliable, and desired results (Fixsen et al., 2019; Kelly & Perkins, 2012). Relying on the evidence of effectiveness to implement interventions has great importance in the public domain.

Government-related interventions often entail substantial investments and whose success can determine the continued support of public policy.

Due to implementation science's propensity to absorb and integrate various principles across fields, descriptions, and terms can vary significantly, adding to the confusion and, paradoxically, slowing its adoption in the field (Blase et al., 2012, Fixsen et al., 2019). Against this backdrop, Fixsen et al. (2019) promoted six active implementation frameworks to unify and advance implementation science. Table 6 provides a summary of the major aspects of each.

**Table 6**

*Implementation Science Frameworks*

<b>Framework</b>	<b>Description</b>
Usable Innovations	Operationalized to be teachable, learnable, doable, and assessable in practice
Implementation Stages	Descriptive, identifiable stages where implementation teams and others can adjust their inputs to match stage for achieving full, effective, and sustained use of an innovation
Implementation Drivers	Organize and operationalize behavioral change methods during systemic change
Implementation Teams	Three-five members who work closely with executive leadership; experts in implementation frameworks who can teach frameworks to others
Improvement Cycles	Application of Plan-Do-Study-Act-Cycle (PDSAC) as an iterative process to recognize room for improvement
Systemic Change	Change in system structures, roles, functions, policies, etc., in ways that sustain and improve outcomes over time

Source: Adapted from Fixsen et al. (2019)

To clarify the operability of the EDD model discussed later in this chapter, I rely on implementation science concepts, descriptions, and terms as discussed in the six frameworks in ways that are more or less aligned with principles of operations management and project management (PM). There are three primary reasons for this reliance. Operations and project management have established methods, tools, and protocols. They are accepted and broadly used in both the private and public sectors. Both are centrally concerned with translating goals into actions with reliable outcomes. Operations management is the administration of practices that convert resources into goods and services as efficiently as possible to meet organizational goals (Stevenson, 2018). Project management involves planning, implementing, and managing activities to accomplish pre-established and specific goals (Larson & Gray, 2018). In using these terms, I raise human-centered interests that can often be lost in discussing principles normally associated with the business realm.

### *Adaptive Leadership*

According to Heifetz (1994), there are technical problems for which issues are well defined and where there are known and established solutions. There are also adaptive challenges for which there are no clearly defined boundaries and where changes in values, beliefs, and behaviors are required for the desired change to occur. In the first instance, implementation is a matter of orchestrating and implementing a well-defined plan to solve a clearly defined problem led by authority figures. A heart transplant led by a board-certified surgeon and their certified medical team is an example.

In the second, those with authority expose a conflict to confront internal contradictions and orchestrate engagement as leverage for learning new ways (Heifetz, 1994). Here the central task is clarifying what matters and balancing choices against tradeoffs in real-world contexts

where values meet. Eliminating systemic inequities in the education system, where disparate outcomes (e.g., course completion and graduation rates) have downstream social and economic effects, is arguably an example of an adaptive challenge. The problem is not well defined, and multiple technical solutions (e.g., high-stakes testing or punitive methods such as those instituted by No Child Left Behind Act) have not resulted in socially significant outcomes and may have exacerbated systemic problems. Heifetz might argue that persistent educational problems have technical aspects and adaptive challenges rooted in values, beliefs, and behaviors. Not distinguishing and attending to each type will assure the persistence of learning disparities at the cost of broad prosperity and the resilience of our democracy.

Adaptive confrontations require tactical care. Constituencies rely on authority figures to perform such technical functions as defining the problem, providing a solution, protecting from external threats, and maintaining norms (Heifetz, 1994). They want to be led. However, in adaptive situations, those with authority need to identify the adaptive challenge, raise questions than give answers, let people feel the external threat to stimulate change, and give the work back to the people who must do the work at a rate they can stand. Such adaptive situations require leaders of authority to sustain a period of social disequilibrium where “people confront the contradictions in their lives and communities and adjust their values and behaviors to accommodate new realities” (Heifetz, 1994, p. 127-128). It also requires leaders to protect the voices of people without authority to raise attention on issues that the authority figure cannot or would not be regarded as credible. Here the authority figure provides cover. Table 7 summarizes these five strategic principles of adaptive leadership.

**Table 7***Five Strategic Principles of Adaptive Leadership*

Principle	Description
1. Identify the adaptive challenge.	Diagnose the situation in light of the values at stake and unbundle the issues that come with it.
2. Keep the level of distress within a tolerable range for doing adaptive work.	To use the pressure cooker analogy, keep the heat up without blowing up the vessel.
3. Focus attention on ripening issues and not on stress-reducing distractions.	Identify which issues can currently engage attention; and while directing attention to them, counteract work avoidance mechanisms like denial, scapegoating, externalizing the enemy, pretending the problem is technical, or attacking individuals rather than the issues.
4. Give the work back to the people, at a rate they can stand.	Place and develop responsibility by putting the pressure on the people with the problem.
5. Protect voices of leadership without authority.	Give cover to those who raise hard questions and generate distress—people who point to the internal contradictions of the society. These individuals often will have latitude to provoke rethinking that authorities do not have.

Source: Heifetz, 1994, p. 128

At the heart of the five strategic principles of adaptive leadership that Heifetz (1994) promoted is the idea that the act of leadership ought to be useful. He wrote that leadership is better conceived as an activity – to lead with values and do the work that must be done in whatever station one might be situated (e.g., president, teacher, front desk clerk, and advisor). Heifetz contended that using a broad set of abilities across the social structure is needed to solve complicated issues. These abilities are sources of leadership that can be applied across various

contexts, “[b]y unhinging leadership from personality traits, we permit observations of the many different ways in which people exercise plenty of leadership every day without ‘being leaders.’” (Heifetz, 1994, p. 20). This idea of leadership as an activity is particularly important when authority alone cannot move deeply held values, beliefs, and behaviors. Adaptive work is an internal and a social phenomenon – dependent on people’s abilities and willingness to confront self and others.

### **Subsystem Narrative to Explain Disparities**

To understand how variance in performance contributes to the persistence of disparate student outcomes, I synthesized what the literature suggests happens at the subsystem level of instructional design and delivery into a narrative largely based on systems theory. I omit most direct references to literature previously discussed to approximate a more fluid story. I embed new literature references not previously discussed as well as include previously referenced literature where passages benefit from clarity. Also, I integrate my professional observations stemming from data gained in my capacity as researcher as instrument (Stewart, 2010; Xu & Storr, 2012). These appear without direct references to me but should be assumed as such.

### ***System Archetype: Shifting the Burden***

A system archetype known as shifting the burden (Meadows, 2008; Senge, 2006) is a structural behavior, common, yet hidden in many organizations – including community colleges. In higher education, it involves faculty who are hired as subject matter experts (SMEs), not formally trained in pedagogy or instructional design in general (Wedman, 1989) nor online teaching in particular (Halupa, 2019). They know their content, care about student learning but are expected to work beyond their domain of expertise (Katz & Dack, 2013). They work within a culture of instructional isolation from colleagues, creating and delivering their courses without

outside interference (Flinders, 1988). Paradoxically, this also leaves them alone to address the many complexities of varying student needs. Unaware that online teaching requires different structural behaviors by teachers and learners (Moore, 2019), they replicate their F2F classrooms onto pages in the institution's LMS with little organization, structure, logic, or instructional support. They are doing the best they can with what they know. However, lacking good foundations in instructional design poses significant confusion and frustration to students (Dykman & Davis, 2008; Lee, 2008; Swan, 2001). Students are left to navigate problems of transactional distance, necessitating greater needs for teacher-student dialogue (Moore, 2019) and interaction (Jaggars & Xu, 2016). Ironically, pedagogical disconnects in distance education lessen the likelihood for autonomous learning – a benefit of online learning (Moore, 2019). Inability to leverage technological affordances, faculty find it challenging to foster higher orders of social learning (Cleveland-Innes, 2019). Such instructional design and delivery issues have disproportionate impacts on non-traditional students (Jaggars & Xu, 2010) who struggle to make sense of teacher and course expectations without synchronous support (Swan, 2001).

When instructors become aware of difficulties in their classes, their perceptions of learner capacities based on student characteristics (e.g., race/ethnicity, immigrant background, gender, or socioeconomic status) may influence their instructional approach (Brandmiller et al., 2020). They may perceive learning struggles and achievements as functions of student motivation, time management, or study habits. In addition, the faculty member's own childhood experience and success in school can affect their perceptions of what students should know and be able to do in classrooms – online or otherwise (Stuart & Thurlow, 2000). After all, as students, the instructors persisted through learning obstacles themselves; why cannot their students, they might ask. Nevertheless, when instructors become aware of learning issues, they begin to look for and use

well-intended easy fixes, which they used as learners, observed in other contexts, or picked up from workshops and a myriad of other sources. These efforts of solving perceived problems are generally not evidence-based, not integrated to the course objective, or pedagogically aligned with the educational technology used, and therefore contribute to missed opportunities to learn at high levels. These attempts can include using apps, videos, and a host of activities meant to engage students but are not aligned with content, outcomes, and assessments. Instructors might also include more content or lessen assignments, adjust deadlines, lower expectations, or implement more punitive measures to motivate student action. These may seem to help a little or for a time but do not significantly address learning disparities across student groups. They may even confuse students as they struggle to connect the relevance of activities to the purpose of the course. Well-intended easy fixes widen learning gaps downstream as students lose foundational competencies and progressively struggle in upper-level classes, increasing the likelihood of not passing required courses and not graduating.

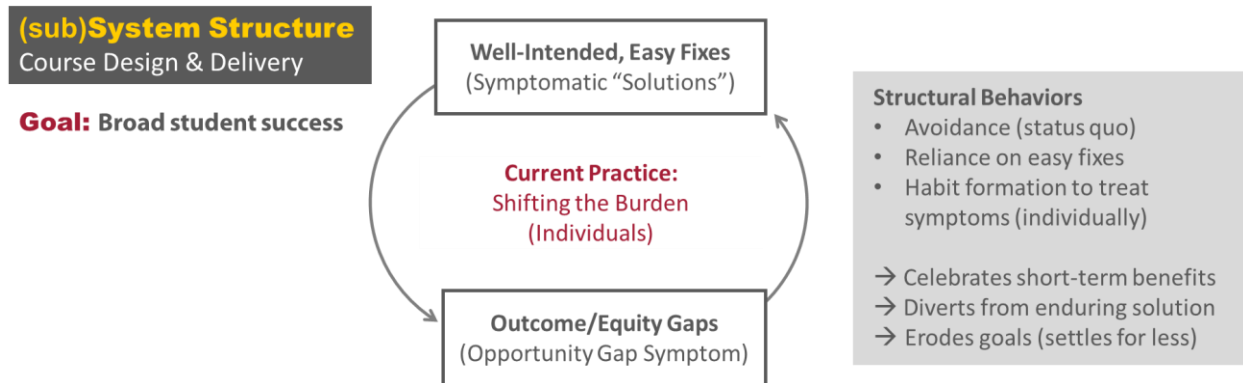
By individually focusing on symptomatic solutions, the work to resolve systemic issues is avoided – maintaining the status quo (Katz & Dack, 2013). Over time, relying on siloed approaches becomes an entrenched instructional habit – shifting the burden of solving the fundamental problem to symptomatic and idiosyncratic fixes, which cannot structurally address systemic problems. There may be short-term benefits, an assignment here or there gets a boost, but the overall performance of the class or program rarely gets substantially better.

Individualized attempts to address systemic issues fall short because instructors do not have enough resources to realign malfunctioning systemic parts. As efforts to eliminate significant disparities fail and exhaustion settle in, individual faculty resolve to adjust their expectations and

expect less of themselves and students, contributing to an erosion of goals. See Figure 11 for a graphic illustration of the structural behaviors discussed above.

### Figure 11

#### *Subsystem Model Course Design and Delivery: Shifting the Burden Archetype – Structural Behaviors*



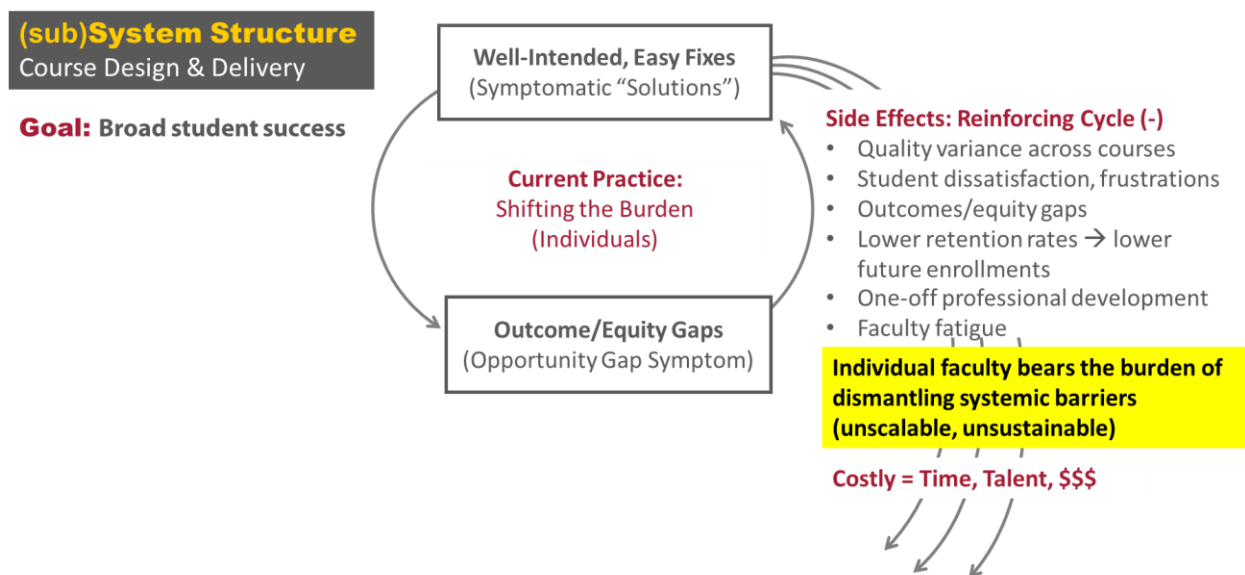
This systemic behavior produces systemic side effects that are negatively reinforced and have downstream impacts as students struggle to meet programmatic requirements. Siloed and individual instructional responses to systemic problems subsequently create quality variance across courses. If there are multiple sections of the same course, students may unknowingly be subjected to inequities. Some students may enroll in well-designed classes; others may not. If students must take a sequence of courses, one ill-designed class can unnecessarily risk their progress. It is costly in terms of time lost as well as money lost if students repeat courses.

For first-generation college students or non-traditional students unaware of quality discrepancies, their success may be more a matter of luck. Sadly, frustrations in online learning can be demotivating to students, manifested in disengagement (Artino, 2008; Keller, 2008; Levy, 2007), especially for students new to the college environment generally or to online learning specifically (Rovai et al., 2007; Shroff & Vogel, 2009). Such unnecessary quality variance

creates missed opportunities to learn that result in completion rate discrepancies across sections of the same course, increasing the likelihood of lower programmatic retention rates as well as increasing the possibility of lower future enrollments and completion rates. Faculty, however, are committed to helping their students and continue to seek more well-intended, easy fixes. With renewed hope, they apply newfound short-term “solutions” in their online courses – soon finding that these too, like the others, have limited impact, especially on the most vulnerable students. But they keep trying, and the cycle goes round and round, eventually resulting in faculty fatigue. This systemic behavior amounts to individual faculty bearing the burden of dismantling systemic barriers. It is unscalable and unsustainable. It is costly in terms of time, talent, and public dollars. See Figure 12 for a graphic illustration of how structural parts behave to shift the burden of increasing completion rates and eliminating systemic outcome disparities onto the shoulders of individual instructors using non-evidence-based instructional tactics.

## Figure 12

*Subsystem Structure: Course Design and Deliver - Shifting the Burden Archetype and Structural Side Effects*



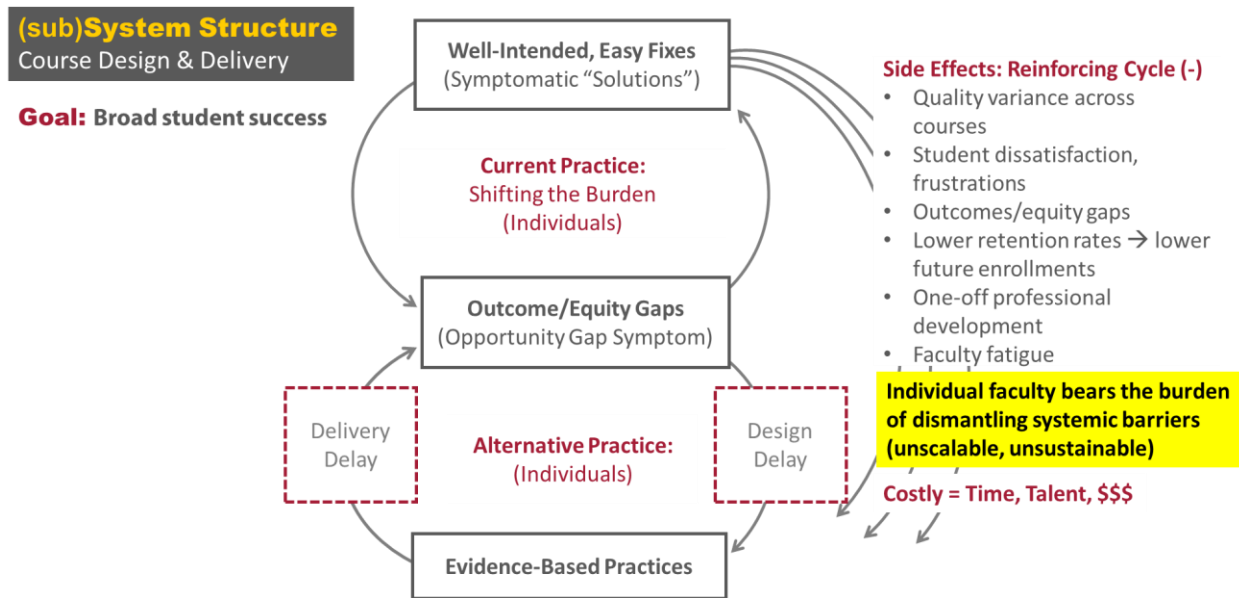
Some faculty, however, commit to building good online courses. They quickly realize that designing a course from the ground up based on evidence-based practices takes a lot of time (Burgstahler, 2015). They face the added challenge of taking on multiple functions (i.e., instructional designer, technologist). As a result, they find that there are significant delays in developing pedagogically sound online courses. This says nothing of the challenges faced by adjunct faculty, representing nearly two-thirds of the overall faculty in community colleges (Stenerson et al., n.d.) and who often have multiple commitments across colleges. They simply do not have the time to develop courses. It is not uncommon for adjunct faculty to be only one week or one assignment ahead of students. Experience among adjunct faculty at the college of this study differs from inheriting courses developed by other faculty, presumably full-time faculty, to building an entire course within a few weeks or days before their teaching assignment begins.

Even if the individual instructor did succeed in designing one course well, they solved the problem of quality in that course, not necessarily all the other classes in their load nor the other courses students must take to meet credentialing requirements. Thus, systemic side effects remain. Students still experience course variance across courses affecting their ability to succeed. The individual faculty (regardless of the efficacy of their own class) still bears the burden of dismantling systemic barriers. This siloed approach is still unscalable, still unsustainable. It still results in persistent opportunity gaps and the resulting outcomes disparities. It is still costly in terms of time, talent, public dollars, and ultimately to the dreams of many students who sought higher education as a way forward in their lives. See Figure 13 for an illustration of the course design and delivery subsystem. After using system archetypes to explain structural behaviors that limit student success, I created the EDD-ToC to change structural behaviors.

**Figure 13**

*Subsystem Model Course Design and Delivery: Shifting the Burden Archetype – Individual*

*Attempt at Evidence-Based Practices with the Similar Structural Side Effects*



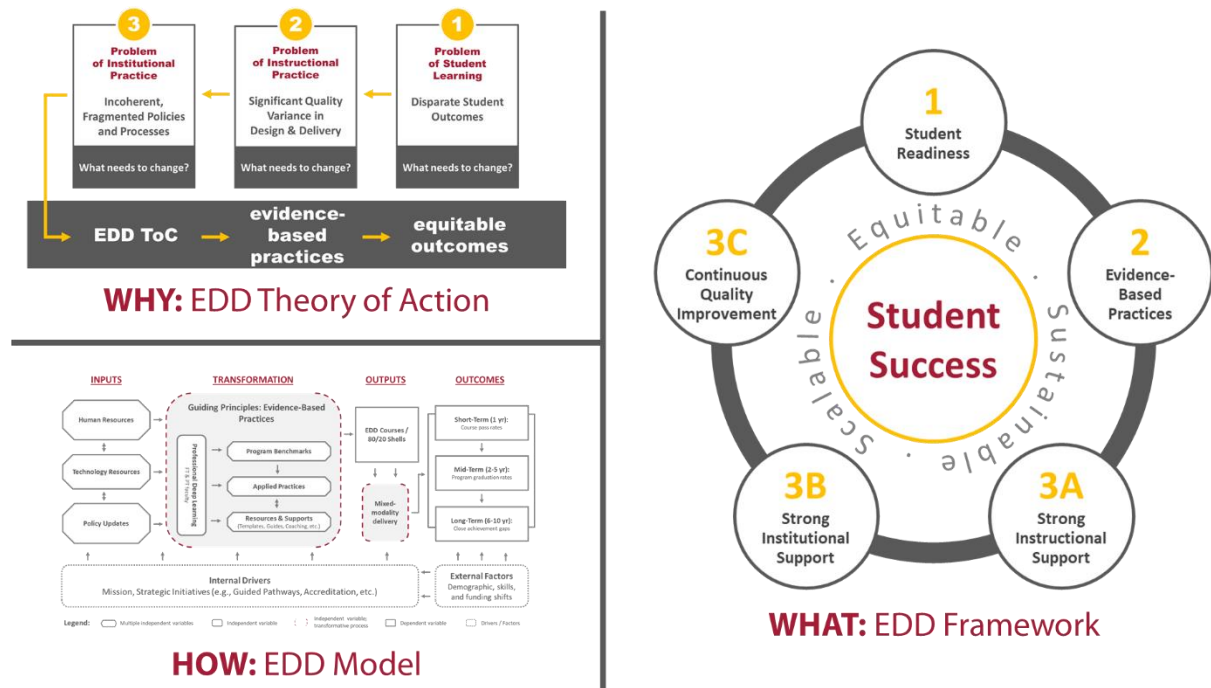
### **Innovation: Equity by Design and Delivery Theory of Change**

The Equity by Design and Delivery (EDD) theory of change (ToC) aligns with the theoretical construct of “comprehensive description and illustration of how and why a desired change is expected to happen in a particular context” (Center for Theory of Change [CTC], n.d., para. 1). To this definition, I added a “what” or a framework to connect the “why” and the “how.” Thus, the EDD-ToC has three component parts: (a) EDD theory of action (ToA) to explain the connections between problems of learning and problems of instructional and institutional practice to its solution (why), (b) the EDD framework to organize a coherent strategy against structural problems (what) using evidence-based practices, and (c) the EDD

model to operationalize the framework. See Figure 14 for a graphic summary of these three components.

**Figure 14**

*Equity by Design and Delivery Theory of Change Components*



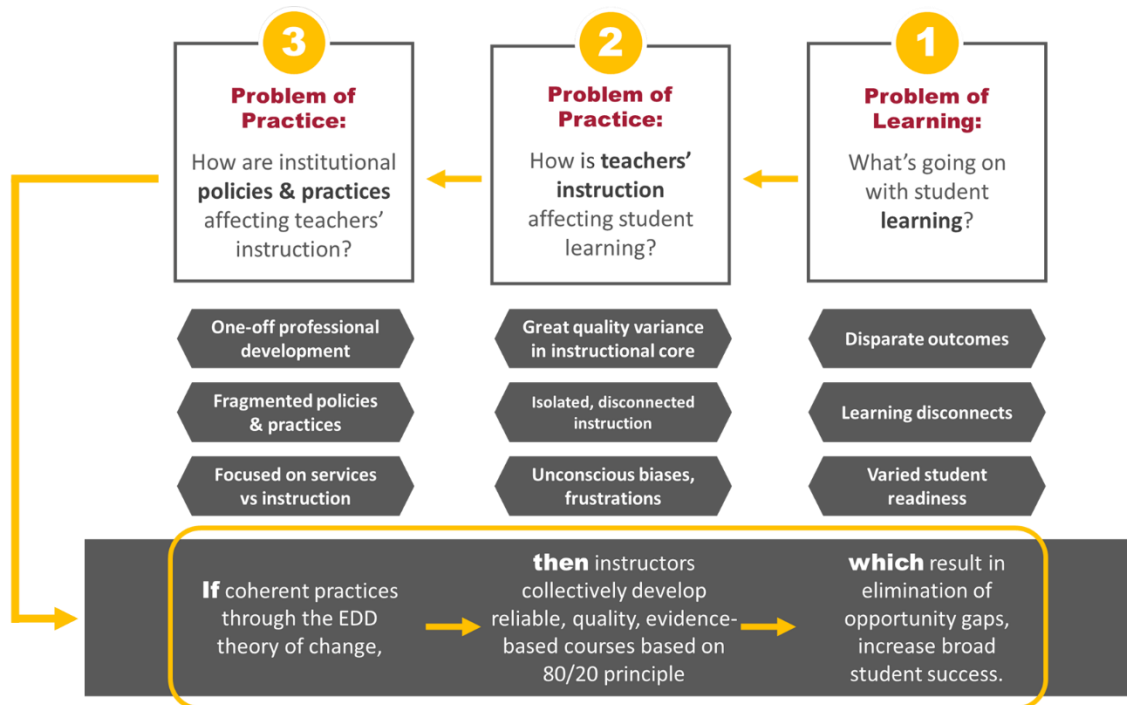
**EDD Theory of Action**

The EDD theory of action (ToA) or the “why” explains the systemic problem of variance as described in the subsystem narrative. Variance in instructional design and delivery at the course and program level show up as pedagogical disconnects and missed opportunities to learn at high levels with inequitable downstream effects as students, especially from historically marginalized communities, struggle to complete course and programmatic requirements. The EDD-ToA integrates scholarship and my observations as scholar-practitioner. It theorizes that the way out of systemic problems created by isolated practices is to adopt collaborative methodologies as discussed in the EDD-ToC. See Figure 15 for a graphic depiction of the

linkages between the problems of online learning, problems of online teaching, and problems of institutional practice.

**Figure 15**

*Equity by Design and Delivery Theory of Action*



*Note:* Theory of action schema is adapted from Center for Educational Leadership. (n. d.).

Creating a theory of action for improving teaching and learning. University of Washington.

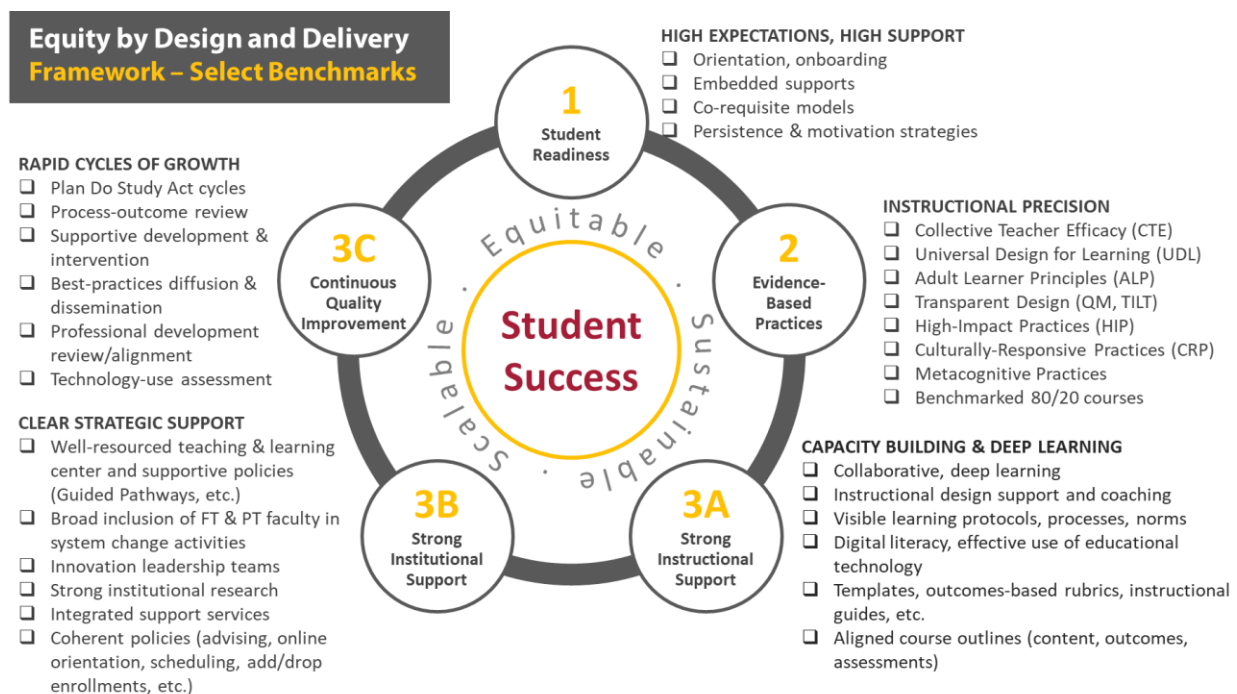
**EDD Framework**

The EDD framework provides the “what” or benchmarks for addressing problems of learning (signified by 1 in the EDD-ToC figures in this chapter), problems of instructional practice (signified by 2), and problems of institutional practice (signified by 3). These numbers correspond to problems of learning and practice in the EDD-ToA. Benchmarks are evidence-based practices and research-based principles that showed positive impact on student learning.

For example, framework element two, Instructional Precision, calls for the integration of such evidence-based practices such as collective teacher efficacy (CTE), UDL, and culturally responsive practices (CRP) as benchmarks in the design and delivery of course. The EDD framework is comprehensive in its unity and cohesion of efforts to achieve equity by design and delivery at scale in sustainable ways by leveraging institutional resources, as shown in framework elements two and three. Of particular importance is the pursuit of continuous quality improvement, which leverages the sciences of improvement and implementation. The framework's assembly of parts follows the principles of coherence as discussed by Fullan and Quinn (2016) by focusing on purposeful action and interaction, capacity building, precision in practice, transparency of efforts, monitoring of practice, and continuous correction. See Figure 16 for an illustration and framework and select benchmarks to address problems of learning and practices.

**Figure 16**

*Equity by Design and Delivery Framework*



*EDD Model*

The EDD logic model, or EDD model for short, serves as the “how” and operationalizes the elimination of missed opportunities to learn at high levels, beginning with the program or pod level. Central to the EDD model is harnessing the number one predictor of student success, CTE – the collective belief of educators that their evidence-based teaching practices significantly impact student learning (Darling-Hammond, 2000; Donohoo, 2018; Hattie, 2016); applying evidence-based practices such as UDL, transparent design, and adult learner principles; as well as building programmatic or pod capacity by leveraging specific institutional supports (e.g., instructional designers, technologists, professional development) designed to scale reliable, quality courses at scale. It synthesizes evidence-based and principles of instructional design, pedagogical delivery, quality management, project management, and operations, among other strategic and day-to-day considerations.

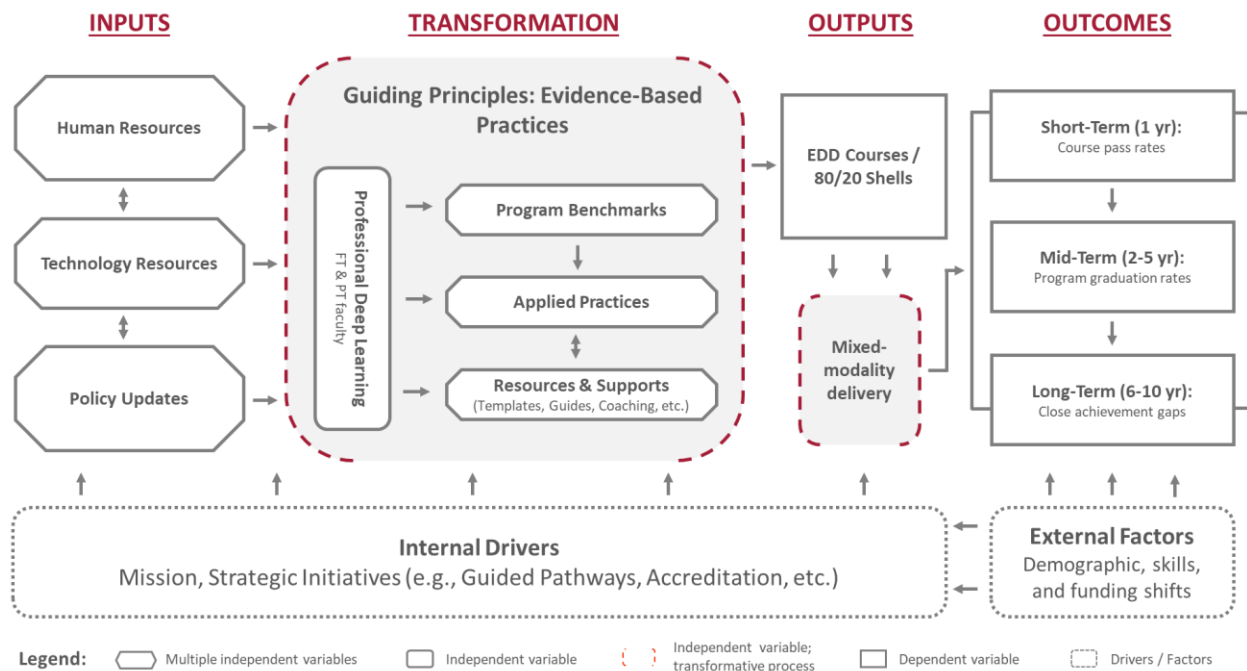
Of the three EDD components, the EDD model shifts the burden from individual instructors to a system of supports and agreements to create reliable, quality, evidence-based courses designed to optimize learning by all students. It disrupts ineffective and inefficient processes that ultimately exhaust instructors. It applies principles, processes, and methodologies that facilitate instructor and student success. It does this by applying implementation (Fixsen et al., 2019) and improvement sciences (Crow et al., 2019) to increase the likelihood of intervention efficacy.

As an operational blueprint, there are micro-activities and macro-drivers. At the micro-level, the EDD model involves investments in human resources (e.g., faculty, instructional designers, technologists), technological resources to deliver online courses, and policy updates (e.g., time to collaborate, professional development). These serve as the main ingredients for the

transformative processes. This synergistic interplay of stakeholders and resources committed produces EDD model courses based on the 80/20 principle, discussed later in this section, delivered through online modalities. These courses are measured against short-, mid-, and long-term outcomes. Intangible products of the transformative processes include the integration of teacher as identity and increased sense of self and collective efficacy as instructors individually and collectively explore and apply evidence-based practices. Methodologies also save faculty time, reduce their stress load, and increase their capacity to teach their content and meet student needs effectively. At the macro-level, internal/institutional drivers and external factors influence the direction and nature of the EDD model work. See Figure 17 for a graphic illustration of the model.

**Figure 17**

*Equity by Design and Delivery Model*



**80/20 Principle.** Within this model is the application of the 80/20 principle, where faculty come together to arrive at collective agreements at the program or pod level. These include such top-level considerations as collaboration protocols, evidence-based practices, content, learning outcomes, assessments, grading and late work policies, and course look and feel. This set of agreements make up 80 percent of the course. Twenty percent is left to teacher discretion to leverage individual instructional strengths and meet student needs. These agreements serve as benchmarks and guides in the development, maintenance, and continuous improvement cycles of the courses supported by the EDD course development quad (CDQ) processes. These agreements manifest in a course prototype that embodies the framework or approach to course design at the program or pod level.

The 80/20 principle is in keeping with the accepted instructional notion that academic freedom does not mean “anything goes” (AFT, n.d.). It recognizes that fundamental skills and areas of knowledge in discipline areas do not shift wholesale from quarter to quarter. In fact, they are mainly stable. It balances the need for consistency to assure a high level of fairness and reliability across the courses within a program with a meaningful amount of agility to innovate and respond to conditions – all to serve student success. It recognizes that students in the program appreciate and benefit from consistency, predictability, and reliable quality in their courses and program policies (e.g., grades, late policy, use of rubrics). It raises confidence in what grades and outcomes represent in the educational pathway. The 80/20 principle acknowledges individual faculty members' valuable perspectives and experiences and defers to their judgment in adding content and responding to individual student needs. Without documented and applied collective agreements, however, of what minimally constitutes quality learning experiences, then reliability of course quality is in doubt. Disparate experiences and

their outcomes would also be logical consequences – as they would be in any inconsistent production and application of skills and knowledge across professions, disciplines, organizations, and industries. Just imagine the havoc that would result if there were no standards in flying a plane, drawing blood, diagnosing illnesses, etc. Education is no different in this regard and undoubtedly consequential as its efficacy determines access to jobs, the resilience of our democracy, and the prosperity of our nation.

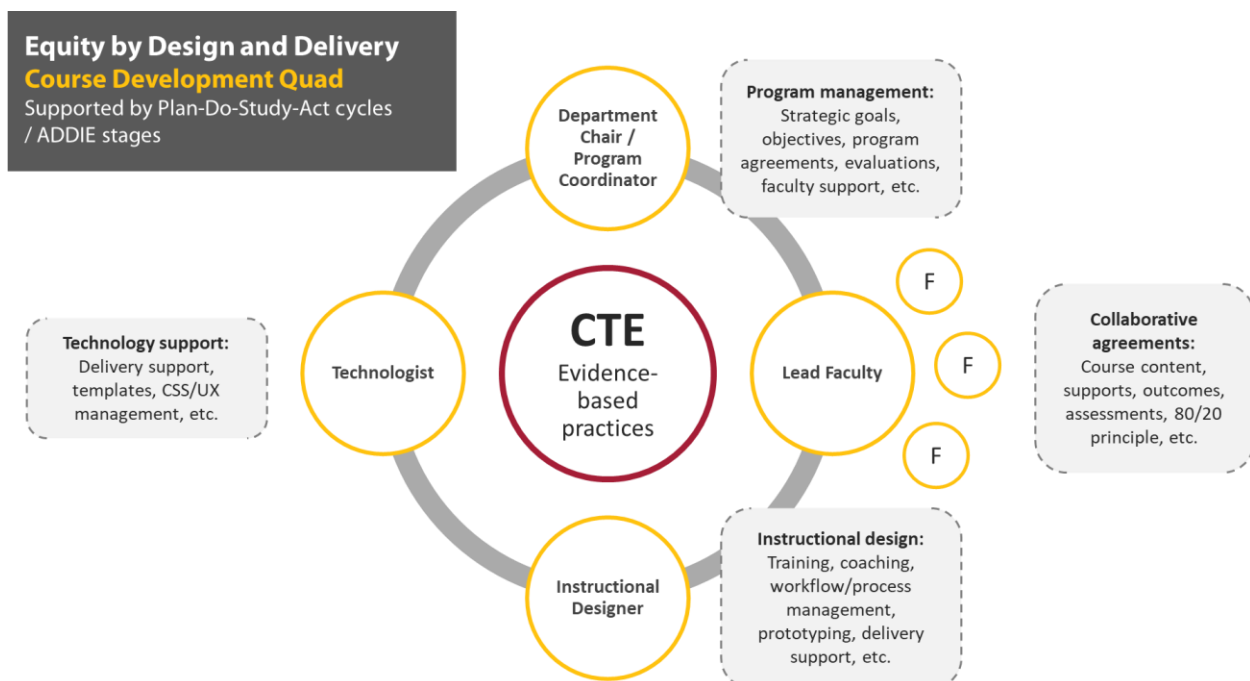
**EDD Course Development.** The EDD-ToC centers collective teacher efficacy (CTE), the number one predictor of student success (Hattie, 2016). It acknowledges that the demands of online teaching are different from conventional classrooms (Abbott, 2005; Cox, 2005; Wong et al., 2006) and that its work is structurally different (Avolio & Kahai, 2003). It recognizes that “no one person is capable of discharging all of the expertise levels and roles inherent” in developing online courses (Puzziferro & Shelton, 2008, p. 119). Therefore, the operational model of the EDD-ToC integrates critical roles in the development and delivery of reliable quality courses using the 80/20 principle. The main vehicle for this operation is the EDD course development quad (CDQ) made of four roles: department chair as program overseer, faculty as SMEs, instructional designer (ID) as advisor and facilitator, and technologist as technology manager. The EDD-CDQ applies the PDSA (plan-do-study-act) continuous improvement processes and ADDIE (analysis, design, development, implementation, and evaluation) instructional design methods to apply evidence-based practices using the 80/20 principle. The PDSA functions as the overarching cycle for programmatic improvement, wherein the ADDIE instructional design model operates. Ideally, an academic dean works with the department chair to establish and monitor the PDSA. Once a department or a program engages the EDD model, the ID, in partnership with the department or program chair, initiates the ADDIE stages. While

the department chair is engaged in the ADDIE process, the ID is the primary facilitator as they are functionally literate in the ADDIE processes. For example, the ID guides the program chair and faculty to conduct a needs and capacity analysis. One of the tools can be an andragogical learner analysis using an analytical device like one developed by Malcolm S. Knowles, considered the father of adult learning theory, to inform course design. See Appendix B for a sample worksheet for such an analysis.

Given that course development is in the context of programmatic goals, an initial ADDIE exercise frontloads much of what would be needed for subsequent course development activities in the program. As Deming (2012) famously said, “Quality can not be inspected into a product or service; it must be built into it” (p. 227). These necessitate the use of collaboratively agreed-upon standards or benchmarks from the EDD framework as guides in the development of courses. See Figure 18 for a graphical illustration of the EDD-CDQ and its processes.

### Figure 18

#### *Equity by Design and Delivery Course Development Quad*



The cooperative processes of the EDD quad and the collective agreements captured by the 80/20 principle are forms of collective academic freedom – the meaningful and deliberate choice of faculty to collaboratively agree upon what is best for students. The language and instructional orientation change from “my courses” to “our courses,” from “my students” to “our students,” from “my grading policies” to “our grading policies,” and so on. This collective and faculty-led exercise fundamentally centers student success. See Table 8 for an example of 80/20 agreements.

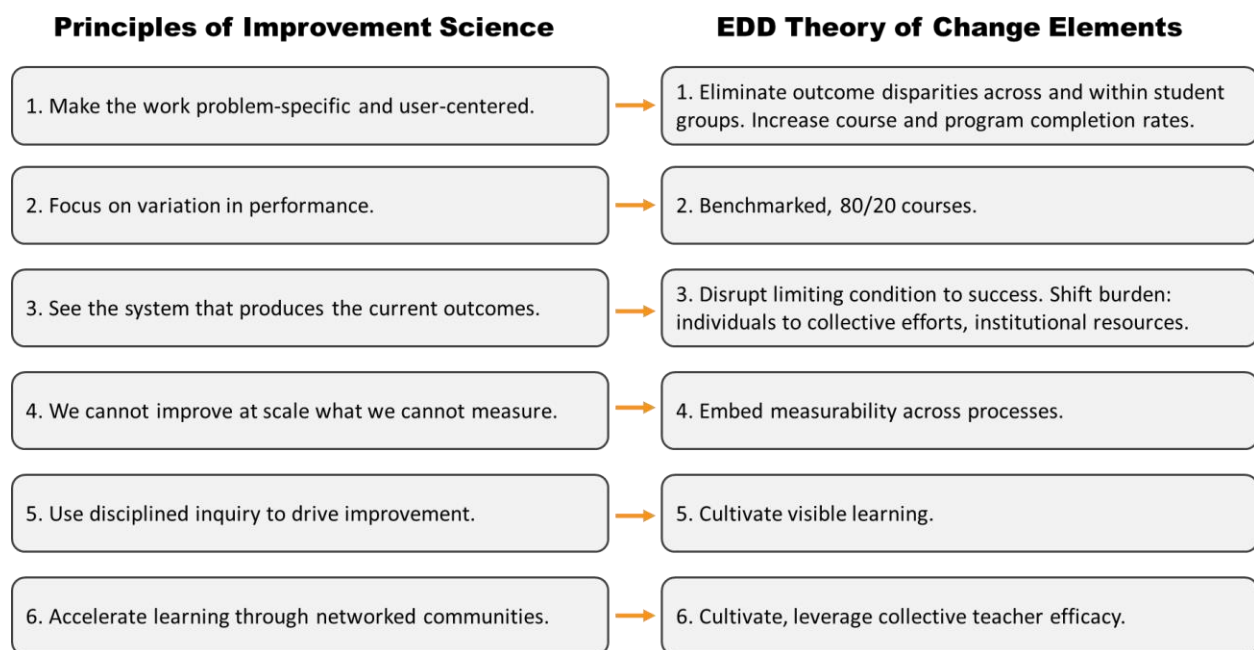
**Table 8***Sample Application of the Equity by Design and Delivery 80/20 Principle*

<b>20% - Teacher Discretion</b> (Curricular Enhancements and Context Responsiveness) Intent: Draw from subject matter expertise, support individual students, and let instructor shine!	
<input type="checkbox"/> Individual student and course needs <input type="checkbox"/> Additional videos, content, assignments, etc.	<input type="checkbox"/> Online discussion board <input type="checkbox"/> Greetings, announcements, etc.
<b>80% - Collective Agreements</b> (Consistency, Fidelity, Foundational/Developmental Support at Program or Pod Level) Intent: Leverage institutional supports, limit quality variance, and foster equitable learning experiences!	
<input type="checkbox"/> Evidence-based practices (see EDD framework) <input type="checkbox"/> Structure and organization <input type="checkbox"/> Syllabus <input type="checkbox"/> Course content, outcomes, assessments <input type="checkbox"/> Textbooks, materials <input type="checkbox"/> Accessibility <input type="checkbox"/> Grade policy <input type="checkbox"/> Late work policy <input type="checkbox"/> Course total points, distribution	<input type="checkbox"/> Launch all modules in week zero <input type="checkbox"/> Orientation module <input type="checkbox"/> Weekly routines <input type="checkbox"/> Normed rubrics <input type="checkbox"/> Checklists <input type="checkbox"/> Multi-stage and applied projects <input type="checkbox"/> Feedback turnaround <input type="checkbox"/> Course evaluation <input type="checkbox"/> Collaboration protocols

**Principles of Improvement Science and the EDD-ToC.** Collectively, the EDD-ToC components attend to the six principles of improvement science. For example, the second principle of improvement science (IS) is to focus on variation in performance. The EDD-ToC calls for courses to be benchmarked against evidence-based practices in the EDD framework. The EDD model puts these benchmarks into action via the 80/20 principle. See Figure 19 for a side-by-side accounting of the principles against the EDD-ToC change elements. It is important to reiterate that the EDD model operationalizes the EDD-ToC.

**Figure 19**

*Equity by Design and Delivery Theory of Change and Principles of Improvement Science*



## EDD Model Pilot

### *EDD Course Prototype*

As part of my tenure process, my doctoral studies, and the development of the EDD-ToC, and in anticipation of a successful approval of the proposed baccalaureate degree, I redesigned

online and hybrid versions of a section of an introductory business course, one of the proposed prerequisite courses for admissions into the new degree. The program offered multiple sections of the course taught by various instructors every quarter. As part of my tenure process, I consulted with an instructional designer and a technologist on the organizational design of my classes. I integrated my colleague's recommendations. I redesigned the section against research-based principles such as UDL, adult learning theory, transparent design, and culturally responsive practices. I also used the Quality Matters rubric as one of my design guides and proceeded with a QM lite peer review of the section in winter 2018. It was approved by the panel and launched in the spring of 2018. A part-time faculty member used this newly redesigned section as their section that following summer, and other part-time faculty began using it thereafter. It became the EDD course prototype and the first EDD model course.

**Prototype Structure.** The EDD course prototype serves as the framework and a foundation for developing other EDD model courses. A defining feature of the framework is its structure. It TiLTs<sup>2</sup> the entire course and applies evidence-based practices outlined in the EDD framework. It creates instructionally-sound courses designed to set up students for success against course objectives. This entails the alignment of course content, outcomes, and assessments horizontally and vertically – at the assignment level, weekly module level, and across the modules of the course. Assignments and modules nest within the greater purpose of the course. This alignment gives the students clarity about why they are learning what they are learning and how learning is assessed at any point of the course.

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<sup>2</sup> Transparency in Learning and Teaching (TiLT) framework is developed by Mary-Ann Winkelmes, PhD. (2014). TiLT involves making the purpose of the course, its outcomes, and the tasks required for each assignment explicit. It is used as a benchmark during the instructional design process of the EDD model.

The course and its learning activities take on a deliberate approach to teaching, showing what success looks like against expectations. Each assignment comes with step-by-step instructions on how to complete the required tasks – often accompanied by checklists, video tutorials, and other supports. This systematic approach prioritizes skills and knowledge development. Routines further support the course by guiding students through developmental learning, where students practice and integrate learning habits necessary to learn at high levels. They learn skills to manage their time, pace their learning, and reflect on their development. Structural elements and processes move students intentionally along the course to master learning objectives and progressively gain confidence in them. The course design leaves little to chance. It achieves fairness, consistency, and reliability through explicit teaching methods that center learning. An EDD model course has signposts and pedagogical guardrails to keep students on the path to completion no matter their background. It sets up instructors to focus on teaching and supporting the students so that both teacher and learner succeed.

### ***Program Approval and EDD Model Pilot Launch***

The EDD model course prototype was on its third quarter of delivery when the state board and college's processes approved the baccalaureate proposal in March 2019 for a program launch in fall 2019. I immediately approached the college's director of professional development and a senior instructional designer (ID). I described the EDD-ToC and explained its equity propositions. I explained how the development of new baccalaureate courses aligned with the college's goal to end inequities and increase degree completion rates. I showed them the EDD model course prototype, which would be used to build the new courses in a pilot. I reasoned that since the college would commit funds for creating new courses, developing them against the EDD's equity-centric framework and the prototype would increase the likelihood of broad

student success. They recognized the intuitiveness of the EDD model and agreed to champion it before leadership. The director sought the funds for professional development training scheduled for summer. As was the challenge of my dean and senior leadership, the director challenged me to gain the support of my tenured colleagues to pilot the EDD model.

After I secured the support of the director, the ID, and senior leadership, I worked closely with the ID to outline a set of capacity-building stages for the EDD model pilot. See Figure 20 for a graphical illustration of the stages. The ID was vital in helping me understand internal processes to leverage, how design thinking would inform the model, and how to integrate the PDSA and the ADDIE stages. This collaboration was instrumental in helping me understand undeveloped areas of the EDD model, which led to an expansion of my literature review. The ID exemplified an effective and collegial instructional advisory role. She was collaborative, respectful of my role as SME, and approached our work as a partnership.

**Figure 20**

*EDD Program Buy-In and Capacity-Building Stages*

Build Programmatic Capacity	<b>Stage 1</b> Pre-EDD – Program Buy In	<ul style="list-style-type: none"> <li>Define problem</li> <li>Discuss solution</li> <li>Examine collective teacher efficacy, best practices</li> <li>Gain program commitment for EDD model</li> </ul>
	<b>Stage 2</b> EDD Deep Learning	<ul style="list-style-type: none"> <li>Explore EDD theory of change</li> <li>Examine benchmarks, principles</li> <li>Practice protocols and norms</li> <li>Explore templates</li> </ul>
	<b>Stage 3</b> Build EDD Courses via CTE	<ul style="list-style-type: none"> <li>Schedule EDD courses, define short, mid, long-term goals</li> <li>Build EDD courses by leveraging institutional supports</li> <li>Train the trainer to build institutional capacity</li> <li>Apply precision practices via deep learning processes</li> </ul>
	<b>Stage 4</b> Evaluate Course Design and Delivery	<ul style="list-style-type: none"> <li>Evaluate design and delivery outcomes (quarterly)</li> <li>Use processes, protocols, norms to make learning visible</li> <li>Use data/evidence to inform next iteration</li> <li>Document best practices for program cross-pollination</li> </ul>
	<b>Stage 5</b> Quality Improvement Cycle (PDSA)	<ul style="list-style-type: none"> <li>Use evidence-based findings to improve EDD courses (annually)</li> <li>Deploy improved EDD courses (annually)</li> <li>Document best practices for program cross-pollination (annually)</li> </ul>

After consultation with the ID of next steps, I met with my fellow tenured faculty colleagues in the department. I presented data that showed outcome disparities at the associate level and how these would have downstream effects at the baccalaureate levels. I explained the EDD-ToC, supporting research, and a plan to eliminate the outcome gaps via a pilot of the EDD model. They recognized that quality variance was an ongoing issue as we had discussed it in other contexts as a department, especially as they related to part-time faculty courses, most of which we had little visibility. They acknowledged that these variances had significant downsides with respect to student and departmental goals. My colleagues were understandably reluctant to give up their right and privilege to design and deliver courses as they had always done – autonomously, independently, and protected from outside intervention. I understood their concerns as they were mine as well. I, too, felt the paradox of the freedom of having it my way, yet, having it at the cost of something greater than myself. I realized that it would take time to sit with what I proposed. I also recognized that this “sitting” needed to be accompanied by continued dialogue. Throughout several conversations, we centered our discussion on student success. I clarified that the EDD model would primarily be at the baccalaureate level, where new courses would be built. If they wanted to teach one of these new courses, they would be paid to design them using the EDD model. This approach would allow them to see the proposed change in a contained way without changing their current courses. I also suggested that we include gateway courses at the associate level for redesign as they would serve more students. I made clear that the product of the EDD-CDQ would be programmatically approved master courses developed using the 80/20 principle. After several deliberations, my colleagues and I agreed that the 80/20 principle was student-centric with significant upsides for students, instructors, and the program. We all recognized that it had real programmatic strengths in unifying faculty – both

part-time and full-time – around a consistent set of collectively derived agreements that would assure quality across the program, one that had eluded us for some time. After we agreed on going forward, I presented the EDD program buy-in and capacity-building stages. They decided that this was likely a good plan.

My full-time colleagues and I then invited our part-time faculty colleagues to meet and discuss where we would like to go and see if they would support it. I braced for resistance and prepared to make my case. To my pleasant surprise and relief, there was little resistance, if any. Our adjuncts saw it as an opportunity to have more consistent processes and quality course products, saving them time and allowing them to focus on teaching. They agreed to participate in the summer training to launch the EDD model pilot. In the summer of 2019, the ID, in partnership with a technologist, created EDD model course templates. I then transposed the EDD course prototype into this template and rereleased the first EDD model course, also referred to as the EDD model course prototype, to all instructors who teach its sections. In September 2019, the business and nursing departments participated in the training for the EDD model.

Later that fall, members of the college's instructional design and professional development team and the director of nursing and I – representing the EDD model implementation team – presented the EDD model pilot to the college's Board of Trustees. I showed initial promising results from the EDD course prototype. The reception was overwhelmingly positive and affirming. Trustees seemed to want to pursue full implementation. However, I cautioned against scaling the EDD model before pilot results were analyzed. I reasoned that the purpose of the pilot was to understand how the model behaved in context and that it would likely produce important insights for scalability. The implementation team also felt that the best course of action was to build momentum among the faculty. I recommended that we

proceed with the present two pilot programs, document progress, analyze results, and present findings for scale. The implementation team concurred. What was perhaps instructive was the audience's response. When I described the shifting the burden archetype and discussed the EDD-ToC parts, many heads visibly nodded in recognition in agreement. Silently, however, I recognized that the audience had many administrators and a very small sample of faculty. I also noted that a union leader present in the meeting sat back quietly.

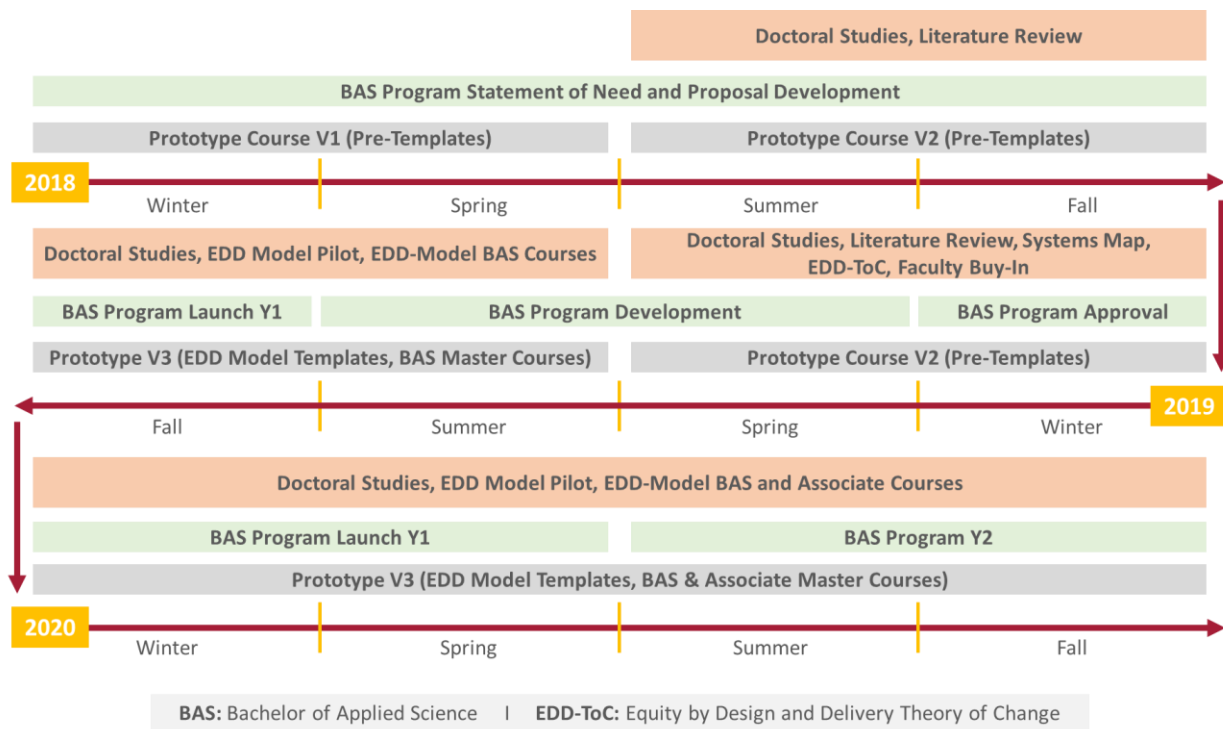
Late that fall and the ensuing months, I presented the EDD-ToC in regional and national conferences, and the responses were similarly positive. The audience was receptive and seemed to agree with my diagnosis of the problematic systems archetype: shifting the burden. They had questions about the progress of the implementation and wanted access to the EDD model course templates. Since it was still in the pilot stage, I explained that it was premature to release the templates. I nevertheless encouraged faculty to develop their own set of 80/20 agreements, preferably against the EDD framework benchmarks. I also distinguished the EDD course prototype, which manifested the 80/20 evidence-based agreements and served as a programmatic framework for instructional design, from the EDD templates, which served as structural outlines for course development. This distinction was necessary so that the audience did not walk away thinking that EDD model courses were canned, static, or inflexible. I emphasized that the EDD model courses are faculty-led, collaboratively-derived, program-level master courses based on the 80/20 principle to apply evidence-based practices. I also impressed the importance of putting the courses on a review cycle to ensure continuous improvement, currency, and relevance.

The conferences and the questions raised gave me occasion to consider operational matters across various contexts. I especially thought about the implementation of the EDD model where there were no instructional designers. There would need to be investments in this area for

the EDD model to work at all. I also noted the importance of dedicated time to collaborate to operationalize the 80/20 principle. I continued developing, refining, and iterating the EDD-ToC, particularly the EDD model, as I gained more insights from conferences, faculty colleagues, IDs, technologists, leadership, literature review, and as the pilot progressed. As of the winter term 2021, faculty in the department developed nine of the 12 baccalaureate courses and eight of the 12 associate-level courses using the EDD model. See Figure 21 for an approximate time of the EDD development and intervention timeline.

**Figure 21**

*Equity by Design and Delivery Development and Intervention Timeline*



Although the EDD model intends to increase reliable quality in instruction design and delivery by limiting harmful variances at the *program* level, this study cannot fully explore the degree to which the EDD model has reliably and effectively limited variance at the program

level. Limited research is in order because the program has not designed all its courses using the model. Also, data for courses developed in the EDD model are not yet available in the college's Tableau dashboards at the time of this dissertation. Such a study is for another day. This case study examines how the EDD model structures affect faculty and student perceptions and behaviors as leading indicators of systemic change to gain insights from available data. It intends to explore an underlying equity claim of the EDD-ToC: structures designed to shift isolated, idiosyncratic practices to collaborative, evidence-based practices change perceptions and behaviors in ways that lead to desired systemic change. This study aims to provide insights in this area by discussing data and findings in context.

### Chapter 3. Research Design and Methods

Research is formalized curiosity. It is poking and prying with a purpose.

~ Zora Neale Hurston

#### **Methodological Approach: Convergent Mixed-Methods Case Study**

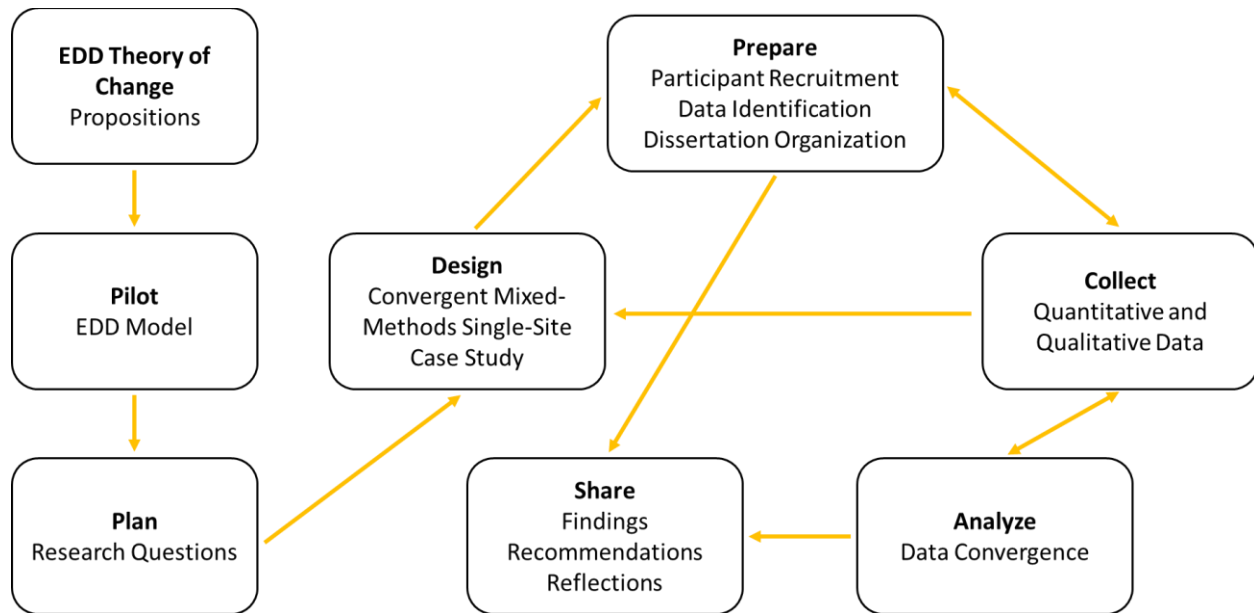
A convergent mixed-methods case study explores educator and student perceptions of and behaviors in the pilot of the EDD model in a mid-sized college in the U.S. as leading indicators of systemic change. The main unit of analysis is the pilot of the EDD model within a professional technical program in a college with certain enabling conditions. The EDD master courses are the embedded unit of analysis. The pilot nature of the EDD model within a particular type of program lends itself to a case study research, a tool appropriate for explaining how and why key variables relate during the early phases of a complex social phenomenon in context (Eisenhardt, 1989; Yin, 1994). A case study is a “strategy for doing research which involves an empirical investigation of a particular phenomenon within its real-life context using multiple sources of evidence” (Robson, 1993, p. 146). Given that there are fewer data points than variables of interest, multiple sources of evidence (qualitative and quantitative) converge to triangulate findings against a theoretical framework (Yin, 2018). I used manual coding techniques and other analytical tools to organize, analyze, and gain insights from multiple data sources against research questions.

The mixed-methods approach offered methodological flexibility and research benefits, among them, the ability to (a) use multiple data sources concurrently; (b) collect and analyze secondary data; (c) design, deliver, and analyze primary data; (d) conduct an in-depth analysis of the case to holistically recognize and organize patterns, themes, and participant meanings; (e) provide a descriptive and explanatory narrative of findings against research questions; and for

the researcher to (f) reflect on their role in the study (Creswell & Creswell, 2018). I collected and analyzed primary (i.e., aggregate and disaggregate course grades and completion rates from an EDD model course as well as course surveys of EDD model courses) and secondary data (i.e., student surveys, semi-structured student focus groups, semi-structured interviews of faculty, staff, and an administrator) to gain insights from the research questions against a unified systems change theoretical framework. As with most case studies, this one was centrally dynamic – linear but iterative (Yin, 2009). See Figure 22 for an illustration of the research design. It was also partially heuristic due to my role as a researcher-participant.

### Figure 22

#### *Case Study Design – Linear but Iterative*



Source: Adopted from Robert K. Yin's Case Study Research Design (2009).

As the architect of the EDD-ToC, my participation in the pilot is inextricably tied to the original development of the EDD as it lives in collaborative, co-creative work with colleagues and students. Thus, my experience in this case study includes data collected as a researcher as an

instrument. For example, during the semi-structured interviews, colleagues and I engaged in dialogue about our experience, individually and collectively. The free-flowing nature of the conversations allowed for the development of shared meaning and evoked insights during the analysis that may not have otherwise surfaced given my unique relationship to the EDD. This shared meaning is captured in dialogue and in my field notes. This is “consistent with the rhythm and flow of heuristic exploration and search for meaning” (Moustakas, 1990, p. 47). Therefore, I integrate data collected from researcher as instrument in the analysis, findings, recommendations, and reflection. I take special care to note where my experiential data is included to shed light on the research questions as the main purpose of the study versus one that is about my own transformation as scholar-practitioner in the study, which is secondary.

### **Study Parameters**

This case study answered the research questions by examining the behaviors and perceptions of faculty engaged in the pilot of the EDD model, EDD course development processes (CDP), and its EDD master courses during the spring term of 2018 to the winter term of 2021. It focused its inquiry on students enrolled in college courses from the winter term of 2019 to winter term 2021. The independent variables were the EDD model – inclusive of training, course development processes, and master courses – and EDD model participants (e.g., faculty, instructional designers, administrator, students). The dependent variables were EDD-model course grades and completion rates as well as faculty and student behaviors and perceptions as revealed by an analysis of the primary and secondary data.

### ***Justification of Parameters***

The EDD model operationalizes the elimination of significant disparities in student outcomes at the program level by leveraging collective teacher efficacy and institutional

resources. The EDD model is a pilot in a program at the college. Examining the effects of the EDD model during the early stages of its development and its limited application can provide early insights into the model's efficacy and scalability against desired outcomes. The EDD model enjoins the collaboration of program faculty and involves implicit and explicit agreements among all who deliver courses and why the behaviors and perceptions of the faculty are essential in the study's exploration. The inclusion of both full- and part-time faculty is intentional as the model aims to change program-level perceptions and behaviors. Like most higher education institutions, colleges and universities rely on a large adjunct faculty contingent to deliver courses across programs and disciplines (Hussar et al., 2020). This study separates the EDD master course as an embedded unit of analysis to gain insights into its functions within the EDD model. I theorize that student perceptions of the EDD model courses are instructive to the overall effectiveness of the intervention.

### *Participants*

The inclusionary criterion for participation was full-time and/or part-time faculty, program chairs, instructional designers, and administrators involved in the EDD model pilot. Adult students who took courses developed using the EDD model were also participants. All participant names in this study are pseudonyms to protect their identity.

Exclusionary criteria included (a) inability to participate during the length of the study, (b) inability to respond to follow-up interviews, (c) inability to withdraw from the study or may be harmed by participation, and (d) who cannot provide relevant data. Specifically, this study sought the consent of the following to participate in the study: instructors, staff, and administrators involved in the EDD model.

### *Research Approval*

The University of Washington Human Subjects Division (HSD) reviewed my proposal for appropriateness in December 2020. The HSD determined that my “proposed activity is human subjects research that qualifies for exempt status” in January 2021. I presented this determination to the college’s Institutional Research (IR) department, which used the HSD’s approval in place of the college’s own institutional review board process. The college approved my research, and I collected data soon after that.

### **Data Collection**

This convergent mixed-methods case study collected quantitative and qualitative data to answer research questions. Below is a description of each.

### *Quantitative Data*

**Course Outcomes.** The study used two secondary data sources, one set that is entirely quantitative and another that is mostly quantitative with short narrative answers from students. The first set was made up of student outcomes (e.g., course grades, course completion rates) of an introductory course during a five-year time scale from 2015-2016 to 2019-2020 academic years. An academic year is made up of four distinct quarters. Each begins in the summer and ends the following spring term. As of the time of this dissertation, the 2019-2020 academic year included course outcomes for three of the four terms: summer, fall, and winter. There were no course outcomes available from the college’s dashboard beginning in the spring term of 2020 and thereafter. Lack of student outcomes precluded this study’s ability to retrieve and analyze the course outcomes of EDD model courses built and delivered during that time, which constitutes the vast majority of the EDD model courses. Therefore, only the outcomes of the first EDD model course, an introductory business course (IBC-101) – also referred to as “EDD model

course A” or (EDDm-A) for short in this paper – is used. Multiple instructors taught IBC-101 sections during the study.

I also include course outcomes of 14 other courses with a “101” numerical course designation. Course identification of “101” in the college’s course catalog designates the course as an introductory course. Like IBC-101, their outcomes were generated from the college’s Tableau dashboards. Comparable introductory 101 courses were not part of the EDD-model pilot. Because it was not possible to keep the characteristics of non-EDD model courses constant while IBC-101 received the EDD model treatment, the other introductory courses do not make up a control group. Nevertheless, their inclusion helps determine possible larger college-level patterns. I gained permission from the IR department to use course outcomes data from the Tableau dashboard for this study.

**EDD Model Course Evaluations.** The other secondary data source was anonymous class evaluations developed for EDD model courses. The evaluation collected two types of data during fall 2020. The first asked students to rate their level of agreement against statements in five evaluation areas. These were the following with their number of statements in parentheses: (a) course overview and introduction (nine), (b) syllabus and learning objectives (seven), (c) routines (a proxy for structure) (nine), (d) course content and materials (six), and (e) instructor contribution (10). The 1-5 rating scale was 1 is "Strongly Disagree," 2 is "Disagree," 3 is "Neither Disagree nor Agree," 4 is "Agree," and 5 is "Strongly Agree." I calculated the average and standard deviation for each category and integrated these into the analytical findings. The second evaluation area asked students to respond to three open-ended questions. These responses were coded, analyzed, and integrated into the analytical narrative.

These anonymous evaluations were from the six individual EDD model courses, six with one section and one with two, for a total of eight classes. Two full-time faculty and one part-time faculty taught the courses. I taught and delivered EDDm-A, EDDm-E, and EDDm-F. Instructors offered nominal extra credit points to complete the evaluations during the last two weeks of the fall 2020 term. I gained permission from all instructors to use the evaluations of their EDD courses for this study. See Table 9 for a summary of the course evaluation characteristics. See Appendix C for a sample of the evaluation.

**Table 9**

*EDD Model Course Evaluation Data Collected, Fall 2020 (Secondary Data)*

Course	Analytica Designation	No. of Sections	Completed Evaluations / Registered Students	Instructor Type
100-level general business	EDDm-A (IBC-101)	1	15 / 22	Full-Time (tenured)
100-level career development	EDDm-B	2	28 / 40	Full-Time (tenure-track)
200-level marketing	EDDm-C	1	17 / 21	Full-Time (tenure-track)
200-level management	EDDm-D	1	10 / 15	Full-Time (tenure-track)
300-level organizational leadership	EDDm-E	1	19 / 22	Full-Time (tenured)
400-level marketing	EDDm-F	1	4 / 6	Full-Time (tenured)
400-level accounting	EDDm-G	1	5 / 6	Part-time (new)

*Qualitative Data*

**Faculty, Staff, and Administrative Recruitment.** In the winter of 2021, I reached out to three part- and two full-time faculty, one instructional designer, and the dean involved in the pilot of the EDD model about their interest in participating in this case study. They all agreed and gave their consent to participate in 1:1 one-hour interviews.

**Faculty, Staff, and Administrative 1:1 Interviews** To abide by COVID-19 pandemic protocols, I conducted each interview via Zoom, a virtual meeting platform. The session was semi-structured, engaging participants in an open-ended dialogue to explore themes against the research questions. Table 10 is a summary of the faculty, staff, and administrative participants. See Appendix F for interview themes and sample questions asked during the interviews.

**Table 10***Summary of Faculty, Staff, and Administrative Study Participants*

*Participant	Years at the College	Years of Teaching	Employment Status at College	# Courses Taught	Hybrid/ Online
Faculty A (Leo)	15	15	FT	10	85%
Faculty B (Evan)	1	11	FT	30	30%
Faculty C (Anna)	<1	<1	PT	3	100%
Faculty D (Neil)	6	12	PT	15	50%
Faculty E (Nora)	8	8	PT	10	100%
**Instructional Designer (Elle)	16	16	FT	9	89%
Administrator (Sara)	7	10	FT	7	43%

*Note:* # and % are estimates given by participants and inclusive of courses taught during the COVID pandemic. \*Names are pseudonyms. \*\*Instructional designer assisted faculty at the college in developing over 300 courses, most of which were hybrid or online.

**Student Participation Recruitment.** In winter term 2021, the college's Institutional Research (IR) generated a pool of students that met my study parameters and sent out an interest survey using Survey Monkey. Nineteen students responded, where 16 confirmed they met the study participant criteria and completed the interest survey. Of the 16, ten gave their consent to participate in the case study, and nine participated in the semi-structured focus group.

**Pre-Focus Group Student Survey.** Ten students who gave their consent to participate in the study completed the "Online Courses and Student Perceptions" survey. There was a total of ten survey sections, two of which were open-ended questions. The rest of the survey items asked students to (a) identify the number of online courses they took; (b) rate their agreement with statements using a Likert scale (i.e., 1 is "Strongly Disagree," 2 is "Disagree," 3 is "Neither Disagree nor Agree," 4 is "Agree," and 5 is "Strongly Agree"); and (c) identify their demographic markers (i.e., gender, age, employment, and race/ethnicity). Student responses in the survey revealed themes explored during the semi-structured student focus group that followed within a week of the survey completion. See Appendix D for a sample survey.

**Semi-Structured Student Focus Group.** Of the ten students who responded and completed the pre-focus group student survey on "Online Courses and Student Perceptions," nine attended a two-hour semi-structured focus group conducted via Zoom, a virtual meeting platform. Of these students, six were in the baccalaureate program, where most required courses were EDD model courses. The remaining four students took one or more of the lower-level (100-

and 200-level) EDD model courses. Some students took both lower-level and upper-level (300- and 400-level) courses developed using the EDD model.

**Compensation.** I offered all participants a \$25 gift card each to Amazon or Starbucks, their choice, as compensation for their time. All but one participant accepted. I delivered their gift cards digitally to abide by COVID protocols within 48 hours after the conclusion of their semi-structured interviews. See Table 11 for a summary of student participants in the semi-structured focus group. See Appendix E for interview themes and sample questions asked during the focus group.

**Table 11**

*Summary of Student Participants in Student Focus Group*

Demographic / EDD Model Course Taken	Number of Students
Gender	
Female	3
Male	6
Age	
18 to 24	3
25 to 34	1
35 to 44	4
45 to 54	1
Employment Status	
Employed, working full-time	6
Employed, working part-time	2
Not employed, looking for work	1
Race/Ethnicity	
Asian	1
Black or African American	1
Hispanic or Latino	1
Native American or Alaska Native	1
White	4
Another race or ethnicity	1

First-generation college student	7
EDD Model Courses Taken	
300 and 400 level	6
100 and 200 level	11

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*Note:* Some students took upper- and lower-level EDD model courses.

### **Ethical Standards: Participant Protections**

The mixed-methods nature of this research necessitated human participants. Their participation was obtained through clear, informed, and voluntary consent. I provided full documentation of risks and possible benefits. Prospective participants could decline or withdraw from participation at any time for any reason without penalty or repercussion. I exercised processes and procedures to maintain strict confidentiality. For example, given that participants are employees and students of the institution, I coded data collection from participants to maintain anonymity and privacy by using non-identifying codes. The code decipher was in a different location than the data collected.

Furthermore, the data and their coding instruments were in a non-institutional cloud-based or non-institution physical location. I backed up digital files in secure locations protected from institutional scrutiny. After three years of the study's conclusion, the code decipher will be destroyed to protect human subjects from possible future scrutiny. Participants will also be debriefed after the completion of the DiP.

### **Chapter 4. Analysis and Discussion of Findings**

It is with an objective mind endowed with a curious skepticism that we should engage in careful analysis and seek the reasons. Then, on the basis of seeing the reasons, we engender a faith that is accompanied by wisdom.

~ The Dalai Lama

#### **Analytical Strategy**

This convergent mixed-methods case study necessitated a flexible analytical approach to answer exploratory and explanatory research questions. The nature and substance of the research inquiry required the collection and analysis of quantitative and qualitative data. I used systems theory as the primary theoretical framework to maintain linkages between research questions, data collection and analysis, results, discussion of findings, and recommendations. Systems theory propositions explain how and why perceptions and behaviors were affected by the EDD model intervention in general (main unit of analysis) and the EDD model courses specifically (embedded unit of study). Other theoretical constructs added value to the study where relevant.

The data collected were organized by type (quantitative course outcomes, open-ended surveys, interviews, observations, etc.). The student outcomes were generated, summarized, and presented using Tableau, the host college's database and data visualization software. Data for the initial EDD model course was presented to faculty, staff, and administrative participants in the manner and form they would access and view the data if they were to retrieve them from Tableau during their regular professional duties. The intent was to align with and preserve the normal operating activities of the EDD model and the college's strategies. I added demarcation points to delineate the year when the EDD course prototype was first introduced for clarity. I also added calculations to identify data points not easily discerned from or hidden by the visualization

software due to graphical complexity. I showed the data to faculty and administrative participants at the end of the one-on-one interviews or during follow-up interviews due to time constraints to gain insights against research questions. Data for comparable online courses to the EDD model course were not presented to the faculty but are used here for comparative study. I analyzed quantitative and qualitative data from course evaluations separately then converged them against the research questions to establish relational links.

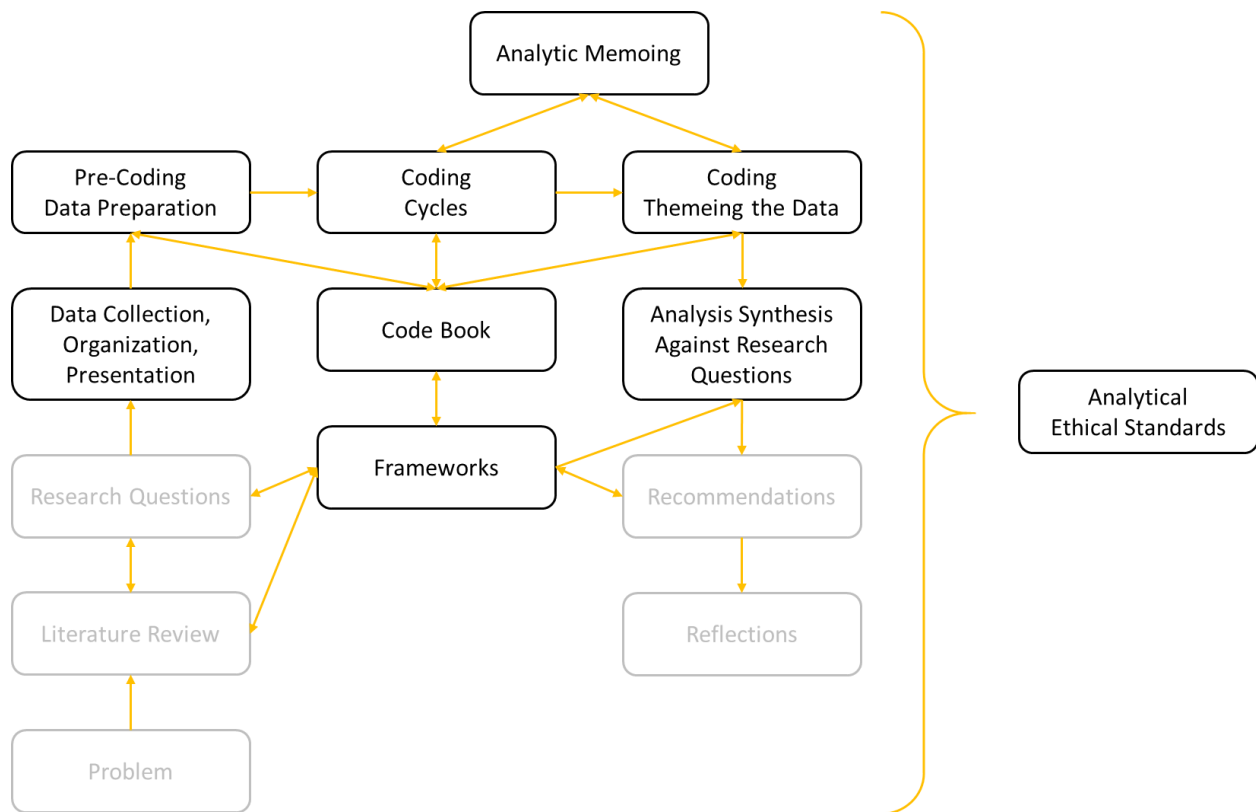
I manually coded the qualitative data and used various first and second cycle methods as described by Saldaña (2016) to capture insights from the various data sources. I began with prepping the data with attribute coding to capture setting, context, participant demographics, and structural coding to label and index passages against research questions and theoretical propositions for analytical access. I then proceeded with a subcoding method to nest children subcodes in parent codes (e.g., FRAME-SYSTEMS-BELIEF, FRAME-SYSTEMS-STRUCTURE, FRAME-TD-AUTONOMY). I also applied In Vivo coding (actual words used by participants) to capture participant voice. Holistic and themeing coding methods to capture categories, themes, and units of analysis served as the end of the first cycle. A secondary cycle involved pattern coding, which reorganized and reanalyzed first cycle codes to find linkages and categories against theoretical frames.

Analytic memoing and field notes intersected the various coding processes to reflect on “coding processes and code choices; how the process of inquiry is taking shape; and the emergent patterns, categories and subcategories, themes, and concepts” in the data (Saldaña, 2016, p. 44). I generated and collected qualitative data and recorded them in analytic memos and field notes in my capacity as researcher as instrument (Stewart, 2010; Xu & Storr, 2012). These reflexive tools, both analytic in nature, allowed me to apply and synthesize various principles as

a formally trained and experienced professional with advanced degrees in policy analysis, education, and business. They also let me to integrate my reflections, observations, and assessments given my unique position as the architect of the EDD-ToC. See Figure 23 for a graphical illustration of the analytical approach for this study.

**Figure 23**

*Approach to Data Analysis and Synthesis*



Data analysis was an iterative process until a synthesis of recurring themes against research questions and their theoretical propositions formed. The order of the questions and their discussion is deliberate in building, describing, and explaining findings primarily against systems theory. Foremost of the suppositions is that perceptions underly structures create patterns of behavior, which manifests in intangible, tangible, or measurable events (Meadows, 2008; Senge

2006). Themes and patterns against research questions are presented in a descriptive and explanatory narrative form in this chapter. The chapter ends with a discussion of findings.

### *Ethical Standards: Researcher-Participant*

As researcher-participant, I was the faculty lead or effective pilot manager of the EDD model and its processes. This position posed ethical and credibility matters to resolve at the outset and throughout the case study. To avoid bias in the data collection and analysis, I used the following strategies as discussed by Creswell and Creswell (2018):

1. Triangulated various data sources by examining sources and using themes derived to create coherent themes and their rationale.
2. Applied member checking techniques to ensure accuracy of study findings.
3. Explained alternative explanations that are supported by established literature.
4. Conveyed study and findings using rich, thick descriptions.
5. Acknowledged researcher bias and provided reflexivity for transparency of interpretations.

### *Limitations*

This study aims to answer the research questions. Specifically, it is bound to its scope and purpose, mainly to assess educator and student perceptions of and behaviors in the EDD model and its courses as predictors of change in context. Analysis and findings are in the form of a descriptive and explanatory narrative to explain what may be happening and *likely* implications for future EDD model iterations at scale. It does not make predictions of how it *will* behave at scale. Also, given the novelty and untested nature of the EDD model, reliability and validity are limited to the local context.

*Organization of Analysis and Use of Data*

This chapter proceeds with answering research inquiries beginning with the first two interlocked questions: (1) What are educator and student perceptions of the EDD model and its courses, and (2) how and why did the EDD model affect educator and student behaviors? The analytical differences between the two questions lie in the operational differences of the two analytical units. The main unit of analysis is the EDD model pilot, and the embedded unit of analysis is the EDD master courses. The perceptions and opinions of educators and learners are essential to unveil. They can reveal underlying beliefs about the EDD model and likely support of its implementation in programs. Understanding the relational links between perceptions and model structures is vital to analyzing how, why, and if their linkages changed system actor behaviors. Insights can help shed light on the model's likely efficacy to result in intended outcomes and sustain stakeholder support at scale. The narrative presents these relationships in sequential order to align with system theory's propositions: first, the analysis of perceptions, then behaviors, and, finally, rationale. Words, phrases, and statements made by study participants are embedded in quotation marks to integrate and preserve participant voice. Inclusion of antecedents and other words spoken prior to the quoted passage is in brackets to maintain participant meaning with their quoted passage. Descriptive findings from the third research question concerned with course outcomes of the first EDD model course follow the thematic findings of the first two questions. Analysis of the following quantitative and qualitative data sets converge to answer research inquiries:

- Semi-structured interviews with five faculty (two full-time, three part-time), one senior instructional designer, and one academic administrator
- Semi-structured follow-up interviews with four faculty (two full-time, two part-time)

- One pre-focus group survey involving ten students
- Semi-structured focus group interview with nine students
- Eight class evaluations
- My observations in professional capacities as captured in analytic memos and field notes

The chapter ends with a discussion of findings against theoretical propositions and implications for the results and the study. It also suggests future directions.

### **Educator and Student Perceptions and Behaviors**

The analysis of the quantitative and qualitative data used for this case study generated five main themes against the first two research questions concerned with educator and student perceptions of and behaviors in the EDD model and its courses. Student participants were not asked about their perceptions of the EDD model pilot as they were not implementers of the intervention. Instead, the collection of student-related data focused on student perceptions and behaviors in courses developed using the EDD model.

#### ***Theme 1: Similar Perceptions of Aims, Varied Perceptions of Behaviors***

**Faculty Perceptions.** When asked to describe the EDD model, its course development processes (CDP), and its aims, all faculty, staff, and administrator participants (hereto referred to as “educators”) gave similar descriptions. They used terms such as “systemic model,” “big picture,” “consistent course structure,” “consistency across courses,” “same look and feel,” and “roadmap to design and facilitate courses” to describe the EDD model. They used terms such as “team,” “collaboration,” “collaborative academic freedom,” “ongoing conversation,” “co-ownership,” “80/20 rule,” and “80/20 principle” to describe the EDD-CDP. All faculty who built at least one EDD model course noted the advisory and support role of the instructional designer –

“checking in” and serving as “sidekick” in creating the course, keeping them on track and focused. They noted the use of the EDD master course templates (MCT) to build shared and common courses at the program level to achieve “consistency” across the program, “clarity” of assignments, and “transparent” course and assignment expectations no matter which of their colleagues taught the course. Educators used related terms and phrases such as “fairness,” “social justice,” “equity,” “equity, diversity, and inclusion,” “equitable outcomes,” “equal,” “cohesive space,” “accessible to all,” “same accessibility and opportunity to succeed,” to “increase student retention and completion,” “close equity gaps” and “ensure that everybody has similar outcomes” as the EDD model’s aims. They described the EDD model’s purpose of “social justice,” “equity,” “equal opportunity,” and their derivatives as similar or aligned with those of the college’s own equity goals to increase completion rates and eliminate disparate student outcomes.

They discussed the EDD model, EDD-CDP, EDD-MCT, and the EDD courses in fluid terms as if they were one and the same – often referring to each and collectively simply as the “EDD model.” Nearly all used the term “delivery” not as a mode of instruction but as synonymous with the act of teaching. Their descriptions suggested that they understood the EDD model would have different or additional considerations or applications in online learning relative to traditional F2F classrooms. The most extensive description of the EDD model was from the instructional designer (Elle):

First, and foremost, it’s a systemic model in that it is looking to develop and design courses at the program level and systematically so that there is efficiency in not only course design, but also course delivery. There is consistency in what those courses look like, the experiences that students have and the experience that faculty have in terms of

designing those courses, evaluating those courses for themselves, reviewing those courses with others within the program. The model looks to develop benchmarks within a program on various things that the program is looking for. Those benchmarks are designed to support equity, diversity, and inclusion for students. It's also designed to support the program outcomes and the individual course outcomes. The last piece of the EDD model that stands out in my mind is the ability for faculty to work in a collaborative way in terms of not only developing the templates and the design of the course, but also to collaboratively evaluate what's happening in their courses, working together rather than in silos.

While all understood the EDD-CDP as a collaborative activity to gain “consistency” and “agreements” in program courses to serve students, there were some differences in their understanding of the procedural details. Beyond the larger organizational structures, pedagogical strategies, and content areas of the course, there was uncertainty as to what could be changed. The differing sense in the details seemed to be rooted in whether faculty attended the initial EDD model training and whether they had built an EDD model course. For example, a part-time instructor (Nora), who was not able to attend the fall 2019 training and “inherited a course,” shared that she believed the EDD-CDP to entail “many iterations and many reviews with other people ... a multi-stage, multi-people review,” possibly involving a “Quality Matters review.” She did not describe the course development process itself. She also said that if she could change some things in the course, it would be to move all weekly assignment due dates, currently spread across the week, as one deadline at the end of the week.

As I listened to Nora, I noted in my field notes that she did not seem to know which of the course elements could be changed of an EDD model course. The use of the EDD course

prototype as a foundation for building a course seemed to maintain general consistency as evidenced by the EDD model courses built and delivered. However, where the 80 percent ended and the 20 percent discretion began was not immediately apparent in the prototype or to the faculty who taught the courses. At the end of the interview and as part of my role as co-chair of the department, I advised Nora against assigning one due date for many assignments. I explained that distributing deadlines is part of the Universal Design for Learning (UDL) principle of supporting skill mastery and knowledge integration. I also added that if she were interested in pursuing this change, it would be good to talk with the team to consider what the impact might be as part of our 80/20 agreement. After our conversation, I wrote in my field notes that what constituted 80 percent of a course, the part that would remain constant was verbalized and understood but not formally documented. These agreements included such course characteristics and elements as organization, content, assessments, grading, and late policies. After the conversation with Nora, I wrote in my field notes the importance of documentation. After the study concluded, I offered my recollections and recommendations for 80/20 agreements to my colleagues.

Another adjunct faculty, Neil, who had not yet built an EDD model course, understood its development to be collaborative, involving TiLTing<sup>3</sup> the whole course and making clear to students the “course purpose,” “learning objectives,” and “how to complete” each assignment. He did not mention the involvement of an instructional designer; though, my work with Neil in the past suggested that he would welcome their advisory role. Yet another participant, a full-time faculty member (Leo), who had not yet developed an EDD master course but taught one,

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<sup>3</sup> “Tilting” is a reference to the Transparency in Learning and Teaching (TiLT) framework developed by Mary-Ann Winkelmes, PhD. (2014). The framework calls for clarity of course purpose, outcomes, and the tasks required for completing assignments.

described the EDD-CDP as starting with “learning outcomes and then developing curriculum.” He understood this development to include student evaluations and the involvement of other faculty to review assessments and student outcomes in a collaborative way to “help each other understand what we’ve done in the past and discuss ways to make assessments and assignments more effective.” He also distinguished what occurred before the EDD model pilot, “In the past, it’s always been done individually. Now, we’re on a model ... we’re working together collaboratively to ... make the courses better.” There was no explicit mention of the instructional designer.

On the other hand, educators who built courses using the EDD-CDP described the processes more closely to those intended by the EDD model. They explained the role of the instructional designer as “supportive,” the EDD course prototype as a “framework” and “foundational,” and the EDD templates as containing the structural parts of course design. For example, Anna, a new part-time faculty and first-time instructor, and Evan, a new full-time and experienced instructor, joined the department in 2020. Their hiring process involved discussion of the EDD model as a pilot in the program. They built several EDD model courses in fall 2020. They both took online training courses and created courses using the EDD-CDP. They described the process as weekly “coaching” sessions with an instructional designer to build their courses. They used the EDD-MCT and applied principles in the EDD course prototype. Anna created three EDD model courses during fall 2020 and winter 2021 terms. Evan redesigned six lower-level courses against the prototype and enhanced an existing 300-level EDD master course during that time. Anna characterized the EDD model and its development processes as an “order of operations and a system.” Evan saw the development as iterative, the first cycle as using the prototype to build the course foundation and “tweaking here and here” over time. As co-chair in

the department and lead faculty in the baccalaureate program, I worked with both in applying the 80/20 principle.

Regardless of the varying descriptions of the EDD-CDP, which appeared to depend on whether participants attended the EDD model training or built an EDD master course, the educators clearly understood that the EDD model promotes consistency through collaborative activities and that it is a significant shift from past practices. Also, they agreed that the master courses were for program-wide use, collaboratively guided by the 80/20 principle. Indeed, they equated the EDD model as “teamwork.”

The participant’s use of words, tone of voice, and body language suggested no apparent resistance to the EDD model, teamwork, collaboration, cooperation, sharing courses, coming to agreements, or any of its propositions. They seemed to have bought in on the idea, even by those hired after adopting the EDD model pilot in 2019. It was not all that surprising. The faculty hiring process vetted candidates in 2019 and 2020 for their receptiveness to the EDD model. In fact, one educator wanted the program to meet more often to facilitate becoming a “better team.” He recognized that program participants spoke the EDD language but wondered how the EDD model principles could be sustained without dedicated time to work together.

### ***Theme 2: Collegiality, Accountability, and Team Learning***

The educators associated the EDD model with a sense of collegiality rooted in their shared responsibility to help students in the program succeed. They regarded the need for “cooperation,” “collaboration,” and “regular meetings” to develop agreements on and delivery of what constitutes “the core of the course(s).” They saw the EDD model’s collaborative processes as mechanisms for team learning where faculty have regular conversations about what should be taught, what ways to teach, and what supports to use to facilitate student learning. They used

such terms and phrases as “collaboration,” “teamwork,” “team,” “team perspective,” “coming together,” and “collaborative freedom” in association with the “80/20 principle,” “80 percent,” and the “80/20 rule” to derive “collective agreements,” “collaborative agreements,” “some agreement,” “common goal,” and “consistency” at the course and program levels. They saw the collaborative processes as a place to “weigh-in,” “discuss their ideas,” “assess student outcomes,” “review courses,” “longitudinally compare,” “talk about what could be made better,” and to be “accountable” to as well as “learn from each other.”

Educators believed that by coming together, they would have a meeting of the minds to discuss core elements of the courses (e.g., content, learning outcomes, assessments, supports) and how to align these. The meetings that led to the agreement to pilot the EDD model emphasized the need for collaboration for program alignment to close equity gaps. The provisional trust faculty placed on the value of collaboration seemed to deepen. Whereas in the beginning, they went along out of practicality or curiosity. Over time, the support seemed to evolve purposely with a growing recognition of its value to students and a sense of collegiality with peers. They believed that collaboration would make their work easier because they would achieve consistency to support students and each other. Nora discussed the 80/20 as improving processes and courses over time through methodical, respectful, and purposeful debate:

Building the [course] becomes easier ... it's like a science. We know what discussion [faculty] need to have. ... We can change 20 percent of the course as instructor discretion. It makes it collegial ... like a healthy debate. We're all working from the same standard ... everything is clearly laid out. I think it just set you up for healthy and focused discussion ... because you know what there is to discuss.

All the educators interviewed noted that the 80/20 principle changed faculty behaviors from siloed postures to having conversations, arriving at agreements, and using master courses. It also caused instructors to change their teaching. Before, there was no mechanism for coming together to agree to a level of consistency or using shared resources. It was a very highly individualized situation. Neil observed that faculty developed their “own courses” before the EDD model and were in constant “iterative mode.” With the agreed-upon master course, the iterative mode happened at the collective level. Leo said that using a master course to teach has exposed him to new instructional strategies:

Sometimes, when you get caught in teaching class the same way over a decade or a couple of decades, you get comfortable doing it ... being able to go into a core shell that’s developed with universal design that comes with the EDD model ... helps me see what students are liking, and why they like it. ... It helps me gain new skills and ways of doing things.

For Leo, the idea of inheriting a course that someone else developed is not new and one he welcomed at the outset of the EDD model pilot. He said that he taught in other colleges where full-time faculty developed courses for accreditation purposes. These faculty gave master courses to part-time instructors to assure quality and maintain consistency. He acknowledged, however, that having common courses or ones developed collaboratively is not necessarily a norm in the college of this study and colleges in general and may conflict with the notion of academic freedom:

I could see how some people would feel like this is their kingdom and [say], “how dare you tell me what to do.” But, overall, I’m a big proponent for it because I see the bigger picture of helping students get to completion more successfully. There's combined

wisdom of faculty members who all have the same goal of helping them complete. We've got a consistent measure to help us see where we can make changes better because we're have more consistency within the courses.

Neil perceived the 80/20 principle in terms of different orientations to academic freedom. He recalled the fall 2020 departmental meeting to review the IBC-101 course and differentiated between individual and collective academic freedom. He believed that the 80 percent represented the core elements of the course that were collectively derived and consistently applied to benefit students. He characterized the 80 percent a collective voice:

The academic freedom that *we* had was in the 80 percent part. In the common meeting that we had ... that was our chance to say, well, maybe we should change this thing. At the end of the day, we were agreeing. The whole point was to come to some agreement as to what the core of the course is going to be like. ... It isn't to say that there wasn't freedom in that aspect of our conversation. It was *collaborative freedom*. [Emphasis to approximate Neil's tone.]

Neil suggested that not only was the 20 percent in the instructor discretion when the course was taught. It was also during the deliberation of what would constitute 80 percent of the course. He said that when individual faculty came together to discuss what would constitute the core of the course, it was at that time individuals could voice what each felt was important to teach. In his mind, the ability for individuals to be heard and ideas considered was also academic freedom. In other words, it was not collaborative freedom unless each colleague could freely voice their ideas without repercussion.

For educators, the integrity of 80/20 collective agreements dependent on a willingness to hold each other accountable. When asked how the EDD model and its processes would affect faculty behaviors over time, Anna replied:

I think it would add a layer of accountability in the sense that by having a system that is utilized across the entire program, it asks the faculty to approach it from more of a team perspective ... because it creates a system. It's something where we all kind of have to want to work together and have the common goal ... without that system at times it's easier to kind of stray.

Neil saw that the 80/20 collaboration changes behavior and eventually affects mindsets in ways that are good for the collective and serve individual interests in the end. He acknowledged that people come with strong opinions to a meeting, but the act of coming together toward a goal has its own effects:

When you see a group of faculty, highly individuated with very specific opinions about things, and you sit [us] down with the goal of collaboration toward a specific end product, we're going to sit down and collaborate and eventually ... get things done. ... Everybody arrives with the idea that they're going to commit to ... putting specific desires on the shelf for the purpose of getting to that collaborative end product.

He made a more nuanced point by illustrating an example where faculty come together to agree on what the core of a completed course ought to be:

They're going to do whatever is necessary to do that, and so I think that that can shelve a lot of the more negative behaviors. ... Nobody's coming who will walk away from the process. Nobody is going to just pay lip service to it and then say, "I'll run the course my own way to the end." The alternative [mindset] is "I'm going to commit whatever is

necessary to make sure I feel comfortable with the end product of this course.” That is a really important commitment to get on behalf of faculty. It’s a behavior change, especially for faculty who are tenured.

For the most part faculty commitment to collaborate was high. They saw the value of coming together to agree on common elements and achieve consistency. They also perceived value in gaining visibility of what may be happening across courses in the program.

Evan, a new tenure-track faculty, built several lower-level EDD model courses in his first two quarters in the department. As part of the process, he used existing courses for content matter. He noticed that several of the courses had similar projects. He also heard from the students that they were “a little tired” of doing the same type of project from one class to the next. During the development, he came to me as department co-chair and let me know of what he discovered. I had not taught the courses in a while and was not aware of how similar they had become. It is not uncommon for chairs not to have access to courses taught by others in the department. If not for the EDD model, which involves the chair in the course development, course overlaps would be challenging to detect. Because of the EDD-CDP, Evan and I were able to have conversations about resolving project duplications. Evan recalled this conversation during our case study interview and noted how crucial it would be for the department to have more meetings to become aware of what may be happening in program courses. I could not agree more. After the interview, I wrote in my field note how fantastic it was that Evan was not protective of the course as *his*. He thought of them as *ours* – as the department’s.

### ***Theme 3: System for Instructor and Student Success***

Educators and students perceive that the EDD model’s systematic methods and structures support both teacher and student success. Educators used such terms and phrases as “great

roadmap,” “system,” “systemization,” “systemic review,” “process,” and “guide” to create “well-designed,” “transparent,” “accessible,” “consistent” courses that allow instructors to “align with outcomes,” “focus on teaching,” and not spend “a lot of time editing” or “figuring out” courses. Students described courses developed using the EDD model processes as “structured,” “organized,” “clear,” “enjoyable,” and “fun,” where they felt “set up for success” through “clear expectations,” “step-by-step” instructions, “broken down” assignments, weekly “routines,” and “good feedback.” Virtually no student complained of feeling isolated, lonely, or disconnected from the online EDD model courses.

**Roadmap.** Anna, new to the college and a first-time instructor, used the EDD-CDP to build three upper-level (300- and 400-level) EDD model courses for the department during the fall 2020 and winter 2021 terms. She said:

[The EDD model] creates a great roadmap for me to both design the course and ... facilitate the courses. ... It's very well aligned with the goals of the College, the goals of the course, and the goals of the materials. ... It really helps you pull all that information together to create this amazing map for students.

Leo, a veteran full-time faculty, spoke of how EDD master courses set new faculty and students for success. He said, “[Faculty] will be better supported because [they're] not trying to figure out how to get students from point A to Z. It is already there! Students can have confidence that they can get the support they need.” He added that “theoretically, we would have higher graduation rate because it kind of helps students step by step to ... getting closer to finishing. It helps demystify any confusion that may exist about what's expected of them, how, and why they're doing what they're doing.”

Elle, a veteran instructional designer, explained that the EDD master courses anticipate the learning needs of students and account for them in the design of the course. She understood why people unfamiliar with instructional design might think that the EDD model is a template. She emphasized that the model is not. Rather, she said that it is a “framework,” one that embeds instructional supports:

There are things baked into the design of the modules, the design of the course. ... There are things that are deeper than what you see visually. ... Things are organized and arranged in a particular way because research tells us that students will stumble ... unless you’ve addressed it. It’s really sort of preloading the modules in the design to help students avoid those barriers.

Neil, a part-time instructor, reflected on his experience with teaching IBC-101, the first course designed using EDD model principles:

I can tell you that the use of the EDD course, I never once had a question from a student, where there was any sort of confusion ... about the purpose of the assignment, lack of understanding about the material ... how it connected to anything. You never saw those questions in this curriculum.

Students affirmed this perspective in both the interviews and the evaluations. Tom, a second-year student in one of the department’s credentialing pathways, took the first EDD master course (EDDm-A) in the summer of 2020 during the height of the COVID pandemic. He said of EDDm-A, “[I]f there’s a gold standard on what it should look like or a model, I felt that [IBC-101] has done the best so far. ... I took that class over the summer and that was one of the least confusing classes.” Estee, a first-year student who took the course in winter of 2021 added:

I'm actually enrolled in it right now ... out of the ones I'm taking right now it's my favorite. I love it! It's fun! In the beginning, when I saw the project, I was like oh my god, no! But the way it's building up to it, and the way it's kind of really doing it in stages. It helps. It's awesome. It's fun! I feel like you're actually set up for success in that class.

Larry, another student, added, "It's concise. ... You're given a roadmap of how to succeed, like you're told what you need to do ... when you need to do it, about how much time you need to account for. It's all laid out so well."

When Tom, a second-year student, asked if IBC-101 was designed to have many supports because it is an introductory course, Ellon, a fourth-year student, who took several EDD model courses, offered his opinion, "The higher up you get ... the more useful [the structure] is because ... [classes] get more difficult."

A common reaction by students is their unexpected, yet positive, reception to routines and multi-stage assignments in the EDD model courses. For example, Laena, a fourth-year student, shared, "It's my first introduction to routines, and I love that concept. For the instructor to say, 'Hey, get used to this,' it just really helps with the success." Nancy, another fourth-year student, chimed in:

[IBC-101] was also my first online class that had routines where assignments were due on different days. Every online class that I had prior ... all assignments were due one day of the week, including ... the quiz. ... I would wait until that day, especially if it was a Sunday. ... And so having a routine, not only did it help with student success, but it made me connected to the online class throughout the entire quarter.

Multiple heads nodded upon hearing Nancy speak of how the routines connected her to the course throughout the quarter.

The above sentiments were not reserved just for IBC-101 (EDDm-A in this study). Students in eight EDD model courses in the fall of 2020 taught by three instructors gave all courses high marks in evaluation categories: (a) course overview and introduction, (b) syllabus and learning objectives, (c) course structure and organization, (d) course content and materials, and (e) instructor contribution. Students rated their degree of agreements against course assessment statements (e.g., “Onboarding activities during the first week of class help set students up for success in the course,” “The weekly course expectations are clear,” and “The checklists/assignment guides help me meet assignment expectations”) against a 5-point scale, where 1 is “Strongly Disagree” and 5 is “Strongly Agree.” (See Appendix C for an example of the EDD model course evaluation.) The response rate was 74.2 percent representing 98 of 132 students registered in the eight courses. In all eight classes, students consistently agreed that course design helped them meet course objectives. Average ratings of all classes were between 4.1 and 4.6, with a standard deviation between 0.43 and 0.60, showing a skewed and narrowed cluster of sentiments toward the higher ratings. Common comments in the evaluations included such terms and phrases as “clear,” “organized,” “well maintained,” “very structured,” “clearly outlined,” “clear expectations,” “very thorough,” “clear and concise,” “enjoyed class,” “very engaged,” “great feedback,” and that they liked the “multi-stage,” “broken down” projects and class routines. There were also comments about shortening videos, including more videos, and using different technologies. The ratings and student comments suggested that, on average, students regarded the courses as “helpful,” “useful,” “enjoyable,” and meeting their learning

needs. Students also wanted better applications of technologies to enhance learning. See Table 12 for a summary of the course evaluation of EDD model courses in fall 2020.

**Table 12**

*EDD Model Course Evaluations, Fall 2020*

Course	Completed Evaluations / Registered Students	Course Overview & Introduction	Syllabus & Learning Objectives	Course Structure & Organization	Course Content & Materials	Instructor Contribution
EDDm-A	15/22	4.5(0.35)	4.2(0.42)	4.4(0.43)	4.4(0.55)	4.4(0.43)
EDDm-B1	14/21	4.2(1.18)	4.0(0.39)	4.5(0.61)	4.5(0.61)	4.3(0.53)
EDDM-B2	14/19	4.6(0.46)	4.0(0.42)	4.3(0.65)	4.3(0.62)	4.5(0.54)
EDDm-C1	17/21	4.6(0.41)	4.1(0.36)	4.5(0.43)	4.4(0.48)	4.7(0.35)
EDDm-D	10/15	4.8(0.38)	4.1(0.45)	4.3(0.54)	4.3(0.49)	4.3(0.62)
EDDm-E	19/22	4.7(0.32)	4.2(0.44)	4.4(0.57)	4.5(0.65)	4.7(0.42)
EDDm-F	4/6	5.0(0.04)	4.1(0.48)	4.8(0.21)	4.6(0.43)	5.0(0.04)
EDDm-G	5/6	4.7(0.41)	3.8(0.12)	4.9(0.14)	4.7(0.35)	5.0(0.09)
All EDDms	98/132	4.6(0.60)	4.1(0.43)	4.5(0.54)	4.4(0.56)	4.6(0.48)

*Note:* The classes are 100-, 200-, 300-, and 400-level courses. I taught EDDm-A, EDDm-E, EDDm-F. A full-time instructor taught EDDm-B1 and B2, EDDm-C, and EDDm-D. A part-time instructor taught EDDm-G.

**Behaviors.** Nora, an experienced part-time instructor, believed that the EDD model courses benefit the students and help the instructors. She said that having a well-designed course that is ready for teaching at the time of a course assignment helps her “feel supported” as an adjunct instructor:

[J]ust like we require our students ... we make our expectations known. ... It's nice, especially as an adjunct, to know what I'm expected to do. I don't have time to sit in meetings ... or if I missed the training. I don't mind the structure already in place. That's great for me!

For Nora, this support was in the form of a course that has been through a team review, approved by the program, and readily accessible when she needed it. She shared a scenario where she was assigned IBC-101 (EDDm-A) to teach. She asked for the master course shell, which was ready to launch, including all the course materials (i.e., LMS, book, 3<sup>rd</sup>-party platform, syllabus, assignments, assessments, etc.). She said that this EDD model process was previously missing in the program. With the EDD model, she feels “automatically supported.”

Neil, an experienced part-time instructor, said that the benefits for adjuncts would be in “orders of magnitude.” He said that among the value of providing an EDD master course to an adjunct who did not have teaching experience is to “hand me a course that I can *aspire* to” and be ready to teach students on day one. He emphasized that “nobody [comes to you] with a graduate-level course in curriculum design. They don't have this experience and won't for three years.” In his mind, handing the EDD master course to new faculty “right off the bat” would be like accelerating a “four years of on-the-job training and back it up to right now,” where the program would say, “Here's what a good course looks like.” He contrasted:

The alternative is that that faculty member would have struggled to develop the course over a period of a year or two to get somewhere even close to what a well- designed course will look like. So yeah, not only are you improving their job satisfaction, you're also probably improving your employee retention.

*Theme 4: Structural Supports Save Time, Reduce Stress*

Educators and students described the differences they saw and experienced before and during the pilot of the EDD model – where one was marked by “lost time,” “confusion,” and “frustration,” and the other by “efficiency,” “clarity,” and “feeling supported.” Educators noted the “clarity,” “consistency,” “structure,” and “framework” of EDD processes. They cited the EDD course prototype and EDD-MCT as sources for the change. Students said that the “course structure” of EDD model courses with their “clear expectations,” “clear supports” throughout the course, “staged assignments,” and course “routines” made them feel “set up for success.” These student assessments in the focus group largely aligned with student perception ratings and their written comments in course evaluations presented in the previous theme.

**Pre-Pilot: Time Lost.** The faculty discussed how much time they usually committed to managing and supporting online teaching and learning activities before the EDD model pilot and use of its courses. These generally showed up as the “many questions” regarding assignments and expectations students asked in the “many emails” in their inboxes, which became “a lot” to manage and resulted in delayed responses. It was also time spent developing courses where they may only be one week or one assignment ahead of the students. From the students’ perspectives, delayed responses to emails, delays in grading, and delays, in general, were sources of frustration and demotivation. These added to their sense of not knowing how they are doing the course or how to meet instructor expectations. Laena said, “It's kind of disappointing when I'm in a class, and you wait weeks and weeks to get a grade because you really look forward to it. ‘How did I do?’ It also lets you know ... what the professor expects once you get the grade. Unless you know how, you need to move going forward.” Estee said that delays in instructor feedback were discouraging:

It can take weeks to figure out what the professor is about, what his expectations are. Are you meeting the expectations? Because you always have to get that feel for that professor and how he's grading. So, you put all this work in, and then sometimes it takes weeks until you get any type of feedback. So, you have no idea. Are you on the right track? Are you way off?

Larry added how a delayed response caused him to commit attention to issues as he tried to move forward:

Eventually, it would get to a point where I'd had enough tied-up attention on these little issues that I was [caught up] in the design and structure of the online course as opposed to the actual course material, and that was problematic.

For part-time faculty, who often have course assignments in multiple colleges, the absence of well-designed courses to teach at the time of contract was a source of ongoing frustration and stress. As subject matter experts (SME), they felt confident in their knowledge base. They were less sure of how to deliver program expectations pedagogically, efficiently, and effectively, which they said differed across the colleges they served. Absent a “structured course,” “master course,” or clear processes for online course set up, they “felt lost” and “unsupported.” They felt this way, especially when the college expected them to “build a course without additional pay” or sufficient pay. Caught in the uncertainties of a regular class load to support their economic needs, adjunct faculty “do what [they] can.” Their frustrations appeared to be additional and different from ones they would otherwise experience as part-time instructors. Neil, a veteran part-time instructor, said that most adjuncts are hired “right of the field,” and “may have the gift of gab,” and know some “bells and whistles” to hold a classroom’s attention. They may think that because it worked in the physical classroom, it would also work

online. He said missing “a good course right of the bat,” inexperienced instructors would struggle for a long time before they developed a good course, assuming they taught that same course over an extended period. As I listened to the part-time faculty, I noted in my field notes that part-time faculty never once complained to me about not having master courses before the EDD model.

As an instructional designer, Elle found that much of her time was spent helping struggling instructors “figuring out” the structural basics of the course (e.g., homepage, navigation, and where assignments go). Without a framework for sound instructional design, it became a piecemeal process. As a result, instructors released assignments one at a time, just before they are due, or irregularly across the term with little guidance or logic about how course elements connected to the overall purpose or expectations of the course. These administrative hurdles were not lost on students as they labored to make sense of what they saw and experienced online, which were especially pronounced during the 2020 COVID-19 pandemic.

The sudden shift from F2F all online learning during the COVID-19 pandemic laid bare the challenges of building courses on the fly, even for experienced instructors. Students described how much “figuring out courses” and “figuring what the professor is about” consumed their time and affected their motivation to persist in their online courses. Rachel, a first-general college student and new to the college in 2020, would choose F2F over online courses any other day but only had online courses to choose from during the pandemic. The instructors who typically taught in traditional classrooms would have preferred not to teach online as well. Still, there they were: an instructor without a ready-made online course and a student who nevertheless seeks what Nate and Tom characterized as “quality education.” For Rachel, the quarter-long in-development-mode nature of a course was too much.

[It] kind of affected the motivation. ... I actually had to drop a class which really hurt my soul. ... The way it was organized ... the professor was kinda figuring it out as he went, and it was horrible. So, it did not work for me. Halfway through, I just had to give up because he was behind on publishing stuff and then he went way ahead publishing stuff. Then stuff that was in the assignments was missing in the materials. So, it was just a mess, and that was very frustrating for the entire quarter. ... because it really, really affected me, I had to drop the course.

Nate, a fourth-year student, had a similar experience as Rachel and lamented the loss of learning. He saw the same disorganization in a course and wondered if the professor “received sufficient support.” He said:

What [Rachel] described is almost exactly what had happened to me. Fortunately, it ended up working to my advantage in the sense that towards the end of the quarter, because they clearly weren't that prepared, they kind of lowered the standards ... and that ended up working well for me. ... Did I get a good grade? Yes. Did I feel like I learned statistics? No.

When I heard Nate speak of his angst over getting a good grade, which he wanted, and losing the opportunity to learn, which he did not, it made me wonder how many of the students in the baccalaureate program had the competencies for statistics – required to perform analytics in several of the program’s courses. I noted then how upper-level courses might have to embed additional supports for students. I also wondered where these supports would be placed in an already packed curriculum and how they would be implemented.

**During Pilot: Time Savings.** In 2019, the department shifted to hybrid and online courses as part of a larger strategy to meet students' needs and prepare for the EDD model. The

largest multi-section courses (often gateway courses), upper-level courses, and other courses were either already or were planned to be redesigned using the EDD model. When the pandemic shifted all courses to go online, there were delivery disruptions, but not to the extent experienced by other programs not positioned for the sudden shift. The instructional designer in the study noted this difference. She said that the EDD course prototype and templates provided a framework for efficient building and delivery of well-designed courses. Building new courses would have been much longer without the EDD model tools and processes. As a matter of comparison, I heard firsthand in Zoom meetings faculty from other departments struggle, saying that they felt as if they were “underwater,” “drowning,” and “barely holding it together.” It seemed that my colleagues, even with their best intentions and efforts, struggled to design and deliver online courses beyond their capacity and expertise. I could only imagine what the students saw on their end as faculty did their best to do all they could to support students.

Evan, a new faculty member, felt that the absence of master courses diverted his time from teaching. Although he appreciated having the means to create master courses within the EDD model, he was surprised that the department did not already have master courses. As an adjunct in other colleges, programs gave him ready-made online courses to teach. He ordinarily would not have to create one himself. Evan said, “I inherited a structured shell, and then I just added my pieces to it.” These had the same look and feel and navigation design as other courses in the department. He said that he had the support of a curriculum designer when he wanted changes, “They were the how part. I would give them the what part.” He did not know how the original master courses at the other colleges were built and speculated that perhaps a full-time instructor or the instructional designer might have created them. In any event, he made clear that he does not see his role as designing the course:

I don't feel that I'm an instructional designer. For me, it's an 80/20 rule. Eighty percent should be built by ... an instructional designer and then the 20 percent is the instructor coming in and going, "All right, all the Connect<sup>4</sup> is lined up, and now I have to put in what I think is going to be my relevant teaching."

Evan was frustrated and exhausted by spending his first year of teaching at the college redesigning courses to be consistent with other program courses. He acknowledged that they should be consistent but assumed that there would already be master courses for him to use as he did in his prior experiences, "I'm so looking forward to the time where they're all the same, and I'm focused on instruction." He stated that while he spent much of his time "editing" courses, he saw how helpful the EDD course prototype and templates were to ensure consistency of good course design. He noted that such an approach would be beneficial to students. He saw this firsthand in the fall of 2020, during the COVID-19 pandemic, when he had several students take all three of the four classes he was assigned. One of the courses was already an EDD model course, but the others were not. He put himself in students' shoes and imagined how much time they would lose figuring out the different course structures, expectations, grading policies, and so on. As an instructor of the "inherited" courses, he was trying to figure these out himself. He understood how frustrated students would also become. He then proceeded to redesign the courses using the EDD-CDP with the help of an instructional designer.

Evan likely did not know how much more efficient the course development processes of the EDD were relative to others going through a design or redesign of their own during the pandemic. Elle, the instructional designer who helped Evan, said:

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<sup>4</sup> Connect is digital learning product by the education publisher McGraw-Hill. It can be integrated as a third-party digital learning application alongside a school's learning management system such as Canvas or Blackboard.

The development of those EDD courses went so much easier and faster and more efficiently, I think for me and for the instructors (Anna and Evan), because we had a set of guidelines and some framework already laid down, already in place that we could bounce ideas off of. We weren't spending a lot of time discussing things that were already in place. We had a framework of a course that we could look at, a framework of modules that we could look at, and work off of that. It wasn't like our hands were tied, and we couldn't do or change [some things]. It was really more “let's take a look at this, tell me how this fits in with your idea of delivery of this course or your idea of how it's going to match up with your outcomes.” It was those kinds of conversations that went so much easier and so much more efficiently with the faculty that had those EDD models already in place or were familiar with them.

When we had to make the transition and help faculty make a transition from teaching face to face classes, or at least classes that met part of the time to fully online, those faculty that I worked with EDD models, it literally was a pleasure to work with them, because ... as an individual I knew what the program was looking for. I knew the framework of the course, and it was much easier to help those faculty on board, build their ideas into the course, stop and map out the course, or map out a module, and be able to take a look at very quickly, “how well does this align with outcomes, how well does this align with what you're going to do with the rest of the course.” It was just much easier.

Elle's recounting of the difference between supporting faculty within the EDD model and supporting faculty outside of it showed how the EDD model changes faculty behaviors. By agreeing to apply specific processes and tools (e.g., EDD-CDP, EDD course prototype, EDD

templates, and 80/20 principle), departmental faculty had supports in place to efficiently build “well-designed courses.” For example, among the faculty that Elle helped shift to online learning for the fall of 2020, Anna and Evan were the first to complete their training and course design. In contrast, Elle shared that faculty who did not have the EDD framework or did not adopt the common modules designed after the EDD course prototype struggled to design and deliver their course throughout the term. I noted how overwhelming it must have been for adjunct faculty, who were disconnected from institutional supports during normal operations, to find themselves suddenly teaching online during the pandemic. I wondered how supported they might have felt if there were provided well-designed courses at the start of their assignments.

All the adjunct faculty in the interviews remarked that having ready master courses is helpful when the department asks them to teach, often just a couple of weeks before the term starts. They say that as adjuncts, they have “multiple college commitments,” “often work full-time,” and “don’t have time to build a course.” Evan recalled that having master courses when he was an adjunct allowed him to “focus on actually being an instructor,” to not worry about developing a course, and to “focus on being an effective instructor.” He said that master courses helped help him be in “instructional mode” versus in “development mode.”

Like their instructors, students value their time. They used the word “time” in nearly 60 instances during the two-hour interview. Setting aside the effects of the COVID pandemic for course options, students in the focus group spoke of why they would typically choose online courses. They said that online learning gives them the “flexibility” to “self-pace” and manage their work, life, and school commitments. Nestor, a first-year student, said that online courses make it “easier for me to be flexible with my time and not commit to every day at the same

time.” Roberto said that he too likes the ability to choose when and where to study. He wanted to “work ahead of time, “If I can, that way, I’m not surprised by anything.”

Without exception, students in the interview emphatically stated that they are motivated to learn. In addition, they said that they are internally motivated to succeed in their classes and need course structure to manage their busy lives. Nate said:

What affects my motivation is that I want to do well. I don't want to waste my time, effort, resources, etc., to fail a class and have to take it again. This motivates me in person, but also online. I get motivation when I can see what is due throughout the week and I am motivated to do it as soon as possible so I can focus on other aspects of my life outside of school.

Laena and other students in the focus group similarly stated that they are “motivated to learn” and want to be in their classes. What affected their motivation were lack of clarity in course expectations and assignments, a lot of time “figuring out the professor,” and delayed feedback from their instructors. All these amounted to a “not smooth” course in their mind, which affected their ability to manage their time to learn, work, and meet life responsibilities. Nestor, a first-year student, noticed that professors could be quite different in their expectations, grading, scheduling, etc. He decided to take the time to understand the structure of each class by taking out the syllabus and outlining assignments, estimating how much each activity might take, figuring out the grading policy, and so on. He did this to have a “strong foundation in the long run” and to plan.

In contrast, when students spoke of courses designed in the EDD model, they appreciated transparency, predictability, and developmental approach in their structure. They especially like

that it provided predictable routines within a schedule with estimated time on tasks to complete.

Larry said:

The gradient in which complexity started to increase through the sections, but at a rate that was very digestible and adding the times ... you have your weekly schedule, and this is the routine. The routine is just brilliant! But then also adding the expected amount of time that should be used on those is great benchmarking because...we're working online. We don't see our neighbors, our other classmates all the time and for those of us who are like, "Am my spending too much time on this or not enough time on this?" Having that ability to kind of benchmark is very helpful for ... someone like me. It's also helpful for scheduling as well.

All the students appreciated that the course anticipated their need to know what was expected of them. They equated the presence of well-structured courses as recognizing their busy lives and saving them time.

#### ***Theme 5: Consistency Promotes Fairness, Autonomy, and Learning***

For educators, the terms structure, consistency, predictability, and transparency are interwoven with the idea of accessibility, fairness, equity, and removing barriers to student success. For at least one of the educators, it also meant creating learning spaces that projected care and a sense of belonging. For all, these ideas manifested in the structure of the EDD model course, the consistencies across EDD courses, and the 80/20 principle. Among the terms and phrases they used were "consistent course structure," "clear expectations," "consistent support," "fairness," "course fidelity" "care," "enough tie-ins to the material," "common experiences" across courses to "hit the ground running" and to help students "manage their time," "create autonomy," and "get to the learning faster."

**Structural Consistency as Fairness.** The educators perceived structural consistency within and across courses as addressing significant barriers to learning as students moved along the program. They cited a lack of course structure, clear expectations, and instructional supports as learning impediments. They believed that EDD model courses addressed these and would continue to do so as faculty collaboratively reviewed course for further improvements. Neil, a part-time instructor, said:

At a minimum we can take the logistical hurdles out of the way ... pieces of understanding how assignments work and all those things and move them out of the way, so that getting to the learning isn't the challenge. I think that gets at the heart of the equity piece.

Anna, a new part-time instructor, equated structural consistency across courses as tied to the idea of accessibility *to* learning. She thought that the EDD master courses would help students get used to the course design and make navigating courses across all different instructors easier.

It doesn't matter which instructor they get as a part of this program. They're going to have that structure and it's going to make it really easy to integrate. In between each class, they don't have to learn how to operate the system every single time because they've had it. It's part of the structure of the course.

Other faculty associated structural consistency with fairness in learning. Neil said, "From the student perspective, they know [the course] is going to be fair. Someone ... who takes it from instructor A is getting the same information and has the same expectations as instructor B."

Evan, shared a similar view during his interview:

Students aren't having to differentiate between “this professor does it this way, this professor does it that way, and another professor has a third way.” The equity piece in terms of structure and organization allows all students that same sense of fairness.

Intuitively the instructors understood that lack of a consistent structure and lack of clarity of expectations are frustrating or unfair to students. They recalled their own stories about having brilliant professors whose courses lacked organization or where they felt like they taught themselves. They talked about having classes when instructions were unclear and where they held back asking questions in fear of the professor or appearing unintelligent. In sharing their stories, they projected an empathetic camaraderie with students. They shared the idea that student frustrations were not just structural or navigational but also deeply instructional. Having seen and taught one or more of the EDD courses helped them see this for themselves. Neil said:

There always could have been individuals in the prior courses who were left behind just because they're encountering the materials by themselves when they're doing the work. I think what we've done is we've given enough tie-ins to the material. We've given enough explanations about why it's important ... specifics about what the assignment requires, to create autonomy for more students.

When asked what would be lost if the department no longer built EDD courses, Neil said that it would be the ability to “create a predictable environment for students as they move through a program.” He added, “If we didn't develop other [EDD] courses down the road, the more variation ... students have to encounter. ... ‘Every time I get into a new faculty's course, it's tabula rasa. Start from scratch!’” He emphasized that this would consume students' time as they spent time figuring out a course instead of jumping right into learning course materials.

**Variance as Unpredictability.** Before the focus group, students completed a survey designed to generate a pool of questions for the interview. In the survey was a prompt to complete a statement intended to probe their thoughts about differences across courses. They were to fill in the blank, “Great variance in structure, organization, and course policies across classes in a program is \_\_\_\_.” I then asked questions during the focus group interview to probe their choice of words or terms. One student wrote, “obstacle” because she “really benefits from consistency, structure, routines” to plan her life. The absence of predictability would “throw” her off, where she would need to “regather and refocus.” Another student, Roberto, wrote, “inefficient” because he would “spend more time finding the things” he needed to complete his assignments and do homework. He said, “If that’s not all well laid out, then you’re just wasting time that could be spent learning the material.” Yet another student, Larry, shared that it would be “exhausting” waiting around for the course to get started. He said of non-structured or not-well-designed courses, “It seems like the first week, we do nothing.” Nancy offered a nuanced perspective. She wrote, “beneficial to an extent.” She explained during the session:

It’s like the idea of getting comfortable with uncomfortable and unplanned because you know things are unplanned. But that's not why you're taking that course...the benefits of that doesn't necessarily outweigh hinder[ing] the actual learning of your material and [they] take up time ... it might affect what you learn in that class and your success in the class. So, it's not really worth [it] in my opinion. I mean it depends. It's not really worth the benefit of getting comfortable with uncomfortable. It isn't necessarily worth the chance of you not succeeding in a class or learning in a class, because your goal is to [succeed in class].

Ratings and discussion of another survey statement, “All sections of the same course should be consistent in content and quality,” showed the degree to which students were aware of how much courses could vary. Most students take a course only once. Tom and Nate expected that all the classes at the college would be of quality. Given this, they thought that having options to take different professors and different content would be something they wanted. Nancy, however, wondered if having “very different content” was valuable to students. To illustrate, she shared a recent experience where she was part of a team of six students. In their work together, she learned that while they were in different sections of the same course, the classes were “very different” from each other:

Half of us took one technical writing class, and the other half took another, and the courses are completely different. Not even close to the same. One class was way more structured. The other class was not very structured. ... When it's that different ... I question if we're really learning the same. ... I kind of don't necessarily like it. ... I wouldn't know there's a big difference if ... our team hadn't split up. ... If you don't know that somebody else's learning something completely different then it might not bother you, but I'm kind of like, “Oh well, I might be learning differently if I took that class instead.” It might be more valuable.

Ellon offered yet another perspective. As a tutor in the college, he is expected to help students with any class he took and passed. He described a tutorial situation involving a math course, where he “literally scratched” his head while helping a student. The course was the same by name, number, description, and learning outcomes as the one he had taken. When a student came to him for help, the student presented him with content Ellon had never seen before. It made him laugh, he said. Another student, Estee, had a much more dramatic response:

I just kind of started taking actual college courses, and I'm very surprised to hear that that's actually a thing. I just wanted to say that I'm a little uneasy now about moving forward because my expectation has always been every single class gets the same result, but the way might be different, but hearing that ... is actually making me a little uneasy.

Listening to the students made me wonder to what degree students were aware that course sections could be very different. I could understand Ellon's humorous reaction. It was a momentary brow-raising event. While it presented him a challenge, I was confident that it was one he overcame. Ellon is an "A" student and knows how to navigate college resources. I quietly wondered, though, if students in other math sections might have had it easier or more challenging than the "lucky" or "unlucky" soul who sought Ello's help at the tutoring center that day. Given the significant variance in course completion rates in math courses by section, it seemed like a roll of the dice. As the numbers will soon show in the upcoming pages, for students of color, that roll is weighted against their favor. I did worry about Estee's reaction. She seemed unsure about her way forward. As the focus group interview concluded, I told Estee that I would follow up with her and make sure she was on the right path.

**Sense of Familiarity, Belonging.** Neil, who teaches military veterans, said that common structures across courses create familiarity and get students on their way to learning:

One thing that students learn that gets them started faster in a course is how much this course has in common with previous courses that they've encountered. ... And then the next time they take a course they're probably 75 percent better off because they know exactly where things are. It's like walking into your house as opposed to somebody else's house. You know where everything is. You're able to hit the ground running, get started

in the course. You're not having to deal with the logistical barriers, if nothing else, that are presented by learning entirely new environment. I think that's a big positive.

Students also seem to appreciate the structure of the EDD model courses and its consistent use across the program. For example, Tom, a second-year student, who took one EDD model course thus far, asked if other courses were similarly designed like IBC-101. Nate, a fourth-year student who took several EDD model courses, answered:

If you're a fan of the layout for [IBC-101], then you're in for a treat. Because there are a handful of them so far that have been structured like it. ... Once you see it, it's like seeing an old friend again. You're like, "Oh *this*, like I know *this*. ... I know how to succeed in *this* environment!"

Elle, the instructional designer in the study, reflected on the nearly 300 courses she helped build with faculty over the years. Given her advisory role, she is non-directive in her approach and lets the faculty lead the course development. She nevertheless helps faculty appreciate the importance of course design like that present in EDD model courses by giving them an analogy. She said:

As a student, my first thought is this person really cares about me being here, "They've taken a lot of time to think about how this course works, how it works for me." It's like inviting people to dinner. If you have a picnic table and a bunch of chairs around the picnic table, that's one way of feeling. You have a certain feeling, but if you walk in the room and there's beautiful glassware on the table and it's all laid out. There's flowers and candles. Someone has obviously taken time to make that a super important experience. I think that's what design is all about. I also think that it's inclusion and equity. It's making

students feel like, “There's a place for you here and I've prepared very carefully that place for you.”

Upon listening to Elle, I could not help but appreciate how often she helped me think of design as intentional, as thoughtful, as purposefully planned to achieve a goal. I also wondered how common instructional designers were across the colleges in the system.

**Reducing Variance, Increasing Completion.** At the end of the interview sessions or in follow-up sessions, I shared the student outcomes for IBC-101, the first EDD model course. The grades and course completion rates were generated from the college’s Tableau dashboards. They were presented in the form that faculty would access themselves as part of their regular work duties to assess student outcomes. I added demarcation points to differentiate pre-EDD and EDD model years. During the session, I asked educators to verbalize what they saw and what conclusions they could make. This exercise served two purposes: (a) to listen for language faculty used to orient themselves to the data and (b) to learn what explanations or implications they might attribute to the outcomes. The four responses below were representatives of the various thought patterns revealed by the faculty thinking out loud.

Neil, a part-time faculty, oriented his description to how the course related to other courses and its implications for programmatic fidelity:

This sort of soundness of the longitudinal comparison is what’s maintained between these courses having such similarities with one another. ... Students are going to come out with a fairly consistent knowledge. ... That has great downstream effects. ... Every subsequent course in the program is going to be able to rely on that foundation of knowledge.

Leo, a full-time faculty, saw changes in course outcomes by student demographics. He associated improvements to course transparency with creating equitable conditions:

The depth from a demographic perspective, it was really clear to see that students that traditionally didn't finish ... were completing at a higher rate. ... Across the board, it seemed to make it easier and more equitable even playing field ... that's exciting to see.

Anna reflected a great deal on the outcomes. She said that what she saw appeared to affirm that the EDD model's focus on consistency reduced the equity gaps. When asked to say more about how "consistency" would explain the reduction in variance in grades and completion rates by demographic group, she began to describe a familiar illustration used in equity training workshops. The image showed three children with different characteristics in size, height, race, and gender. The children stood behind a solid wooden fence, trying to watch a baseball game. Only one of the children could see over the fence. Anna juxtaposed this with a second example where the children stood on different heights of boxes so that all could see the game. Then, she stopped. "That's not exactly the idea of consistency is it?" As internal processor, she thought quietly for a bit, then said, "I'm stumped. I don't know." She thought some more. After a few minutes, she said that the reduction in disparities in the outcome gaps was likely because of the EDD model's emphasis on clear expectations, clear guidelines to "get rid of the unknowns," and step-by-step instructions on how to complete assignments. She said that the model demystifies, clarifies, and "really lays out what is expected of students."

Elle, the instructional designer, looked closely at the data and noted several changes in student outcomes before and during the EDD model years:

That's what we predicted with the EDD model and there it is! ... Student completion rates are fine. We want students to complete courses, but in addition to completing the

course you wanted to reach a high level of achievement. There's a lot to be said for faculty who help students complete courses, and we know there's a lot of ways to do that, but to dig this deep and be able to be successful and helping students achieve at a higher level, that takes systemic effort.

When asked what it would take for faculty outside of the department to adopt the EDD model, Neil said, “Show them the graphs!” He recalled how the college engaged the faculty in conversation about the importance of equity in college-wide meetings but has not moved to the “now what” phase. He said that faculty are ready and asking, “How do we operationalize this? How do we take this take concrete steps that are necessary to modify courses so that equity gaps are starting to be minimized?” He added that a great selling point of the EDD model is that it has already hit the ground running, tested with courses, and found to close equity gaps. It is packaged and ready to go. All faculty have to do is “synthesize and then come up with a modification within the course...it's not even that complicated,” he said.

### **EDD Course Outcomes**

The third research question asks, “What are the student outcomes (e.g., course grades, course completion rates) of the first EDD model course, and how do these compare to other like courses?” To answer this inquiry, I used the college’s Tableau dashboards to generate outcomes of the first EDD model course, a college-level introductory business course (IBC-101), and 14 online introductory 101 courses from the arts and humanities, social sciences, health and technology, and natural science divisions. Again, I use a five-year academic timescale for the comparative study. As per the research study design, the 14 courses do not serve as a control group and are included to help determine larger college patterns or alternative reasons for IBC-101 outcomes during the EDD model pilot.

**IBC-101.** Different instructors across various modalities teach sections of IBC-101 throughout an academic year. It has the most enrollments in the department. IBC-101 is also among the courses with consistently high enrollments in the college. Students typically take this course to explore their interests in business and/or to satisfy social science transfer credits to four-year universities. This course is required in at least two associate degrees at the college. It is a prerequisite for admission into the new baccalaureate program discussed in this dissertation.

I became aware of the significance of IBC-101 within the department and across the college early in my tenure process and why I asked that it be part of my course load. I wanted to make a difference in as many student lives as possible. I used it as a prototype for the EDD-ToC. As mentioned in chapter two, I continued developing and evolving the EDD model during my doctoral studies. I taught IBC-101 as blended and online sections. The balance of my course load was made up of lower- (100 and 200) and upper- (300 and 400) level courses. Part-time instructors taught other IBC sections as F2F, blended, and online classes.

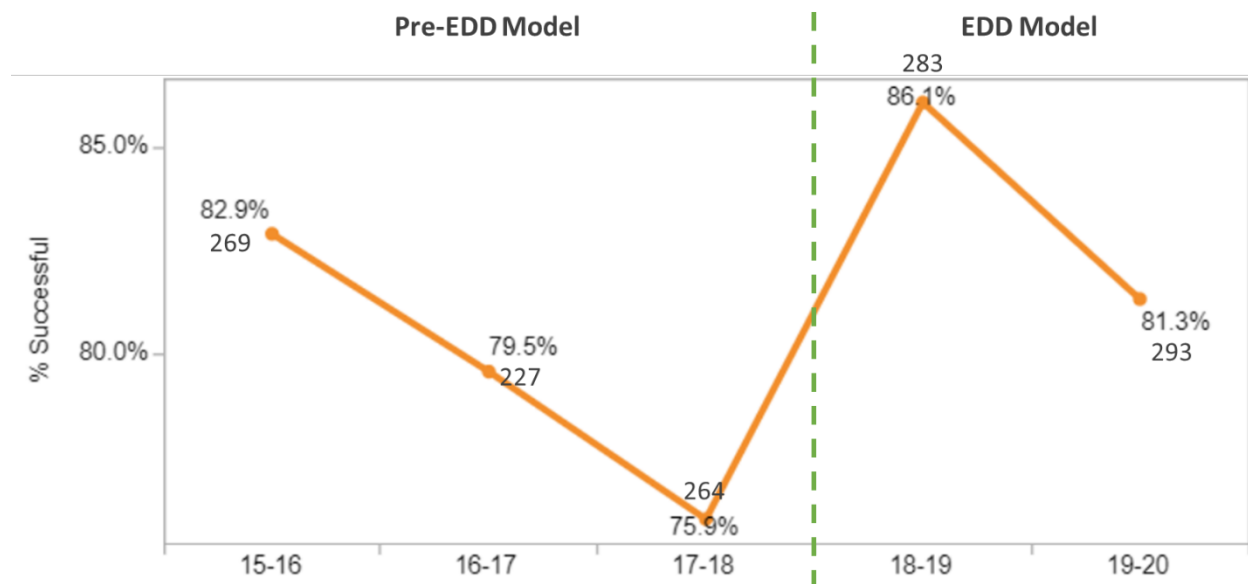
Although the pilot of the EDD model at the program level did not officially start until summer of 2019, delivery of IBC-101 as an EDD model course began in the summer of 2018. In 2019, the college's instructional design and technology team used IBC-101 structure to create the EDD model course templates, which used cascading stylesheets (CSS). Aside from transferring its content into a templated course shell, IBC-101's course design remained largely the same from academic years 2018-2019 and 2019-2020. Therefore, the case study includes course outcomes of IBC-101 (also referred to as EDDm-A in this study), beginning summer 2018 and ending in winter 2020 when the data availability ends. This course became the course prototype, serving as both framework and blueprint for developing benchmarked EDD model courses. The EDD model templates are skeletal. They have no content.

### Course Completion

**Course Completion Rates.** The five academic-year time scale of completion rates at 2.0 passing grade (4.0 grade scale) for IBC-101 began with a high of 82.9 percent in 2015-2016 followed by completion rate decreases in the following two academic years: 79.5 percent in 2016-2017, a 4.1 percent change decrease; and 75.9 percent in 2017-2018, a 4.5 percent change decrease from their prior years, respectively. In the next academic year, 2018-2019, the first year IBC-101 was offered as an EDD model course, the completion rate increased to 86.1 percent or a 13.4 percent change increase from the prior academic year. In the fifth academic year, 2019-2020, IBC-101 completion rate decreased to 81.3 percent or a 5.5 percent change decrease from the prior academic year. See Figure 24 for a graphical illustration of the course completion rates of IBC-101 before and during its EDD model-based redesign.

**Figure 24**

*IBC-101 Completion Rates at 2.0 Grade or Equivalent, 100% Online (2015-2020)*



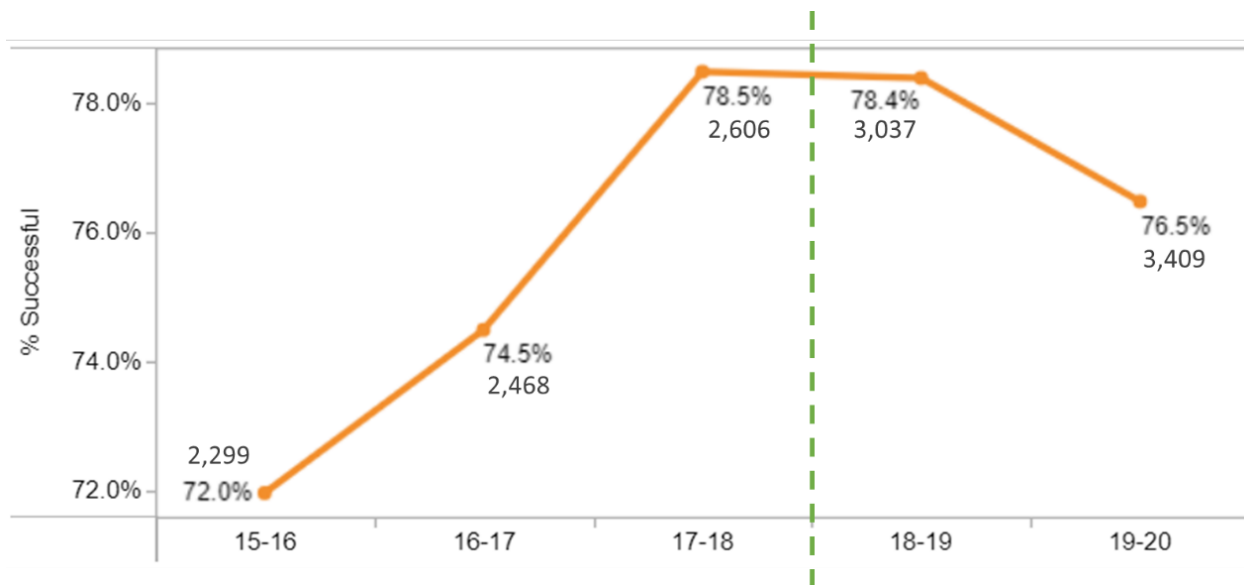
*Note:* Data shows the total # of successful course completions. It includes duplicate students.

2019-2020 data are for summer, fall, and winter terms only.

To analyze IBC-101 outcomes relative to other online introductory courses, I compared its outcomes to all other introductory online courses with course catalog designations of “101.” Completion rates for this comparable group bore little resemblance to outcomes in IBC-101 during the first three academic years in this study. Whereas IBC-101 online course completion rates trended downward during the three pre-EDD model years, all other introductory 101 online course completion rates trended upward during the same period, though with generally lower completion rates relative to IBC-101. Both experienced completion rate highs in 2018-2019, 86.1 percent for IBC-101 and 78.4 percent (virtually the same as during 2017-2018) for other introductory 1010 courses, followed by a decrease in the 2019-2020 academic year. No discernable patterns can be discerned from the comparison beyond their differences. See Figure 25 for a graphical representation of outcomes for other introductory courses.

### Figure 25

*Introductory 101 (Except IBC-101) Completion Rates at 2.0 Grade or Equivalent, 100% Online (2015-2020)*



*Note:* Data shows the total # of successful course completions. It includes duplicate students.

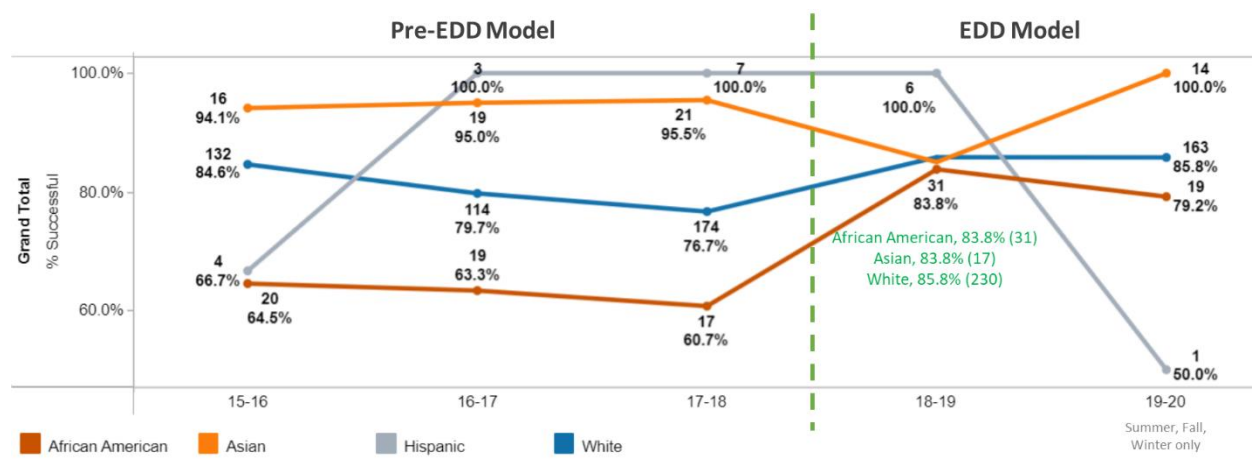
2019-2020 data are for summer, fall, and winter terms only.

**Course Completion Rates by Race/Ethnicity.** Disaggregated IBC-101 course outcomes showed significant disparities between student groups by race and ethnicity during the pre-EDD model academic years. For example, 84.6 percent of White students passed the course at 2.0 grade (4.0 scale) compared to 64.5 percent of African American students, or a 20.1 percentage-point difference in the 2015-2016 academic year. Double-digit completion gaps between the two student groups remained during the next two subsequent pre-EDD model years, 16.4 percent and 16 percent, respectively. However, the gap narrowed considerably in 2018-2019, the first academic year of the IBC-101 as an EDD model course: 85.8 percent of White students, 83.8 percent of African American students, and 83.8 percent of Asian students completed the course. Notably, African American students increased completion rates by 23.1 percentage points or a 38 percent change increase from 2017-2018 to 2018-2019 academic years. Completion rates for White students increased from 76.7 percent (2017-2018) to 85.8 percent (2018-2019), or an 11.6 percent change increase after a steady decline during the pre-EDD model years and maintained this rate in 2019-2020. Completion rates for Asian students decreased, from 95.5 percent (2017-2018) to 83.8 percent (2018-2019), or a 12.3 percentage change, but bounced to 100 percent completion in 2019-2020.

Though N sizes for Hispanic students were less than 10, they remain in the analysis as their outcomes are tracked and measured by the college for completion goals. In any event, Hispanic completion rates began with 66.7 percent in 2015-2016, followed by 100 percent completion rates for the next three years, 2016 to 2018 academic years, or a 50 percent change increase between the first year and the subsequent years. Hispanic completion rate was 50 percent in 2019-2020 or a 50 percent change decrease from 2019-2020. See Figure 26 for a graphical illustration of disparities among student groups.

**Figure 26**

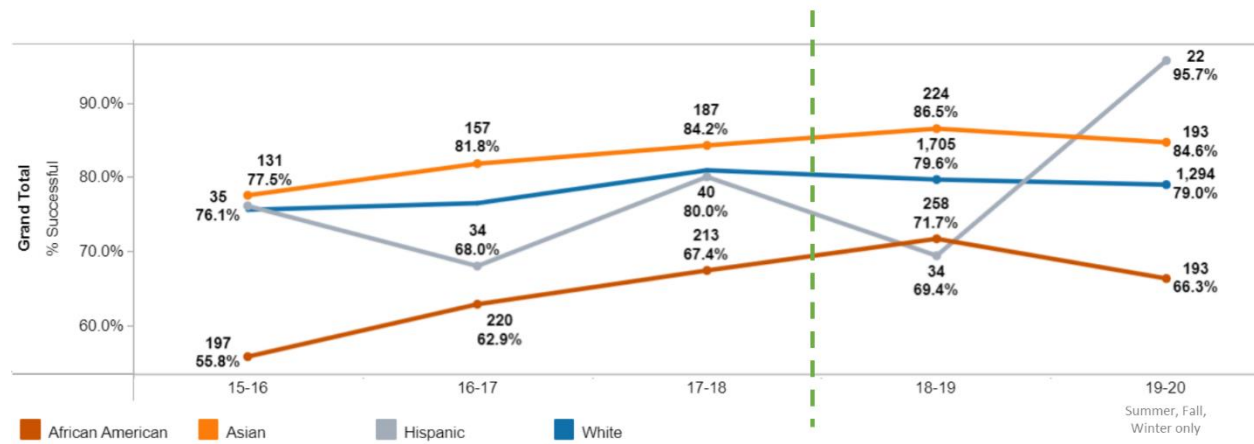
*IBC-101 Completion Rate at 2.0 Grade or Equivalent by Ethnicity/Race, 100% Online (2015-2020)*



Although gaps were present in 2019-2020, they were less than in pre-EDD model years. For example, in 2017-2018, the completion rate difference between White (76.7 percent) and African American (60.7 percent) was 16 percentage points. That gap, however, decreased significantly by 2019-2020, where 85.8 percent of White students and 79.2 percent of African American students completed, for a difference of 6.6 percentage points. For comparison, although completion rates increased for all students except Hispanic students in other introductory 101 courses, outcome disparities among the student groups persisted. Notably, there was a gap increase between White and African American students from a 10.2 percentage point gap in 2018-2019 to a 12.7 percentage point difference in 2019-2020. In comparing the two data sets, the IBC-101 online courses had significantly narrower disparities during the EDD model years. See completion rates of all online 101-introductory courses in Figure 27.

**Figure 27**

*All Introductory 101 (Except IBC-101) Completion Rates at 2.0 Grade or Equivalent by Ethnicity/Race, 100% Online (2015-2020)*

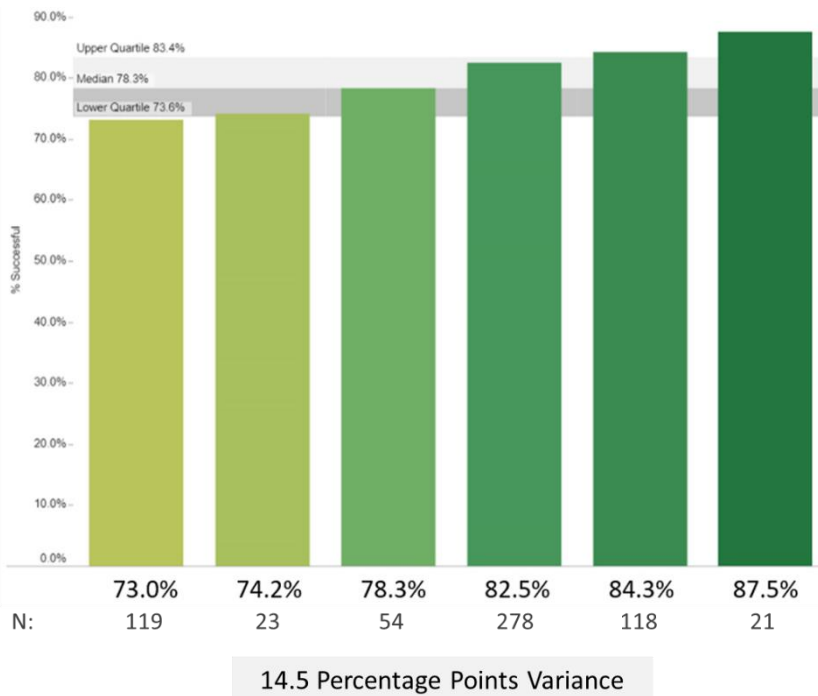


**Course Completion Rates by Section Distribution.** Introductory courses have multiple sections taught by different instructors throughout the year. IBC-101 is no different. During the three academic years prior to the EDD model years, six instructors taught IBC-101. The successful completion rates at 2.0 grade (4.0 scale) of sections taught by each instructor varied from a low of 73 percent to a high of 87.5 percent or a variance of 14.5 percentage points among the instructors. Suppose it is assumed that, on average, 38 percent of online enrollments are students of color (see Table 4 in chapter 2) and that they register relatively evenly across the various sections. Then, it would be reasonable to deduce that disparities in completion rates by race and ethnicity can be explained in part by variance in completion rates across the course sections. See Figure 28 for a graphic representation of variance.

**Figure 28**

*IBC-101 Successful Course Completion Rates at 2.0 Grade by Section Distribution, 100%*

*Online, All Instructors, and During Pre-EDD Model Academic Years (2015-2016 to 2017-2018)*

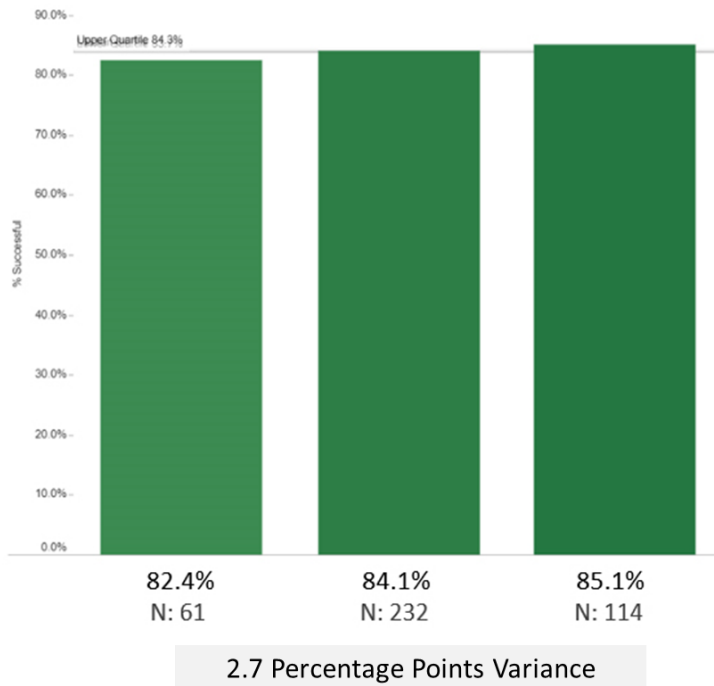


*Note:* Each bar represents one faculty member with an overall completion rate for section(s) they taught. Total N for this period is 407 students. Data includes duplicate students to reflect multiple attempts, among other course-taking behavior reasons.

In contrast, the variance among the three instructors who taught IBC-101 during the EDD model years as shown in Figure 29 was much less: from a low of 82.4 percent to a high of 85.1 percent or a variance of 2.7 percentage points. This likely explains the significant decrease in outcome gap disparities among student groups shown in previous graphs.

**Figure 29**

*IBC-101 Successful Course Completion Rates at 2.0 Grade by Section Distribution, 100% Online, All Instructors, and During EDD Model Academic Years (2018-2019 to 2019-2020)*



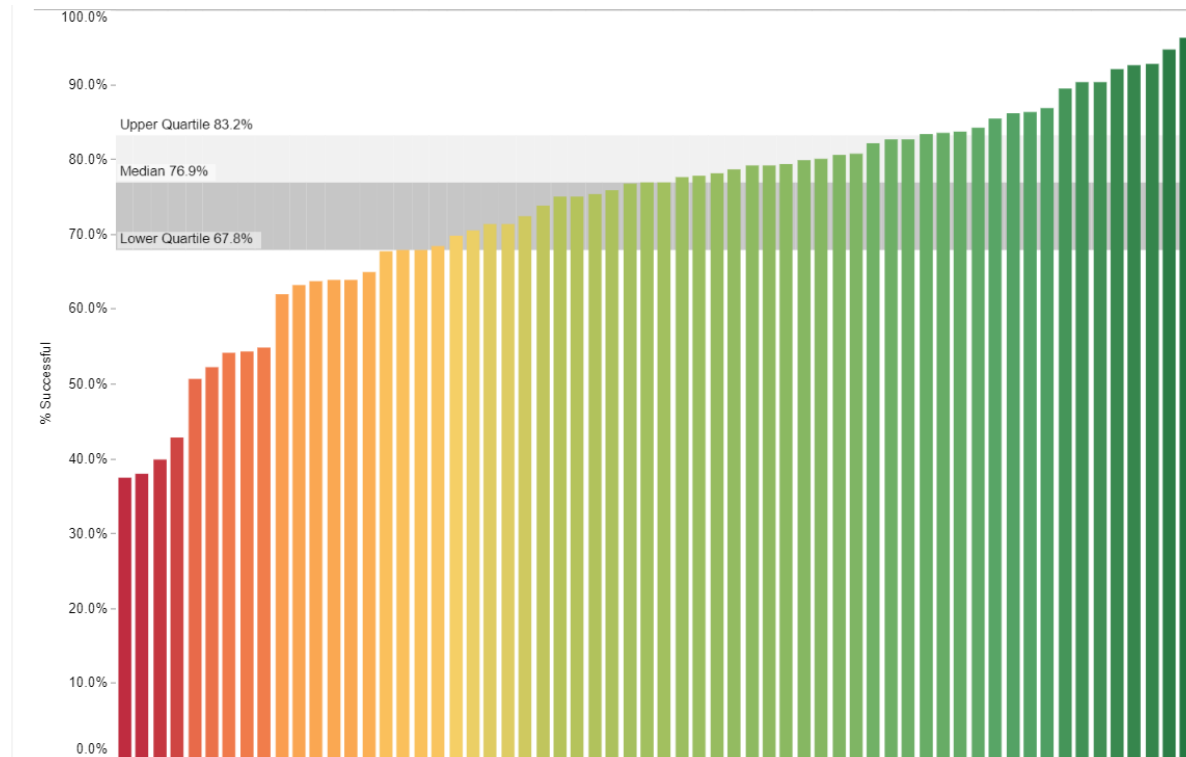
*Note:* Each bar represents one faculty member with an overall completion rate for section(s) they taught. Total N for this period is 407 students. Data includes duplicate students to reflect multiple attempts, among other course-taking behavior reasons.

For comparison, the successful course completion rates across sections of other online 101-introductory courses show significant variance before and during the EDD model years. For example, from 2015-2016 to 2017-2018, the completion variance among the sections ranged from a low of 37.5 percent to a high of 96.1 percent or a variance spread of 58.6 percentage points. During the academic years of 2018-2019 to 2019-2020, the range was from a low of 40 percent to a high of 100 percent, a 60 percentage-point variance spread. As with the former set of section distribution data, it can be reasonably deduced that the persistent gaps among the student

groups have their roots in the variance in completion rates across sections of the same course. See Figure 30 and Figure 31 for a graphical illustration of these variances.

### Figure 30

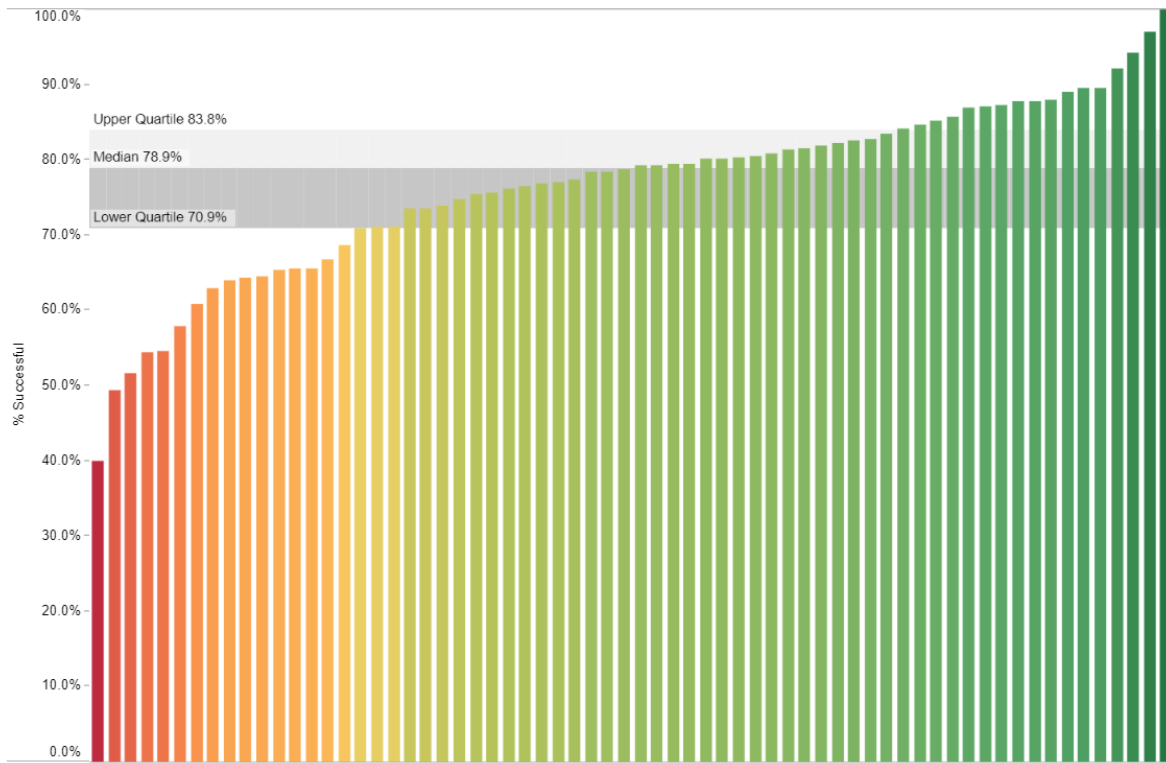
*All Introductory 101 (Except IBC-101) Successful Course Completion Rates at 2.0 Grade or Equivalent by Section Distribution, 100% Online (2015-2016 to 2017-2018)*



*Note:* Each bar represents one faculty member's overall completion rate for section(s) they taught. Total N for all sections: 7,347 – ranging from a low of six students with 37.5 percent completion rate to a high of 599 students with 80.7 percent completion rate. The lowest completion rate is 37.5 percent (three students), and the highest is 96.1 percent (148 students), for a variance spread of 58.6 percentage points. The data includes duplicate students.

**Figure 31**

*All Introductory 101 (Except IBC-101) Successful Course Completion Rates at 2.0 Grade by Section Distribution, 100% Online (2018-2019 to 2019-2020)*



*Note:* Each bar represents one faculty member's overall completion rate for section(s) they taught. Total N for all sections: 5,496 – ranging from a low of three students with 100 percent completion rate to a high of 283 students with 82.5 percent completion rate. The lowest completion rate is 40 percent (eight students), and the highest is 100 percent (three students), for a variance spread of 60 percentage points. The data includes duplicate students.

**Course Grades**

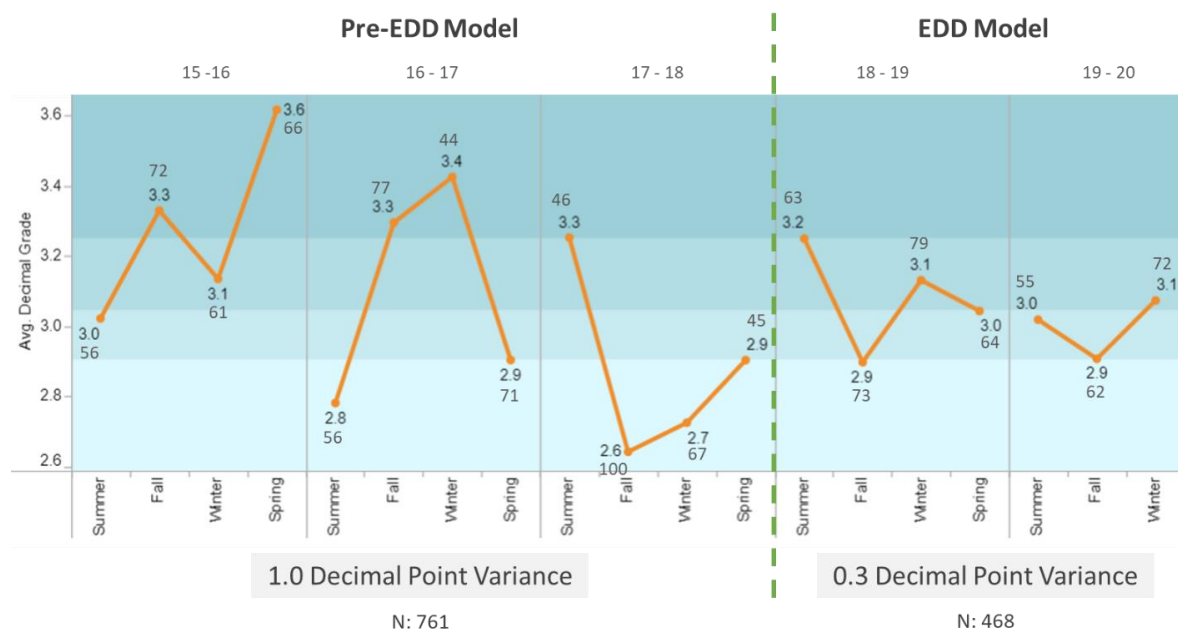
**Average Grades.** IBC-101 average decimal grades show significant changes between the pre-EDD model and the EDD-model years. Descriptive statistics in box plots graphically illustrate changes in variance within and across student groups during the two periods. I compare

these against other introductory courses that were not part of the EDD pilot for possible insights. As with previous graphs, only summer, fall, and winter data are included in this analysis.

**Grade Distribution by Average Decimal Grade.** IBC-101 average decimal (4.0 scale) grade distribution during the pre-EDD model years varied greatly as illustrated in Figure 32, with no discernable pattern across the quarters or years. For example, average summer grades would not be predictive of other average summer grades. Further demonstrations of unpredictability are averages that ranged from a low of 2.6 in fall of 2017-2018 to a high of 3.6 in spring of 2015-2016. A variance spread of 1.0 decimal grade spans across the 12 quarters of the pre-EDD model years. Six instructors taught during this time. The average decimal grade for IBC-101 sections during the EDD-model years ranged from 3.2 in summer of 2018-2019 to 3.1 in winter of 2019-2020, when the last data set is available, for a range of 0.3 decimal grade across the seven quarters. Three instructors taught the course during this period.

**Figure 32**

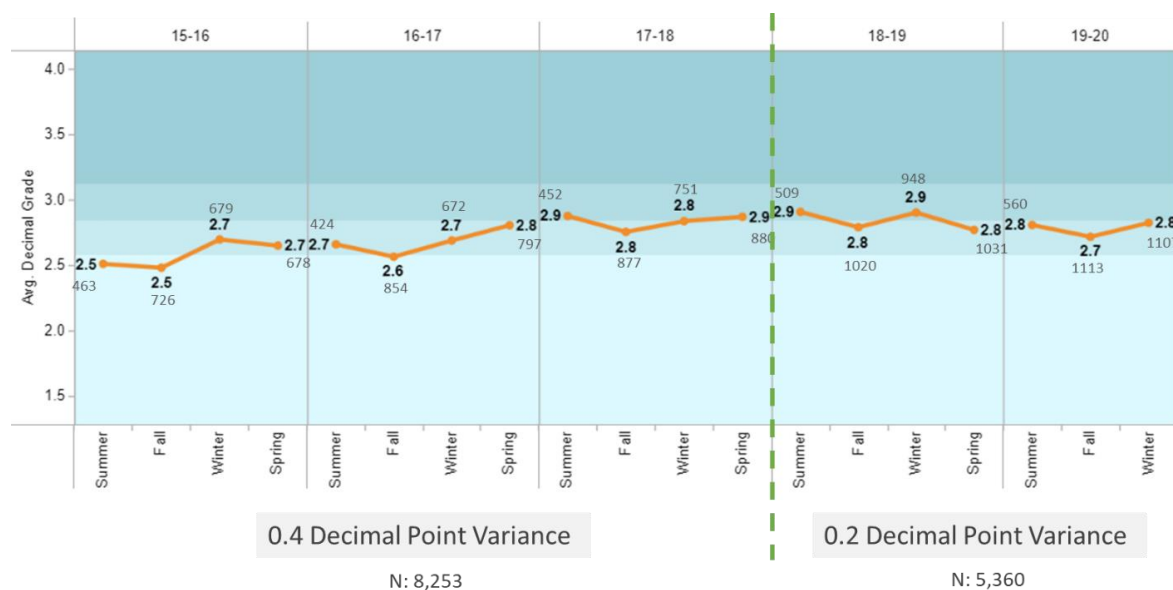
*IBC-101 Grade Distribution by Average Decimal Grade, Quarter, 100% Online (2015-2020)*



The average decimal grade patterns for other online 101-introductory courses were relatively stable during the same period, with a variance of 0.4 average decimal grade across the 12 quarters of 2015 to 2017 academic years; and a variance of 0.2 average decimal grade across the seven quarters of 2018 to 2019 academic years. Note the double-digit N sizes for each period and a slight trend toward higher average grades. The period starts with a low of 2.5 average decimal grade during the summer of 2015 followed by a pattern of gradual grade increases in the remaining quarters, culminating in a 2.8 average decimal grade in winter 2020. See Figure 33 for a graphic illustration of the relative stability and gradual increase of average decimal grades for all other introductory courses designated with a “101” in the college’s course catalog from 2015 to 2020.

**Figure 33**

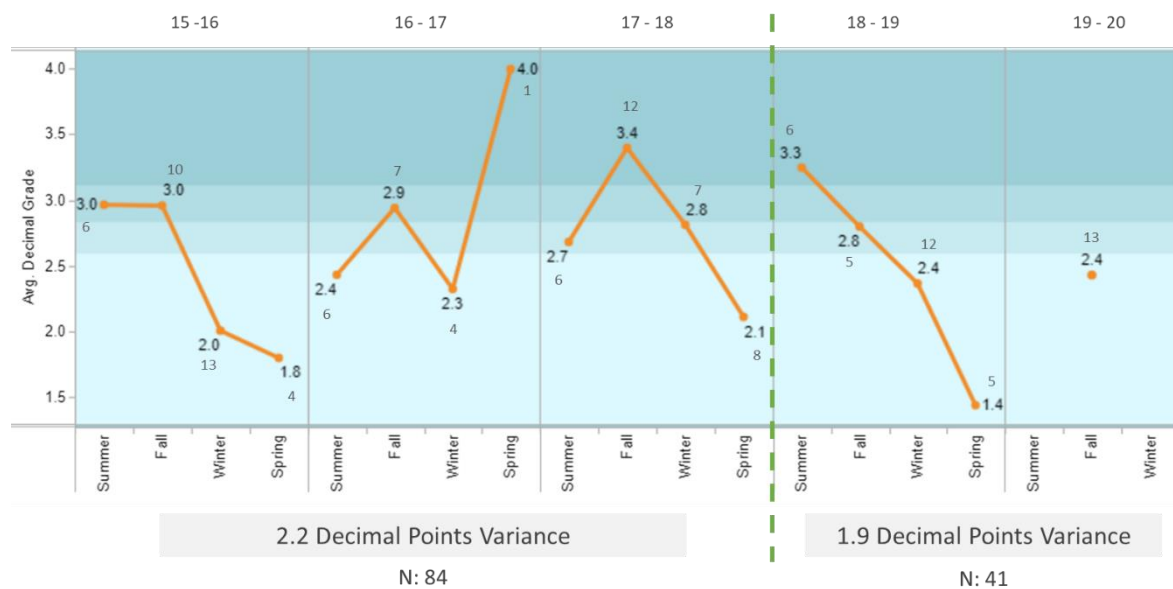
*All Introductory 101 (Except IBC-101) Grade Distribution by Average Decimal Grade, Quarter, and 100% Online (2015-2020)*



However, a closer look at specific online 101-introductory courses show some notable variances. See Figure 34 for average decimal grades for an online 101-introductory national science (NS) course where variances are evident: range of 2.2 average decimal grade during 2015 to 2017 academic years, and a range of 1.9 average decimal grade during the two academic years thereafter. One part-time instructor taught the course. Grade distribution of an Arts and Humanities (AH) introductory course in Figure 35 shows another range of variance in the AH course, where there are marked differences across the five academic years. Seven part-time instructors taught the course. Intuitively, one might expect that the variance of a course taught by one instructor would be less than those taught by more instructors. However, this was not the case. These graphs suggest that while overall averages can show stability, examining individual courses is more revealing.

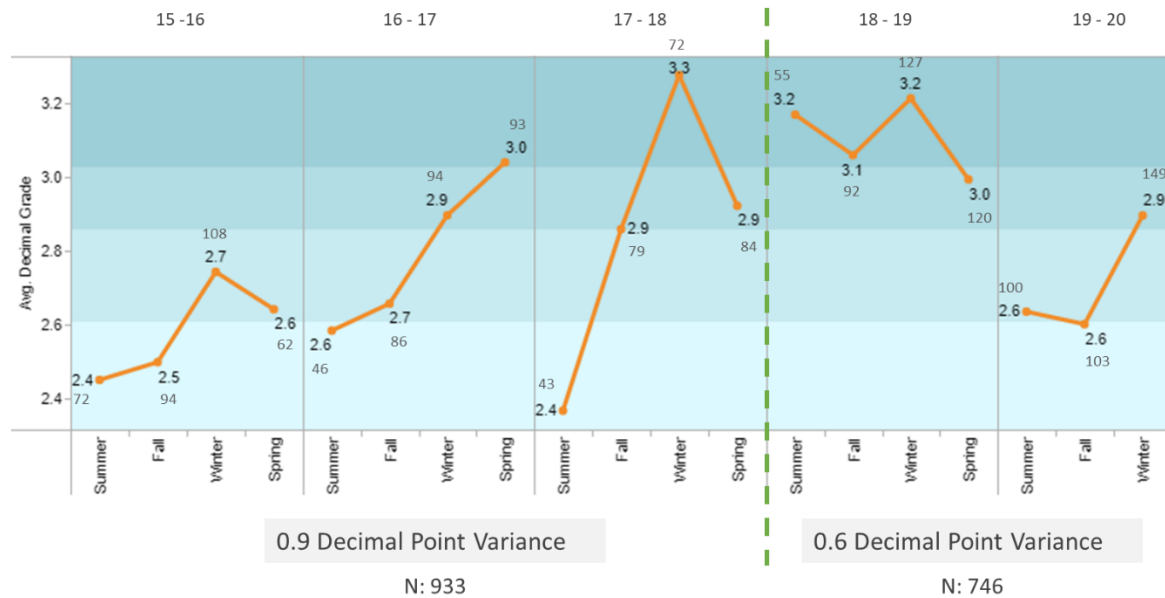
**Figure 34**

*Natural Science 101 Grade Distribution by Average Decimal Grade, Quarter, and 100% Online (2015-2020)*



**Figure 35**

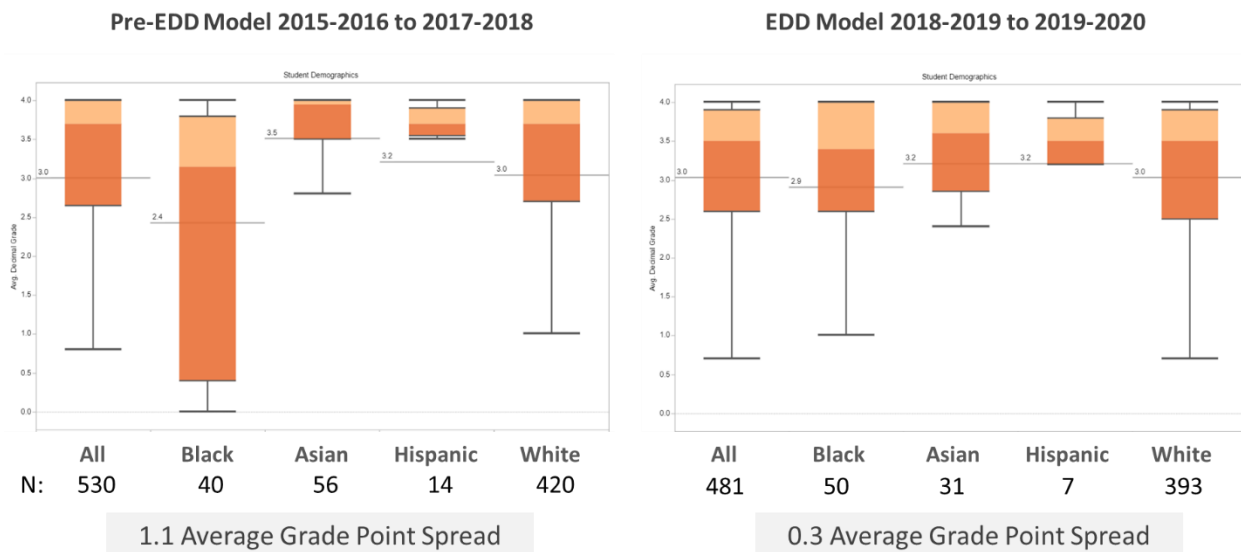
*Arts & Humanities 101 Grade Distribution by Average Decimal Grade, Quarter, and 100% Online (2015-2020)*



**Grade Distribution by Demographic Comparison.** While longitudinal examinations of grade distribution across quarters and years provide grade patterns over time, a look at grade distribution by demographic comparison across and within groups reveal nuanced outcomes. For example, during the three pre-EDD academic years, the average course grade in the IBC-101 course by student group ranged from 2.4 decimal grade (African Americans) to an average of 3.5 decimal grade (Asians), or a spread of 1.1 decimal grade. This variance significantly decreased during the EDD model years, where the average decimal grade ranged from 2.9 to 3.2, or a spread of 0.3 average grade point. This is a 72.7 percent change decrease in the average decimal grade spread between the pre-EDD model and EDD model years. See Figure 36 for a boxplot representation of IBC-101 course grade distribution by demographic comparison.

**Figure 36**

*IBC-101 Course Grade Distribution by Demographic Comparison Across and Within Student Groups, 100% Online, (2015-2020)*



Of particular interest are the minimum grades, excluding any outliers (bottom whisker). During the three pre-EDD model academic years, the minimum grades of the IBC-101 course by student group are 0.0 (African American), 2.8 grade (Asian), 3.5 (Hispanic), and 1.0 (White). In contrast, the EDD model year minimum grades were 1.0 (African America), a full decimal grade increase from the previous three academic years; 2.4 (Asian), a 14.3 percent change decrease; 3.2 (Hispanic), an 8.6 percent change decrease; and 0.7 (White), a 30 percent change decrease. It is instructive to view these minimum sets in relation to their respective medians and the degree to which the distribution of grades skews positively toward higher grades or negatively toward lower grades.

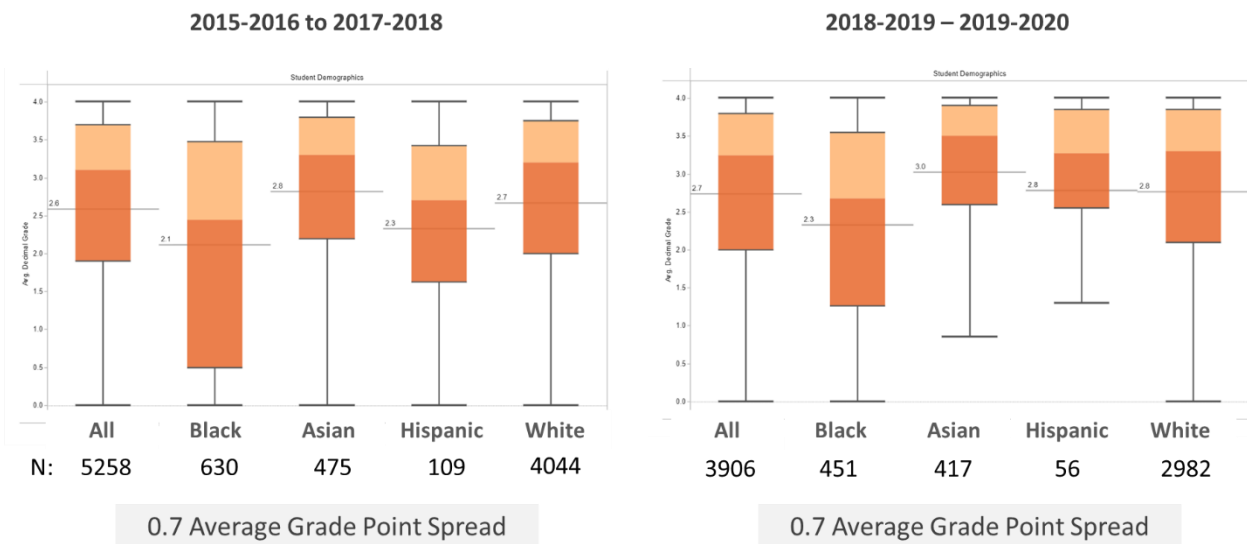
Grade distribution during the pre-EDD model years is more distributed (i.e., taller box plot) and have lower minimum for African American students (bottom whisker) than during the

EDD model years. Also, the distribution within student groups, except for Hispanic students (whose N size is less than 10), is negatively skewed toward lower grades (i.e., longer darker orange areas). Whereas, relative to previous years, the grade distribution during EDD model years is less negatively skewed, with similar median grades, differing by 0.2 grade: 3.5 (African American), 3.6 (Asian), 3.5 (Hispanic), and 3.5 (White) grades – suggesting a leveling of grades across the student groups. The data for other comparable courses tell a different story.

While the variance among the average grades by demographic comparison is the same between the two-year sets of other online 101-introductory courses, the distribution of grades within each group is greater (i.e., taller box plots relative to IBC-101 grade distribution), with more 0.0 grade minimums. Notably, the grade distribution for African American students is greater than other student groups across the years. See Figure 37 for grade distributions.

**Figure 37**

*All Introductory 101 (Except IBC-101) Course Grade Distribution by Demographic Comparison Across and Within Student Groups, 100% Online, (2015-2020)*



## Discussion of Findings

This study answers three research questions concerned with educator and student perceptions of and behaviors in the EDD model as leading indicators of systemic change. The findings showed five themes: (a) similar perceptions of aims and varied understanding of methods; (b) collegiality, accountability, and team learning; (c) system for teacher and student success; (d) time saving and stress-reducing methods; and (e) consistency, fairness, and autonomous learning. What follows is an analytical synthesis against Donella Meadow's Iceberg Model. Next is a discussion of each analytical theme against theoretical frames. Foremost among the frames is systems theory to explain insights revealed by the convergence of data. I integrate secondary frames and research findings where they add value. An overview of system theory and the EDD theory of change (ToC) hypothesis is below to aid discussion.

Systems theory posits that underlying the visible aspects of complex and dynamic systems are beliefs that manifest as structures (Meadows, 2008; Senge, 2006). These structures create patterns of behavior that show up as visible results. Structural patterns are in the form of feedback loops, which carry information as inputs and outputs into stocks in a system. Stocks are accumulated information and history in the system (Meadows, 2008). Examples of stocks are beliefs, course outcomes, and self-efficacy, which change over time. The EDD-ToC contends that underlying the structures of higher education is a belief: the design and delivery of classes should be in the sole domain of individual instructors. EDD-ToC further asserts that siloed approaches create significant variances in course quality, which result in missed opportunities to learn at high levels and significant discrepancies in course and credentialing outcomes across student groups. The EDD model, the operational element of the EDD-ToC, introduces new

collaboration-centric structures to create reliable quality courses at the program level to promote broad student success, especially in online learning where outcome disparities are greater.

### *Analytical Synthesis of Findings*

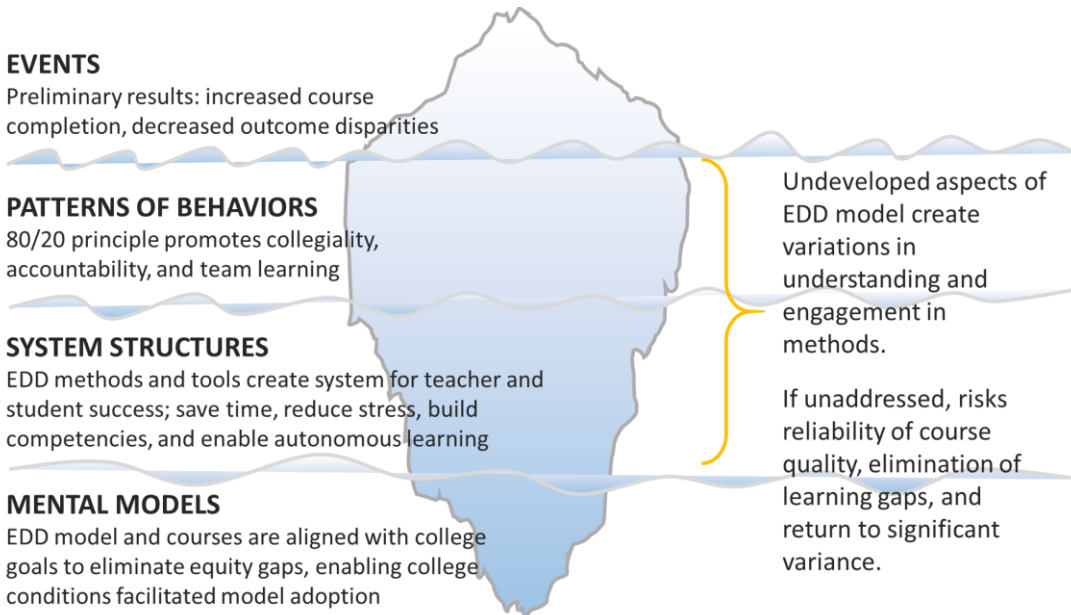
In 2015, the college promoted a new shared vision, equity, where the goal was broad student success. It advanced this new vision by investing in new structures (e.g., data collection and Guided Pathways) and expanding existing ones (e.g., professional development and non-academic student support services) to meet new goals: increased completion rates and equitable outcomes. The leadership called the faculty to apply evidence-based practices to meet college aims. Specific instructional approaches were left for the faculty to implement in recognition of the right to academic freedom. While there was a shared vision of equity and belief that systemic barriers needed to be dismantled, faculty nevertheless struggled to find concrete means to address the college's challenge. Individualized and college-wide efforts, however, proceeded. Completion rates increased, but disparate outcomes persisted; indeed, paradoxically worsened. A fundamental limiting condition to teaching and learning success remained.

The EDD model arose during the college's call for systemic change. A set of educators saw the model and college's goal as aligned and approved its pilot. EDD model methods (e.g., 80/20 principle and course development) coordinated program-level efforts to meet college goals. Educators regarded the EDD model as a system that sets them up to build well-designed courses and support learner autonomy. Faculty, especially adjuncts, said that the model saved time, reduced their stress, and allowed them to focus on teaching. Students described the EDD model courses as supporting their motivation to learn and meet class expectations. However, the educators' understanding of the model methods varied depending on their engagement in the model's processes, which have implications for scalability. Regardless of their perceptions of

collaboration and course building specifics, they attributed consistency, collegiality, accountability, and team learning to the 80/20 principle. See Figure 38 for a graphical illustration of this synthesis against the Iceberg Model by Donella Meadows.

### Figure 38

#### *Analytical Synthesis of Findings Against the Iceberg Model by Donella Meadows*



This case study revealed that faculty are receptive to proven and methodical solutions to achieve common goals, even if new strategies asked them to behave differently. College leadership, faculty, staff, and students had a shared vision and aim: teacher and student success. They wanted practical and actionable steps that honor their values (e.g., content expertise, fairness, and growth). The study found that educators welcomed the EDD model's methods, especially the 80/20 principle. The positive outcomes of the first EDD model course gave them hope of the model's efficacy. They were optimistic of the model's potential to relieve them as individuals of the burden of systemic change. Educators' and students' positive perceptions and willingness to behave differently in the model suggest that system actors seek structures that

align with their beliefs and set them up reliably for success. What follows is an expanded discussion of the above. See Table 13 for a grid of analytical themes.

**Table 13**

*Grid of Analytical Themes, Their Relationships, and Sample of Theoretical Propositions*

<b>What</b>	<b>How</b>	<b>Why</b>	<b>Discussion of Findings</b>
Educator and student perceptions of EDD model (Beliefs, opinions)	EDD model affects educator and student behaviors (Operations)	EDD model affects educator and student behaviors (Relational links)	Theoretical Propositions (Explanations)
Similar perceptions of aims and varied understanding of methods	Initial collective agreement, training, meetings, hiring processes	Enabling college conditions, college aims alignment, undeveloped methods/tools	Shared vision (Senge, 2006); coherence (Fullan & Quinn, 2016); structural integrity (Meadows, 2008); implementation fidelity (Fixsen et al., 2019)
Collegiality, accountability, and team learning	80/20 principle, collective teacher efficacy (CTE), access to and use of data	Collaborative processes, shared learning, co-ownership, error reduction	Self-organization, feedback loops, learning (Meadows, 2008; Senge, 2006); improvement science (Bryk et al., 2016; Crow et al., 2019)
System for teaching and student success	EDD-CDP, EDD quad, EDD master course templates, EDD model course prototypes	Systemic and structured approach, institutional supports, foundational start, benchmarks	Hierarchies & feedback loops (Meadows, 2008); structure, dialog, and autonomy macro-factors (Moore, 2019); instructional design (Halupa, 2019)
Time saving, stress reducing, and skill-building methods	EDD course prototype, master courses, templates, UDL, TiLT, etc.	Ready to launch courses, focus on instruction and students, scaffolded teaching and learning, care and empathy	Bounded rationality (Meadows, 2008); transactional distance (Moore, 2019); implementation science (Fixsen et al., 2019)
Consistency promotes fairness, autonomy, and learning	Focus on consistency, 80/20 principle, methodical and transparent supports	Design promotes autonomy and supports motivation, downstream effects	Structure (Meadows, 2018; Senge, 2006); implementation science (Fixsen et al., 2019)

*Note:* Theoretical propositions listed are representative and not inclusive of all those discussed in this dissertation.

*Finding 1: Enabling Conditions & Structure Matter*

When people truly share a vision they are connected, bound together by a common aspiration. Personal visions derive their power from an individual's deep caring. Shared vision derives their power from a common caring.

~ Peter Senge

**Enabling Conditions.** The college's structural investments in systemic change created enabling conditions (Fixsen et al., 2019; Fullan & Quinn, 2016) and facilitated the emergence of beliefs for change (Meadows, 2008; Senge, 2006). The college reminded faculty about systemic inequities via college-level communications and day-to-day functions. Student outcomes were embedded and discussed in nearly all large college meetings. Professional development sessions challenged faculty to apply evidence-based practices. Annual program reviews required instructors to retrieve and analyze student data from the college's Tableau dashboards. The tenure and post-tenure processes asked faculty to apply and reflect upon instructional practices and how these impact learning. This "shared depth of understanding about the purpose and nature of the work" (Fullan & Quinn, 2016, p. 1) served as foundational strength for a shared worldview upon which structures can be built (Meadows, 2008; Senge, 2006). It kept faculty attuned to the challenges before the college to close equity gaps. A collective awareness of persistent gaps and a call to end them came together as shared vision. As Senge (2006) said, "Shared vision is vital for the learning organization because it provides the focus and energy for learning" (p. 192).

**Operationalization of Call to Action.** Faculty began to ask for specific means to meet the college's goals as awareness of structural inequities and common caring developed. Calls for practical interventions were natural systemic responses as shared vision sought structures to

come to life (Meadows, 2008; Senge, 2006). The EDD model in large part arose from enabling conditions to manifest equity and why department faculty were receptive to the EDD model. The model's clarity of purpose, alignment with the college's goals, and methodologies resonated with department faculty looking to operationalize the college's call for systemic change.

**New Feedback Loops.** The EDD model methodologies introduced new feedback loops in the system. They redirected siloed behaviors to collaborative practices at the program level. The initial collective agreement to proceed with the pilot, the initial EDD model training, subsequent department meetings, hiring processes, and the model's methods and tools (e.g., course development processes, 80/20 principle, and course prototype) carried new information into and out of a foundational stock (i.e., belief about individualized instructional approaches) in the system. The EDD model challenged the viability of an archetypal behavior named shifting the burden, so-called because of using symptomatic fixes to solve structural problems instead of applying strategies to address core causes. It allowed faculty to address a limiting condition to teacher and student success: siloed practices that create significant variances in the quality of learning experiences, which negatively and disproportionately impacted students from historically marginalized communities.

After nearly two years into the pilot, faculty have shared lexicon to describe the work of the EDD model and what the 80/20 principle means to them: shared development of common courses with a high level of consistency, reliability, fidelity, transparency, and structural alignment to programmatic goals. They arrived at a collective understanding that the quality of courses should be assured through collaborative processes and agreements. Importantly, they acknowledged that the success of students should not be dependent on who teaches the course. This indicated a paradigm shift from an individualized to a collaborative orientation to designing

and delivering courses to assure reliable quality, which they regarded as fair to students. An administrator in the study captured it this way:

It's a social justice issue when we have situations where a student's grade might be dependent upon the faculty member that's teaching the course. The EDD model is one way to level and ensure that expectations are similar across course sections and that deliverables are similar and are aligned with course outcomes of that learning experience from the student perspective.

Educators came to accept that significant variance across the courses led to unfair learning conditions, leading to inequitable outcomes. As the pilot proceeded and they built or taught EDD model courses, they came to support the EDD model's proposition: faculty need to collaborate purposefully and methodically for equal opportunity to learn at high levels to occur. This shift in mindset aligns functional system hierarchies, which "exist to serve the bottom layers, not the top" (Meadows, 2008, p. 178). In this case, the top layers of the education system, where faculty reside, organize and coordinate their efforts to serve the needs of the students (bottom layers). This fundamental realignment of system functions to serve its purpose: teaching *and* learning success.

**Varied Understanding of EDD Methods.** Behaviorally, the educators' posture toward collaboration as a structural strategy to end disparities in student learning was also similar. They engaged the 80/20 principle with a common interpretation of its principles, purpose, and value. However, they differed in perceptions and understanding of the model's specific methodologies. For example, it was not clear to them where the 80 percent of collaborative agreements ended and where 20 percent instructor discretion began. These varying perceptions of methods appeared to depend on whether faculty were present in the initial set of meetings to discuss the

adoption of the EDD model, attended the initial training, were part of department meetings, or had built an EDD model course. Also, 80/20 agreements were verbalized, not written. Lack of process to document agreements resulted in localized interpretations of what could be added to the courses. The EDD course prototype appeared to minimize deviations from design, however. Without documented structures in place and regular mechanisms to maintain them, system actors would likely improvise over time and risk losing reliable quality courses.

**Indicators of Systemic Change.** The pilot revealed that enabling conditions (e.g., shared vision, alignment of aims, and presence of institutional supports) for change are helpful for a positive reception of the EDD model. It can facilitate the adoption of and engagement in new feedback loops to enable new and intended structural behaviors. However, the pilot did not necessarily show what level or which enabling conditions are required for implementation to proceed. As Fixsen et al. (2019) noted:

If full and effective use of innovations in practice depends on waiting for just the right conditions and individuals to appear, scaling will be impossible to achieve in any deliberate way, and we will be left with the persistent science-to-service gap (Committee on Quality of Health Care in America, 2001). For scaling to occur and socially significant outcomes to be realized, implementation must be in the “making it happen” mode (p. 57).

Therefore, it may be enough to get innovations started. For example, as part of an adaptive leadership strategy, system leaders of authority (e.g., college president, academic dean, or director of teaching and learning) can support educators with limited institutional authority (e.g., chairs, faculty) (Heifetz, 1994) by funding experimentation. This was the case with the EDD model. While I had influence as chair of a department to cause consideration for a pilot intervention, I had no resources to implement it. It required budgetary authority for my

colleagues to deem the EDD model as an option seriously. Also, few instructors in the college knew of or were keen on distributive academic freedom as a strategy to end systemic inequities. However, by proceeding with a “making it happen” mode with the requisite resources, educators in the pilot came to accept the EDD model’s 80/20 principle. By not waiting for a fully receptive audience, the EDD model’s feedback loops made collaborative thinking and acting occur. This change is demonstrative that structures fundamentally create patterns of behavior (Beer et al., 2016; Meadows, 2008). It also supports a systemic truth that inspiration and aspiration are not enough. For intended change to happen, structures for desired behaviors need to be installed.

In any event, the pilot did show that structures within the model need further development. It called attention to the importance of formal functions and roles to assure the model’s fidelity, especially at scale (Fixsen et al., 2019). For example, clarity on who would be responsible for documenting, storing, and disseminating the agreements would help ensure implementation clarity. The educators in the pilot also recognized that regular time for collaboration (itself a feedback loop) to integrate EDD model processes is critical to sustaining change. The hierarchies within the model (collaborative, evidence-based processes) designed to serve the lower levels (equitable outcomes) would eventually deviate or conflict for lack of structure (Meadows, 2008). In the absence of structural feedback loops that sustain the EDD model’s methodologies, faculty will likely revert to entrenched siloed behaviors – a significant source of variance in quality teaching and learning. While this may seem to pose a significant problem in the pilot, it was not. As embodying a framework, EDD model course prototype provided guidelines of good instructional design. This framework is visible at the development stage not necessarily during course delivery. Such a discovery is in keeping with implementation science’s notion that the act of implementing reveals areas to attend and resolve:

We will not *think* our way to change, but we can behave our way to change by doing the work of the innovation and exposing real problems that can be solved (re-solved) in real time by leaders and Implementation Teams (Fixsen et al., 2019, p. 60).

Indeed, this pilot gave me occasion to act upon missing documentation. After interviews with faculty and hearing firsthand how interpretations of what could be changed in the course differed, I sat down and recalled what my colleagues and I agreed upon as foundational matter for program courses. I added my recommendations based on my doctoral research and put them in a department folder dedicated to the EDD model pilot. I also discussed the list with my colleagues soon thereafter.

***Finding 2: 80/20 Principle Changes Behavior***

You think that because you understand “one” that you must therefore understand “two” cause one and one make two. But you forget that you must also understand “and.”

~Sufi teaching story

**Self-Organization.** A complex and dynamic system can create new structures, learn, and adapt (Meadows, 2008). This ability to self-organize is a point of leverage where socially significant change can occur. The EDD model is a form of self-organization within the college.

The EDD model introduced new collaborative structures and feedback loops to shift the burden of systemic change from the shoulders of individual instructors to the collective faculty. Even though educators in the pilot acknowledged their right to academic freedom, this recognition did not preclude them from engaging in the new collaborative behaviors in the EDD model. In other words, they did not hold individual academic freedom and collaborative activities as mutually exclusive. They regarded the 80/20 principle as representing distributive choice among trusted colleagues to exercise collective professional judgment to meet common

goals. They perceived that the EDD model's 80/20 principle engaged in that choice. The model did not compel them to agree but asked that they be ready to dialogue over what constitutes the core of the course. They believed that through professional exchanges and disciplined inquiry, they would collectively agree on what was best for students. Their engagement in this new structure required a level of personal mastery, a commitment to learn (Senge, 2006). This undertaking required continually clarifying what is important to the work at hand and "learning to see current reality more clearly" (Senge, 2006, p. 132). The reality before the educators was the persistence of outcome disparities. It asked the educators to engage in creative tension between past behaviors of building courses apart from colleagues to engaging in collaborative instructional design and delivery processes to assure equal opportunities to learn at high levels.

**Self-Correction.** The feedback loop created by the 80/20 principle allowed faculty to discuss the inner working of a course using student data and integrating their professional observations. This loop increased the capacity of the department to realize collective teacher efficacy (Hattie, 2016; Donohoo, 2017) by making the student learning visible to them (Hattie, 2012). They perceived this cooperative exchange as helping to gain insights they would not otherwise be able to synthesize independently. Neil made this point:

[T]he collective process of course development helps mitigate individual faculty weaknesses by including a wider range of ideas than the limited view of a single instructor. It seems like that might also help with bias reduction or even just plain error correction.

Their engagement in bias awareness, error reduction, and synthesis of ideas to achieve a collective goal characterized what Senge calls "operational trust." This trust is "where each team member remains conscious of other team members and can be counted on to act in ways that

complement each other's action" (p. 219). It is also this trust that allows for the recognition of errors and to proceed with collectively informed solutions.

**Indicators of Systemic Change.** The educators in the study recognized that the 80/20 principle supports team learning and promotes collegiality, co-ownership, and accountability. They believed that their collaboration would result in clarity of course expectations, consistency of instructional design, and fairness in learning experiences by students. Their embrace of the 80/20 and their collaborative posture within it indicated that the principle is a strong variable in the implementation of structures designed for intended behaviors (Fixsen et al., 2019). Educator acceptance of the principle as a mechanism to create courses that set students for success no matter who teaches the course suggested a focus on variation in performance and a commitment to reliable quality. As Bryk et al. (2016) explained:

Achieving improvement at scale is not about what works on average. It about getting quality results under a variety of conditions. Understanding the sources of variation in outcomes, and responding effectively to them, lies at the heart of quality improvement (p. 35).

The educators' willingness to examine variance and arrive at collective agreements to achieve consistency across courses showed that they are willing to subordinate their own desires for the greater good: broad student success.

***Acceptance of 80/20 Principle.*** Interestingly, educators did not question the proportional distribution of the 80-agreement/20-discretion principle. Instead, they seemed to associate it with the generally accepted concept of the Pareto principle, named after the economist Vilfredo Pareto. The rule states that 80 percent of the results come from 20 percent of the causes. Although the EDD Model's 80/20 principle does not equate to Pareto's causes to results ratio,

the distribution resonated with faculty as a reasonable heuristic to maintain accountability, attain consistent performance among individual educators, and achieve fairness for students. They sensed that without a high level of agreement, unpredictability and variability would set in, faculty would “stray,” and students from historically marginalized communities would be negatively affected. They also believed that the 20 percent discretion was enough to add their strengths to and unique take of a course while recognizing inherent benefits of consistency across courses in a program. Their approval of the 80/20 principle suggested that other faculty in the college may be willing to engage in it as well.

Indeed, educators in the pilot perceived the 80/20 as a powerful means to tap each other’s experience and expertise. However, the pilot nature of the EDD model did not allow for full leverage of institutional resources to realize the 80/20 principle’s full potential. For example, to fully manifest its self-organizing, self-correcting, collegial, and accountability benefits, educators need to have regular time to collaborate and engage the 80/20 principle. Nevertheless, the pilot showed that the collaborative feedback loops within the principle would likely result in synergies not otherwise possible in siloed approaches to course design and delivery. The pilot also revealed, perhaps surprisingly, that the distributive structure of the 80/20 principle leads to openness to collaborate.

*Finding 3: EDD Methods as System for Success*

The leverage point is in proper design in the first place.

~ Donella H. Meadows

**Hierarchy of Structures for Success.** The theory of transactional distance posits that the structure of an online course determines the need for teacher-learner dialogue (Moore, 2019). The interplay between these two macro-factors determines the level of autonomous learning

possible within that course. Saba and Shearer (1994) proved these claims to be empirically true. From a systems theory perspective, the dynamic interplay among the three course variables suggests a hierarchy: at the top level is structure, followed by dialogue, then learner autonomy. In properly functioning systems, hierarchies exist to serve lower levels (Meadows, 2008). In the case of online learning, the structure needs to be designed for autonomous learning. The intermediary level, dialogue, is either designed to support productive content engagement and critical inquiry or its inordinate presence is a symptom of a dysfunction in the design. The Community of Inquiry (CoI) theory framework would go further and recognize that dialogue is not just between teacher and student, but also with other students and content to promote higher orders of thinking and learning. In either theory, functional dialogue is regarded as intended versus a consequence of lack of course structure. Purposeful dialogue serves autonomous learning.

Terrell and Dringus (1999) found that online learners tended to be independent learners who have needs to balance their work, life, and school demands. Student interviews in the case study affirmed this finding. Their frustrations in courses that lacked structure, a proxy for good course design, suggested that they do not want to spend their time “figuring out the professor,” which was synonymous with “figuring out the course.” They wanted to get to the learning quickly and attend to the needs of the course in their own time. In other words, online learners expect online courses to support their need for clarity and autonomy.

**EDD: Structured for Success.** Students found the EDD model to be organized, clear, and enjoyable. They found that the purpose of the class, what was expected of them, and how to accomplish the assignments and projects well clearly laid out – providing them with a “roadmap to success.” They even liked, to their surprise, the routines, which kept them focused and

connected to the course all quarter long. They said that the way the courses were structured help them learn course materials and complete the course against expectations. Recurring sentiments in the course evaluations of eight EDD model courses affirmed and aligned with student depictions of EDD model courses in the student focus group. Students consistently agreed that the EDD model courses met their learning needs, as evidenced by their comments during the focus group interview and student evaluations.

Educators described the EDD model as a system of methodical approaches and tools that helped them consistently develop well-designed courses designed for learner autonomy. They, too, say that the model provides them with a roadmap and system for success. This indicates that the EDD model course development structures and their devices are largely functioning as intended. These descriptions from faculty and students suggested a level of predictable quality that is relatively constant two years into the model as a pilot. Telling perhaps is the relatively similar sentiments and high course rating student gave of all eight EDD model courses evaluated in the study regardless of who taught the courses.

**Feedback Loops and Behavioral Change.** The EDD model structures serve as necessary feedback loops to carry new information (i.e., attention on variance in performance) about how to behave (i.e., collaboratively) for what purpose (i.e., equity) within a fundamental system stock (i.e., how courses are designed and delivered). Without introducing new feedback loops that align with system goals (i.e., broad student success), there would be little reason to regard stock levels as problematic or to consider a new version of that stock. Educators and learners changed their behaviors (e.g., faculty adopting collaborative practices and students welcoming routines) due to new information, which informed system actors of benefits via new patterns of behaviors. Indeed, faculty and student sentiments said as much.

**Indicators of Systemic Change.** The educator and student perceptions indicated that the EDD model is functioning as designed not just for a time but for a sustained amount of time (Fixsen et al., 2019; Kelly & Perkins, 2012). This was likely possible due to the structural supports within the model, without which effect pilot implementation would have been in doubt at the outset and certainly dooms the enterprise at scale. Without structures that align with the college's aims, it would be nearly impossible to change past behaviors as well as integrate and sustain new ones (Meadows, 2008; Senge, 2006; Fixsen et al., 2019). Without tangible demonstrations of course design benefits, system actors would likely abandon the model.

***Finding 4: Structures Shift Burden on System of Supports***

Today's problems come from yesterday's "solutions."

~ Peter Senge

**Bounded Rationality.** In systems theory, bounded rationality means that "people make quite reasonable decisions based on the information they have. But they don't have perfect information, especially about more distant parts of the system" (Meadows, 2008, p. 106). In systems where components organize to function separately, information about how localized decisions create negative downstream effects may not be readily visible or sought by system actors in silos. For example, when colleges ask adjunct faculty to teach online courses with the expectation that instructors create the assigned courses, the effects on the instructor, students, subsequent courses, and completion rates may not be immediately evident. College representatives may regard an invitation to teach a course to be welcome news by adjuncts economically dependent on assignments. Part-time faculty, on the other hand, may receive such news with mixed feelings. As stated by part-time instructors in the study, they often have multiple college commitments. They simply do not have time to build well-designed courses.

Nor do they necessarily know-how. Higher education instructors – part-time or otherwise, are subject matter experts (SMEs), not formally trained in the art and science of teaching (Halupa, 2019). Most rely on what they came to know as former students or on what they picked up along the way.

***Teacher or Teaching.*** Working from their own knowledge base and without instructional supports to know better, it is reasonable that faculty, both part-time and full-time, would make good enough decisions based on what they think they know or can find (e.g., past school experiences, tips from other colleagues, and YouTube videos). Working within this bounded rationality, system actors, like faculty, are unaware of the greater impact of their “satisficing”<sup>5</sup> choices (Meadows, 2008). They are not to blame. They are within a system whose structures cause them to draw from limited information and experience about teaching and being a teacher, which are two different things.

Just as a driver is interlocked with the acts of driving, the dancer to dancing, the pilot to flying, so to the teacher to teaching. Structurally, the practices of each activity make up a specific discipline, which is distinct from other disciplines. These patterns of behavior determine the results (e.g., salsa versus foxtrot). While the actor is important, what is more consequential is what and how the actor practices within the field of discipline. Teaching is a discipline with defined practices (e.g., lesson planning, curriculum development and delivery) that can differ in application across modalities. Yes, teaching is partially a creative act, but it is also profoundly structured, “in which learning is not random but deliberate and planned” (Moore, 2019, p. 34).

Asking SMEs to apply evidence-based teaching practices without formal training or instructional supports in effect expects them to work beyond their domain of expertise (Katz &

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<sup>5</sup> Herbert Simon (1957) combined the words “satisfy” and “suffice” to describe the behavior of making good-enough decisions versus optimal ones based on imperfect information.

Dack, 2013), far beyond their bounded rationality. They will naturally make “satisficing”<sup>6</sup> choices. Their “good enough” choices, along with other satisficing choices by other similarly situated instructors, accumulate and cascade as missed opportunities to learn at high levels. In online learning, learning disconnects are more likely because teacher and learner are separated (Moore, 2019). It also because teaching is structurally different than face-to-face instruction (Avolio & Kahai, 2003). Operating beyond one’s domain, expertise, or time capacity, SME’s cognitive, behavioral, and affective stress would reasonably increase. The educators in the study described their frustrations as such. Their sentiments also suggested that because such expectations to make do has been a professional norm, they have not necessarily expected structural supports to relieve their stress. Participating in the EDD model seemed to have introduced a different and possible reality.

**Methods as Structural Support.** Educators in the study perceived the EDD model methods and tools as saving them time and stress. They also noted that they have learned about teaching practices while building and teaching EDD model courses. Similarly, students described the structures of the EDD model courses as reducing their anxieties about course taking, helping to maintain their motivation, and facilitating their ability to meet course expectations. By systematizing the development of pedagogically sound courses, the EDD model appeared to function as designed. Verbalized and written assessments as well as behavioral changes, as explained by the study participants, empirically support this conclusion.

**Saving Time.** While the explanation is mainly relational from a research design standpoint, both educator and student participants noted the time-saving benefits of the EDD model and its courses. By way of comparison, students described how much time they lost in

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<sup>6</sup> Herbert Simon (1957) combined the words “satisfy” and “suffice” to describe the behavior of making good-enough decisions versus optimal ones based on imperfect information.

poorly structured courses. They said that the EDD model courses with their clear expectations, multi-staged projects, routines, and other structural supports allowed them to plan and pace learning activities in ways that helped with deep learning for the duration of the quarter. Faculty described their activities before the EDD model as spending much of their time developing the organizational basics of the courses (e.g., creating a homepage, putting assignments in folders), managing their inboxes to help students with logistical hurdles (e.g., directing students to where assignments are located, explaining assignments), and trying to stay one week ahead of students with course development. Because these consumed their time, they did not have much time left to do what they characterize as “teaching.” Teaching in their mind was organizing, designing, and delivering content so that students learn the materials.

***Building Skills.*** During the EDD model, instructors spoke of their capacity to launch a “well-designed” course immediately, letting them to focus on teaching rather than developing courses all quarter long. They said that the EDD model and course prototype provided them a “roadmap for success.” Their use of the term “roadmap” was apropos as the prototype is not only a framework of sound pedagogical practices, it is also a blueprint that shows how structural parts and processes connect to optimize learning. Proceeding with the construction metaphor: With the assistance of an instructional designer (engineer) and program chair (foreman/person), instructors (builders) built structurally sound courses. In the dialogical process (inclusive of colleagues during the 80/20 protocols), instructor-builders became familiar with the purposes and value of each structural unit in the design. Their engagement in course design within the EDD model amounted to applied learning and pseudo-apprenticeship to learn the practices of the teaching discipline. The SMEs’ exposure to evidence-based teaching practices demystified why certain instructional strategies work, increasing their confidence in the practices of teaching.

***Reducing Stress.*** Those who did not build courses described the use of EDD master courses as reducing their anxiety and promoting a feeling of being supported. A sense of relief was particularly evident in the perceptions and behaviors of part-time faculty. They were relieved in part because they are not paid to build courses, nor do they have the time to do so. They preferred to focus on their expertise, content, which they admitted stayed relatively stable from quarter to quarter. Counter to concerns about infringement on academic freedom, both part- and full-time faculty were not resistant to collaboratively derived courses. They felt that the 80/20 principle allowed them enough freedom to exercise their judgment as SMEs and gave them confidence that the course served the program's goals. This balance of group and individual needs appeared to have a positive psychological effect: connectedness to a greater and shared purpose where they could contribute individually and collectively.

***Indicators of Systemic Change.*** From an operational perspective, the participants behaved as intended, which is promising for implementation purposes (Fixsen et al., 2019). The instructional designer (ID), who helped many instructors shift to online learning during the COVID pandemic, described how much more efficient course development proceeded with those in the EDD model versus those who were not. Indeed, the ID said, "it literally was a pleasure to work with them." In her mind, the EDD model structures explain both the efficiency and the effectiveness of the course design.

The perceptions of the adjunct faculty are particularly instructive. Their descriptions of what it was like before the EDD model and how they perceived it to help them during the pilot indicated the *need* for structures as sources of support for faculty who are disconnected from the day-to-day functions and initiatives of the college. Absent the structural supports to help adjunct faculty meet institutional goals and expectations, part-time faculty, who teach nearly 50 percent

of the courses in colleges and universities across the U.S. (National Center of Education Statistics [NCES], 2020), were left to cobble ones of their own which they admitted often required the whole term to complete. This was not lost on students who lamented time spent trying to figure out what was expected of them as well-intentioned faculty struggled to keep up. This decidedly was not the experience of faculty and students who taught and learned from master courses developed using the EDD model structures.

However, it is worth noting that students did not say that only the EDD model courses were the only well-structured ones in the college. There were also other well-designed courses that they enjoyed. The main difference with the EDD model is its collaborative approach to creating reliable quality courses at the program level to eliminate learning gaps and its ability to scale such efforts to have broad student success.

***Finding 5: Structure for Desired Behavior and Results***

System structure is the source of system behavior. System behavior reveals itself as a series of events.

~ Donna Meadows

**Results by Design.** From a systems standpoint, a recurrence of disparate student outcomes is a consequence of how a system is designed (Meadows, 2008). The EDD-ToC posits that the persistence of outcome discrepancies is rooted in structures designed for individualized variance and inequitable outcomes. To address this structural design flaw in the system and to meet equity goals, the EDD model operationalizes the collaborative creation of reliable quality courses.

**Course Outcomes as Lagging Indicators.** When faculty saw the course outcomes of the first EDD model course (IBC-101, EDDm-A in tables of this study) and verbalized their

assessments of its performance, they began to describe why they thought the outcomes significantly improved. They believed that the course design, structure, and methods made expectations and ways to achieve them explicit to students. In other words, they described the structures that lay beneath the surface of the EDD model system as responsible for the positive outcomes. In system theory, these outcomes are events that show up long after changes in systemic patterns of behavior (Meadows, 2008). They confirm changes and trends at the lower levels of the system's hierarchies. These are otherwise known as lagging indicators, measurable or observable factors that change sometime after changes in the system have occurred (Investopedia, n.d.). In keeping with the dynamics of the system, outcomes for EDDm-A are lagging indicators of the efforts put in for *EDDm-A*. Results for other EDD model courses are not yet available in the college's Tableau dashboards. Therefore, no analysis of the effects of the EDD model at the program level can be made. The large n size and frequency of IBC-101 courses taught by multiple instructors offer some sense of the capacity of an EDD model course to reduce equity gaps. The larger challenge is how to replicate the performance of one course in others. This is the reliability question, which very much a structural interest. For educators, reliability, which they referred to as "predictability" and "fidelity" in the interviews, was a prerequisite to enable "fairness" in learning experiences.

**Fairness by Design.** Pilot educators supported structural consistency among program courses as a matter of fairness to students. This spoke of their desire to manifest conceptions of equity in the structures of their daily functions as instructors. Specifically, they did not think that student success should be dependent on who teaches the course. This acknowledgment was particularly indicative of a mind shift as they had not previously, not openly anyway, stated this before the pilot of the EDD model. They believed that students should have predictable quality

learning experiences and why they were open to creating master courses. They thought the 80/20 principle to be critical in operationalizing their shared vision of equity and common care for student success. Such a posture is aligned with a principle of well-functioning systems where top levels of a hierarchy (those who make decisions) serve the bottom levels (those whose wellbeing depend on decisions from the top) (Meadows, 2008).

What appears to be keeping courses in the program to retain a high level of consistency are two structural processes and their feedback loops: (a) the use of the EDD course prototype as a framework and blueprint to build new EDD model courses and (b) the course review of the program chair to ensure that program level agreements are applied. Because the prototype is itself a model, most of its pedagogical design aspects carry over to other courses. However, once a master course is built and handed over to those who teach it, what can be changed as part of the 80/20 agreements is not always evident. As discussed in an earlier section, documentation of where the 80 core ends and the 20 percent discretion begins would be essential to outline and share with instructors. Similarly, the pilot showed that the functions of the chair as overseer of 80/20 processes and programmatic goals under the EDD model would benefit from clarity. As well processes for documentation for would strengthen the model. This level of transparency is important to assure that the structures and their feedback loops behave as intended and trust is maintained among colleagues.

While it is beyond the scope of this paper to attribute the improvements in completion rates in IBC-101 solely on the EDD-model intervention, the trajectory of the change is dramatic enough to warrant further investigation in a future study. In such a case, it might be helpful to explore the role of full-time faculty teaching several sections of a course in changing the outcomes. For example, in addition to the EDD model as an intervention, the other main

difference between the pre-EDD model and EDD-model years is the addition of a full-time faculty to teach IBC-101. This may have had an impact. A close look at the distribution of completion rates of IBC-101 courses by section challenges this hypothesis during the EDD model years. Nevertheless, it may be helpful to address what significance type of instructor might have in the intervention.

**Indicators for Systemic Change.** Educator descriptions and explanations of their behaviors in the pilot suggested that they perceived operational, logistical, and instructional benefits in the EDD model. They spoke of the 80/20 principle in collegial terms with opportunities to learn together and as a mechanism for continuous course review cycles. Though there have been few opportunities to meet formally as an entire department, their discussion of the model showed that faculty remain open and optimistic about the 80/20 functions. Such openness to collaboration might make possible the integration of instructional rounds in future model iterations, where educators observe each other's classes to conduct assessments and diagnostics of what may or may not be happening in the course (City et al., 2019; Darling-Hammond et al., 2017). This is important in the sense that their shared belief in the possibilities of the model serves to animate their continued and future engagements (Senge, 2006).

Educator characterizations of what makes the EDD courses equitable (e.g., structural consistency, programmatic consistency, consistent accessibility, course-wide transparency, pedagogical supports) imply that reliable quality assurance is associated with fairness. However, it is unclear to what degree each faculty would like to participate in assuring this quality. As indicated by at least one part-time faculty, some may want to be recipients of fully developed courses to save time and focus on content versus becoming course builders. Others may wish to develop courses as an expression of creativity. Whatever role they may or may not want to play,

they all want to eliminate equity gaps and have all students graduate at high rates. They also want to have the mechanisms to help them achieve this goal. For all educators in the pilot, they believed that the EDD model would help them achieve the college's equity aims. If such a belief is shared by a critical mass of educators in the college, and the outcomes of the first EDD model course are reliably replicated, then systemic change is likely on its way. To achieve such a feat, there would need to additional structures put in place to assure implementation efficacy at scale (Fixsen et al., 2019).

Not all structures need to be in place to start, however. As Neil, a senior part-time instructor, indicated, it may be enough to show what is above the structural patterns of behavior to generate interest in and momentum for the adoption of the EDD model. "Show them the graphs," he said.

## Chapter 5. Recommendations, Conclusions, and Reflections

If you change the way you look at things, the things you look at change.

~ Wayne Dyer

The EDD model hypothesizes that siloed teaching practices create harmful variances in course quality. The unpredictability of quality learning experiences increases the likelihood of missed opportunities to learn at high levels with negative and disproportionate impacts on non-traditional students – among them first-generation college students, students of color, and students of low SES. These learning gaps manifest in academic metrics such as completion rates and disparities in student outcomes with downstream effects as students struggle to meet credentialing requirements in progressively more challenging courses. The model aims to create reliable quality courses by leveraging collective teacher efficacy – the belief by a group of educators that their evidence-based practices impact student learning (Hattie, 2016; Donoohoo, 2019). The EDD model’s 80/20 principle puts this collective orientation into action.

Supporting the structural fidelity of the EDD model and its suppositions are EDD framework, its collection of evidence-based practices, and methodologies to align belief, structures, and intended results. Leaving little to chance, the model applies improvement and implementation sciences and principles of adaptive leadership to increase the likelihood of intended outcomes: increase completion rates and eliminate significant outcome disparities across and within student groups. Finally, the EDD model believes that equitable education requires reliable quality based on the consistent, thoughtful, and collaborative application of evidence-based practices.

An analysis of the study’s themes indicated that educators have a shared belief rooted in the college’s equity goals to increase student completion rates and eliminate outcome gaps.

Educators in the study believed the EDD model to have the same purpose. They agreed to develop courses they could count on to consistently deliver intended outcomes. They believed that the EDD model's systematic, collaborative, and evidence-based structures are crucial in this regard. Indeed, the department where the program is housed now has 17 EDD model courses as of this dissertation. Educator perceptions and behaviors and the resulting student outcomes of their efforts also revealed that commitment to collaboration and structural supports matter.

Belief, inspiration, and care are vital motivators. They get people on the stage.

Nevertheless, they are not enough to create and sustain systemic change. On the platform of possibilities are actors looking for clarity of roles, directions, and processes. They want to know how everyone is to behave (structures). They want the script and how the story unfolds (patterns of behavior). They need the story to end well (intended outcomes). They need a viable and practical plan with a strong likelihood of success for all these to occur. In the mind of educators who participated in the pilot intervention, the EDD model might be that plan.

### **Recommendations**

Below is a list of recommendations to script a plan of action given the lessons and findings from the pilot of the EDD model. The list is incomplete and serves to generate other considerations appropriate for specific contexts. It is offered here with the assumption that the EDD model pilot at the college ends soon, and the next steps will be determined by college leadership or by the department's faculty. It also assumes that those considering exploring an EDD model pilot might appreciate ideas on where and how to begin. Two functional areas serve to organize the recommendations. One is for technicalities of pilot or scaled adoption; the other for adaptive considerations where technical or wholesale adoption of the EDD model is not yet a consideration. The recommendations do not require perfect conditions or the right individuals to

appear. It bears repeating what Fixsen et al. (2019) said, “For scaling to occur and socially significant outcomes to be realized, implementation must be in the ‘making it happen’ mode” (p. 57). Here’s to making it happen.

### *Technical Considerations*

- **Secure a budget for a two-year pilot.** This includes time for collaborative meetings for both part- and full-time faculty, professional development to learn of the EDD model and its processes, and course development. Consider the number of courses to pilot and build in flexibility as momentum gains. See Table 14 for top-level budget parameters. Other capacity-building considerations may be in order if your institution does not already have an instructional designer or an e-learning department.
- **Find a system champion** and gain their support to help you have an audience with those with budgetary power.
- **Establish an implementation team** familiar with both improvement and implementation sciences. This team should be between five to seven people and include an instructional designer, a technologist, and faculty respected by their colleagues. This team serves as the project management team.
- **Clarify responsibilities** as to who leads the EDD efforts in the department or program. At the college of this study, it made sense that this be the program chair. Other organizational constructs may afford different roles to take the lead. In any event, an adjustment of duties or additional compensation may be in order to recognize the additive nature of the work.

- **Establish clear methods, processes, and protocols** for the 80/20 principle as well as how to engage institutional resources. Refer back to Table 8 in chapter two for an example of a agreements.
- **Document agreements** and their rationale. Store and disseminate.
- **Include instructional designers and technologists to assess system capacity** to support programs. Criteria for engagement of the EDD model would be helpful to establish at the outset.
- **Use progressive course development processes** where faculty agree on a schedule of courses to develop. See Figure 39 for an example.
- **Commit dedicated time for collective teacher efficacy** by leveraging block scheduling. This affords the program time to collaborate regularly and apply the 80/20 principle. See Figure 40 for a conceptualization.
- **Engage the collective bargaining unit** as a stakeholder partner. They are critical in the implementation and have a shared vision of student success.
- **Integrate EDD model processes in professional development**, including the tenure and part-time leveling/advancement processes.
- **Create a plan to train and support part-time faculty** for the EDD model. They have different yet parallel considerations with impacts on resources.

#### *Adaptive Leadership Considerations*

- **If you are a faculty member** and interested in exploring what value an EDD model pilot might have in your department, **establish a professional learning community (PLC) and discuss the dissertation's findings**. You do not need to engage in a

wholesale pilot to experiment with the 80/20 principle. This is a good intermittent step.

- **If you are a faculty member** and do not see your department participating in a wholesale pilot of an EDD model, but would like to conduct a mini-pilot, partner with a colleague and **consider a pod-level intervention**. Recall that a pod is any set of courses that are naturally linked together (e.g., English courses, a prerequisite math course, and the required course).
- **If you are an instructional designer, consider approaching a receptive faculty member** and test the EDD model design process. Note the needs of the faculty and consider your internal process to support at scale.
- **If you are the sole faculty member of a department, reach out to an instructional designer and discuss creating an EDD course prototype** you can use to begin redesigning your courses efficiently.
- **If you are a system leader, consider offering competitive grants to encourage adoption of the EDD model**. Require participants to collect and interpret pilot findings. Analyze the information for scalability purposes. Publish results so others may learn and consider implications in their context.
- **If you are a board of trustee, consider a work study on the EDD model** and discuss its implications for instructor and student success.
- **If you are a student, ask your college what methods are used to create reliable quality courses** where students can succeed no matter who teaches and who learns.

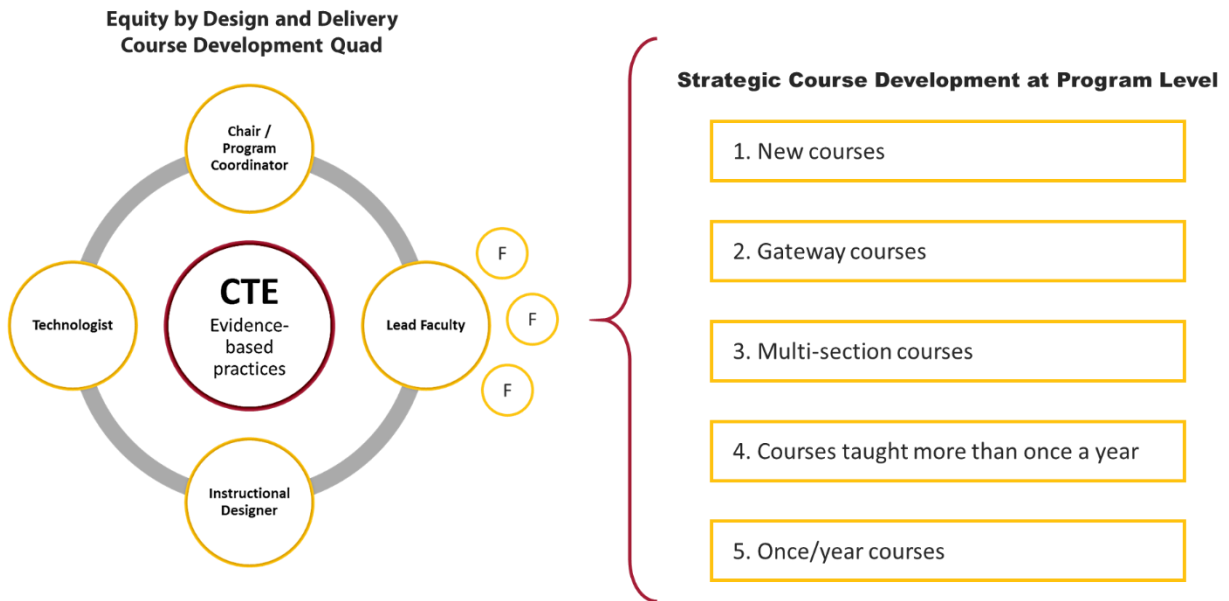
**Table 14***EDD Model Pilot Budget Considerations*

<b>Budget Elements</b>	<b>Activity</b>
Program buy-in meetings with part- and full-time faculty	Ideally, leverage existing department meetings. Compensate part-time faculty to encourage participation and recognize their contribution.
Professional development time and support materials	Provide a three-day training to engage the EDD model, inclusive of practicing 80/20 principle and course building. Create video tutorials, guides, and manuals for future reference.
Master course development	Identify courses to pilot and fund the development of master courses.
80/20 meetings (at least once quarterly)	As with program buy-in above, leverage existing department meetings and compensate part-time faculty participation.
Role enhancements	If a present role to coordinate the EDD model functions is not yet present, consider creating a temporary position or enhancing a current one with compensation.

*Note:* The EDD model uses existing institutional structures, resources, and roles (e.g., curriculum review, department chair, instructional designers, e-learning department, etc.). If these structures and capacities are not already in place, a far more extensive budget would need to be considered to account for their development or other creative means may need to be explored. For example, a smaller college may wish to partner with another college or join a consortium of other small colleges to combine resources and realize economies of scale and scope.

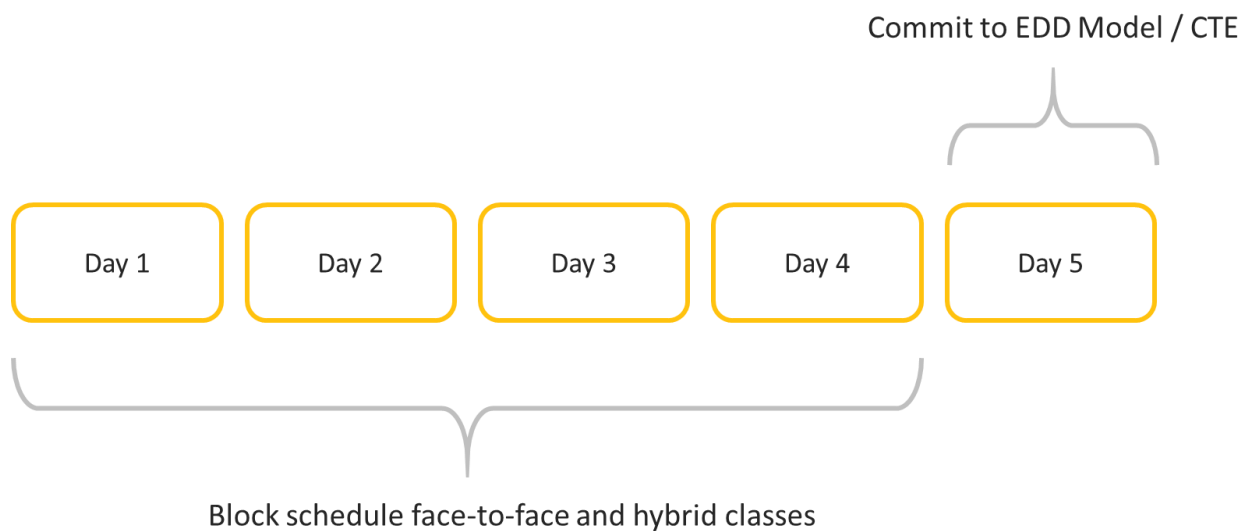
**Figure 39**

*How to Scale EDD Model Implementation at Program Level*



**Figure 40**

*Commit Time for EDD Model and Collective Teacher Efficacy*



### *General Implications of the Study*

**Internal Validity.** The study used a convergent mixed-methods case study design to answer research questions. Multiple quantitative and qualitative data were used. The research design established linkages between the research questions, data, analysis, discussion, and recommendations. However, recommendations did extend beyond the immediate boundaries of the EDD model as a pilot with an anticipation that the pilot would likely end soon, and decisions about the next steps would logically follow. Due to the relational nature of the study, no causal relationships between perception, behaviors, and results can be confidently made. I rely on the propositions of systems theory and other frames to make the logical and relational links as revealed by participant perceptions and behavior and observed in my capacity as researcher as instrument. Ultimately, this study is empirical, not experimental. That is for another study to surmount.

**External Validity.** This study's findings are limited to one program in a department in a mid-sized college in the U.S. Not to all programs nor all departments in the college, nor colleges in general. As a case study, it examines the data in context and strives to find insights in context.

**Measurements.** Data used, particularly of IBC-101 (EDDm-A), is incomplete for the 2019-2020 academic year. Student participants were not randomly selected, posing limitations of the generalizability of their perceptions within the department. For at least five of the students, I was their instructor or advisor at the time of the interview. These may have limited what they were willing to share. However, their comments' fluid and dialogic nature and my probing questioning may have mediated negative impacts. As a first-time researcher of this magnitude, I likely did not fully operationalize the instruments I used. I nevertheless took precautions and steps to establish a rigorous, systematic path and outlined a chain of evidence. An area that could

strengthen the analysis and its discussion is a further exploration of more rival explanations. I hope to explore this as part of my practice after the conclusion of this paper, as it is important to me that the EDD model lives in the world as intended.

### *Future Directions*

The study focused on perceptions and behaviors of one program in a department at an early stage of the EDD model. The examination of course outcomes was limited to one course, mainly because data about the other EDD model courses were not available in the college's Tableau dashboards at the time of the research. As a work in action, the EDD model has evolved and now has 17 EDD model courses at the time of the dissertation, with three in development. An examination of the EDD model's efficacy to effect change would benefit from the application of advanced statistical analysis to test causal relationships (e.g., propensity score matching, multivariate analysis) among multiple dependent (e.g., the role of training, individual instructor, type of instructor, specific processes) and independent variables (e.g., specific course outcomes by student group). The comprehensive nature of the model benefits from closer examinations and would bring insights into variable dependencies, which can refine and evolve EDD model processes.

### **Summary and Conclusions**

The college focused its operational efforts to center equitable outcomes as its aim beginning in the 2015-2016 academic year. It invested in structures (e.g., data collection and presentation, curricular review, annual assessment, professional development) to promote college-wide attention on increasing completion rates and eliminating disparate student outcomes. It called upon the faculty to apply evidence-based practices to improve student outcomes. Yet, it largely left the instructional core alone in recognition of academic freedom.

Faculty nevertheless wanted tangible, concrete ways to dismantle systemic barriers. It is in this context that the EDD developed and piloted in a program at the college.

### *Indicators of Change*

This case study aimed to understand the perceptions in and behaviors of educators and students in the EDD model as indicators of the systemic change. The study found the following:

- (a) Shared vision and enabling college conditions facilitated the educators' decision to pilot the EDD model.
- (b) Faculty were willing to distribute academic freedom within the 80/20 principle.
- (c) Educators and students believed that the EDD model methods create a system for teaching and learning success.
- (d) Educators and students found the EDD model or courses to save time, reduce stress, and build skills.
- (e) Educators believed that the EDD model processes help create consistently well-designed courses where students have a fair chance to succeed no matter who teaches the course. They assessed that the EDD model's methodical, transparent teaching and learning methods promote learner autonomy and success.

This study suggests that educator and student perceptions and behaviors align with the EDD model's intended results: collaborative design and delivery of reliable quality courses to increase completion rates and eliminate significant disparities in student outcomes. The findings suggest that the structures generally function as designed. The study, however, revealed undeveloped aspects of the EDD model. Processes for documentation of agreements, clarity of roles, time to collaborate, and other structural supports need development. Of these, the most valuable is time to collaborate regularly. For new feedback loops to form and change a fundamental stock (i.e.,

courses design and delivery), peers need to dialogue and inform perceptions and behaviors in sustained ways. Without the maintenance of these collaborative loops, siloed design and delivery of online courses will persist, as will substantial-quality variance, missed opportunities to learn at high levels, and the resulting persistence of significant disparities in student outcomes. It is not enough to inspire the flock. In the case of the college, they already believe. Structures and supports designed to change behaviors need to be installed and systemically supported to result in desired outcomes. Without different structures to replace old ones, established behaviors have no reason but to act and produce as they always have. That's just how systems work.

### **Reflections**

The work of the EDD model began in 2018 when leadership asked me to propose a new program designed for non-traditional students. As a non-traditional student myself, I jumped at the opportunity. I was going through tenure then and soon started my doctoral journey, excited to pursue the work I love. Much has happened since that time. It is hard to pin all the different ways I have grown in appreciation of the complexities of teaching and learning and the many challenges and rewards of being a part of purposeful work. It reminds me of my pregnancy and helping my baby grow and learn her first steps. I ate well (perhaps too well), slept little (still do), worried at times, but mainly hoped, made plans, and held her hands until she could walk on her own. One day, my husband and I took her to a daycare center at the college. She was three years old. I was concerned that she might find it distressing to be left alone with strangers. We let her meander about, said we would see her later, and exited to another room where we could watch her, but she could not see us. She looked around, moved about, and soon found things to do and other children to play with. It was a lovely scene. She seemed to know how to explore. Our little girl had grown confident in her steps and ways of discovering little things here, big things there.

She had paint all over her hands. Then it was time to pick her up. She ran – away from us. Let loose, she discovered that there was more to see, more to be. My eyes watered, “But, I’m not ready to let you go. You’re just three!” She ran – toward more play. She found new friends. Eventually, she came back, took our hands, and grew up so more.

It has been three years since the birth of the EDD model, and it has grown. There are other EDD model courses. Another department uses the EDD model templates to build its courses. The course I made has taken on new features. It has grown too. It has played with others. As I reflect on the EDD model pilot years, I recall conversations with colleagues while reviewing and building new courses. I marvel at what springs from love of teaching *and* learning. “I hadn’t thought of that. Wow, that’s a great idea! Let’s go for it. Let’s experiment and see. Let’s see how it affects learning. Let’s see what the data shows,” were things said and felt. There was paint all over our hands.

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## Appendixes

### Appendix A. Interregional Guidelines for the Evaluation of Distance Education

Developed by the Council of Regional Accrediting Commission (C-RAC) (2011)

1. Online learning is appropriate to the institution's mission and purposes.

Analysis/Evidence:<sup>7</sup>

- The mission statement explains the role of online learning within the range of the institution's programs and services;
- Institutional and program statements of vision and values inform how the online learning environment is created and supported;
- As appropriate, the institution incorporates into its online learning programs methods of meeting the stated institutional goals for the student experience at the institution;
- The recruitment and admissions programs supporting the online learning courses and programs appropriately target the student populations to be served;
- The students enrolled in the institution's online learning courses and programs fit the admissions requirements for the students the institution intends to serve;
- Senior administrators and staff can articulate how online learning is consonant with the institution's mission and goals.

2. The institution's plans for developing, sustaining, and, if appropriate, expanding online learning offerings are integrated into its regular planning and evaluation processes.

Analysis/Evidence:

- Development and ownership of plans for online learning extend beyond the administrators directly responsible for it and the programs directly using it;
- Planning documents are explicit about any goals to increase numbers of programs provided through online learning courses and programs and/or numbers of students to be enrolled in them;
- Plans for online learning are linked effectively to budget and technology planning to ensure adequate support for current and future offerings;
- Plans for expanding online learning demonstrate the institution's capacity to assure an appropriate level of quality;
- The institution and its online learning programs have a track record of conducting needs analysis and of supporting programs.

3. Online learning is incorporated into the institution's systems of governance and academic oversight.

Analysis/Evidence:

- The institution's faculty have a designated role in the design and implementation of its online learning offerings;
- The institution ensures the rigor of the offerings and the quality of the instruction;

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<sup>7</sup> These bulleted points illustrate actions, processes and facts that institutions may use to demonstrate that they meet SARA requirements

- Approval of online courses and programs follows standard processes used in the college or university;
- Online learning courses and programs are evaluated on a periodic basis;
- Contractual relationships and arrangements with consortial partners, if any, are clear and guarantee that the institution can exercise appropriate responsibility for the academic quality of all online learning offerings provided under its name

4. Curricula for the institution's online learning offerings are coherent, cohesive, and comparable in academic rigor to programs offered in traditional instructional formats.

Analysis/Evidence:

- The curricular goals and course objectives show that the institution or program has knowledge of the best uses of online learning in different disciplines and settings;
- Curricula delivered through online learning are benchmarked against on-ground courses and programs, if provided by the institution, or those provided by traditional institutions;
- The curriculum is coherent in its content and sequencing of courses and is effectively defined in easily available documents including course syllabi and program descriptions;
- Scheduling of online learning courses and programs provides students with a dependable pathway to ensure timely completion of degrees;
- The institution or program has established and enforces a policy on online learning course enrollments to ensure faculty capacity to work appropriately with students;
- Expectations for any required face-to-face, on-ground work (e.g., internships, specialized laboratory work) are stated clearly;
- Course design and delivery supports student-student and faculty-student interaction;
- Curriculum design and the course management system enable active faculty contribution to the learning environment;
- Course and program structures provide schedule and support known to be effective in helping online learning students persist and succeed.

5. The institution evaluates the effectiveness of its online learning offerings, including the extent to which the online learning goals are achieved, and uses the results of its evaluations to enhance the attainment of the goals.

Analysis/Evidence:

- Assessment of student learning follows processes used in onsite courses or programs and/or reflects good practice in assessment methods;
- Student course evaluations are routinely taken and an analysis of them contributes to strategies for course improvements;
- Evaluation strategies ensure effective communication between faculty members who design curriculum, faculty members who interact with students, and faculty members who evaluate student learning;
- The institution regularly evaluates the effectiveness of the academic and support services provided to students in online courses and uses the results for improvement;
- The institution demonstrates the appropriate use of technology to support its assessment strategies;

- The institution documents its successes in implementing changes informed by its programs of assessment and evaluation;
- The institution provides examples of student work and student interactions among themselves and with faculty;
- The institution sets appropriate goals for the retention/persistence of students using online learning, assesses its achievement of these goals, and uses the results for improvement.

6. Faculty responsible for delivering the online learning curricula and evaluating the students' success in achieving the online learning goals are appropriately qualified and effectively supported.

Analysis/Evidence:

- Online learning faculties are carefully selected, appropriately trained, frequently evaluated, and are marked by an acceptable level of turnover;
- The institution's training program for online learning faculty is periodic, incorporates tested good practices in online learning pedagogy, and ensures competency with the range of software products used by the institution;
- Faculty are proficient and effectively supported in using the course management system;
- The office or persons responsible for online learning training programs are clearly identified and have the competencies to accomplish the tasks, including knowledge of the specialized resources and technical support available to support course development and delivery;
- Faculty members engaged in online learning share in the mission and goals of the institution and its programs and are provided the opportunities to contribute to the broader activities of the institution;
- Students express satisfaction with the quality of the instruction provided by online learning faculty members.

7. The institution provides effective student and academic services to support students enrolled in online learning offerings.

Analysis/Evidence:

- The institution's admissions program for online learning provides good web-based information to students about the nature of the online learning environment, and assists them in determining if they possess the skills important to success in online learning;
- The institution provides an online learning orientation program;
- The institution provides support services to students in formats appropriate to the delivery of the online learning program;
- Students in online learning programs have adequate access to student services, including financial aid, course registration, and career and placement counseling;
- Students in online learning programs have ready access to 24/7 tech support;
- Students using online learning have adequate access to learning resources, including library, information resources, laboratories, and equipment and tracking systems;
- Students using online learning demonstrate proficiency in the use of electronic forms of learning resources;
- Student complaint processes are clearly defined and can be used electronically;
- Publications and advertising for online learning programs are accurate and contain necessary information such as program goals, requirements, academic calendar, and faculty;

- Students are provided with reasonable and cost-effective ways to participate in the institution's system of student authentication.

8. The institution provides sufficient resources to support and, if appropriate, expand its online learning offerings.

Analysis/Evidence:

- The institution prepares a multi-year budget for online learning that includes resources for assessment of program demand, marketing, appropriate levels of faculty and staff, faculty and staff development, library and information resources, and technology infrastructure;
- The institution provides evidence of a multi-year technology plan that addresses its goals for online learning and includes provision for a robust and scalable technical infrastructure.

9. The institution assures the integrity of its online offerings.

Analysis/Evidence:

- The institution has in place effective procedures through which to ensure that the student who registers in a distance education course or program is the same student who participates in and completes the course or program and receives the academic credit. The institution makes clear in writing that these processes protect student privacy and notifies students at the time of registration or enrollment of any projected additional costs associated with the verification procedures. (Note: This is a federal requirement. All institutions that offer distance education programs must demonstrate compliance with this requirement.);
- The institution's policies on academic integrity include explicit references to online learning;
- Issues of academic integrity are discussed during the orientation for online students;
- Training for faculty members engaged in online learning includes consideration of issues of academic integrity, including ways to reduce cheating.

**Appendix B. Andragogical Learner Analysis Tool**

Andragogical principle	Expected influence of					
	Individual and situational differences			Goals and purposes for learning		
	Subject matter	Individual learner	Situational	Individual	Institutional	Societal
1. Adults need to know why they need to learn something before learning it						
2. The self-concept of adults is heavily dependent upon a move toward self-direction						
3. Prior experiences of the learner provide a rich resource for learning.						
4. Adults typically become ready to learn when they experience a need to cope with a life situation or perform a task.						
5. Adults' orientation to learning is life-centered; education is a process of developing increased competency levels to achieve their full potential						
6. The motivation for adult learners is internal rather than external						

Source: Knowles et al., 2015.

### Appendix C. EDD Model Course Evaluation

Question 1	0 pts
<b>Course Overview and Introduction</b>	
<i>Rate to the degree you agree to the following statements, 1 being "Strongly Disagree" to 5 "Strongly Agree."</i>	
Instructions make clear how to get started and where to find various course components.	[ Select ] ▼
Learners are introduced to the purpose and structure of the course at the start of class.	[ Select ] ▼
Course and institutional policies are clearly stated within the course, or a link to current policies is provided.	[ Select ] ▼
Minimum technology requirements for the course are clearly stated, and information on how to obtain the technologies is provided.	[ Select ] ▼
Computer skills and digital information literacy skills expected of the learner are clearly stated.	[ Select ] ▼
Expectations for prerequisite knowledge in the discipline and/or any required competencies are clearly stated.	[ Select ] ▼
The self-introduction by the instructor is professional and is available online.	[ Select ] ▼
Onboarding activities during the first week of class help set students up for success in the course.	[ Select ] ▼
First-week introductions by students to each other help set a sense of belonging.	[ Select ] ▼

Question 2	0 pts
<b>Syllabus and Learning Objectives</b>	
<i>Rate to the degree you agree to the following statements, 1 being "Strongly Disagree" to 5 "Strongly Agree."</i>	
The syllabus has clear course and assignment expectations.	[ Select ] ▼
The syllabus has clear learning goals.	[ Select ] ▼
The syllabus has a clear grading policy.	[ Select ] ▼
The syllabus is organized and easy to follow.	[ Select ] ▼
The weekly learning objectives are clearly stated.	[ Select ] ▼
The assignment's learning objectives are clearly stated.	[ Select ] ▼
The relationship between the materials and learning objectives are clear.	[ Select ] ▼

## Question 3

0 pts

## Routines

Rate to the degree you agree to the following statements, 1 being "Strongly Disagree" to 5 "Strongly Agree."

- The weekly course expectations are clear.
- The weekly routines help me succeed in this course.
- The checklists/assignment guides help me meet assignment expectations.
- The video tutorials help me complete my assignments.
- The assignment reminders help me succeed in this course.
- The rubrics clearly described the standards (criteria) used to evaluate my work.
- Breaking up the project into stages help me create quality work.
- Breaking up the major project into stages help me complete the project.
- The checkpoint - engagement assessments helped me understand my role in my success.

## Question 4

0 pts

## Course Content and Materials

Rate to the degree you agree to the following statements, 1 being "Strongly Disagree" to 5 "Strongly Agree."

- The course text and other materials are appropriate to the stated goals of the course.
- The course text and other materials enhance my learning in this course.
- Canvas discussions enhance my learning in this course.
- The weekly quizzes cause me to read the text.
- The course includes real-world examples and applications.
- I am able to integrate life experiences into course discussions or assignments.

**Question 5** 0 pts

**Instructor Contribution**

Rate to the degree you agree to the following statements, 1 being "Strongly Disagree" to 5 "Strongly Agree."

The instructor takes the time to learn and use the names of students.	[ Select ]
The instructor is responsive to students' needs for clarity.	[ Select ]
The instructor answers student questions promptly.	[ Select ]
The instructor presents alternative explanations to course concepts when needed.	[ Select ]
The instructor provides examples and illustrations to help students understand learning goals.	[ Select ]
The instructor provides extra help when needed.	[ Select ]
The instructor clearly shows interest in students' learning and their success.	[ Select ]
The instructor's feedback enhance my learning in this course.	[ Select ]
The instructor shows enthusiasm for the course content.	[ Select ]
The instructor encourages students to express themselves.	[ Select ]

**Question 6** 0 pts

What aspects of the teaching or content of this class has been particularly good?

Edit View Insert Format Tools Table

12pt Paragraph **B** *I* U **A** **T<sup>2</sup>** | |

**Question 7** 0 pts

What changes could be made to improve the teaching or content of this course?

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12pt Paragraph **B** *I* U **A** **T<sup>2</sup>** | |

**Question 8** 0 pts

Compared to other online courses you have had, describe how the quality of this course differs or is similar. Explain in what ways these helped or hindered your learning.

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12pt Paragraph **B** *I* U **A** **T<sup>2</sup>** | |

Question 9		0 pts
<b>Demographics</b>		
<i>Please choose the characteristics that best describe you.</i>		
Age range	[ Select ] ▼	Choices: Less than 18 years old, 18-25 years, 26-50 years, 51-65 years, More than 65 years
Gender	[ Select ] ▼	Choices: Female, Male, Prefer Not to Say
Race/ethnicity	[ Select ] ▼	Choices: White, Black/African American, Asian, Hispanic/Latinx, Native Hawaiian or Pacific Islander, American Indian or Alaskan Native, Some other race/ethnicity
Number of credits earned at this college	[ Select ] ▼	Choices: Less than 15 credits, 16-30 credits, 31-45 credits, 46-60 credits, 61-90 credits, More than 90 credits
Number of online courses taken	[ Select ] ▼	Choices: This is my first online course, 1-3, 4-10, More than 10
I am very confident in taking online courses.	[ Select ] ▼	Choices: 5 - Strongly Agree, 4 - Agree, 3 - Undecided, 2 - Disagree, 1 - Strongly Disagree
First-generation college student	[ Select ] ▼	Choices: Yes, No, Don't Know

## Appendix D: Pre-Student Focus Group Survey

Survey Tool: Survey Monkey

### Online Courses and Student Perceptions

1. How many online courses have you taken thus far?

- 0-1
- 2-5
- 6-10
- 11 or more

\* 2. What top 3 factors positively affect your ability to succeed in online classes? Please explain your points.

\* 3. What top 3 factors negatively affect your ability to succeed in online classes? Please explain your points.

\* 4. Please rate the degree to which you agree with the following course design statements. All references to courses are for courses with online components (e.g., 100% online, hybrid (part-online, part face-to-face)).

	Highly agree	Agree	Neither agree nor disagree	Disagree	Highly disagree
All courses within a program/discipline should be similar in navigation, organization, and course policies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All course modules (e.g., in Canvas) and assignment deadlines should be published at start of class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

All assignments should have rubrics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All sections of a course (e.g., 5 classes of MNGT 186) taught by different instructors should be consistent in content and quality.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All students should take an online orientation before taking their first online class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consistent course routines help me regulate time required to fulfill class expectations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 5. Please rate the degree to which you agree with the following statements. All references to courses/classes are for courses with online components (e.g., 100% online, hybrid (part-online, part face-to-face)).

	Highly agree	Agree	Neither agree nor disagree	Disagree	Highly disagree
I am confident in my abilities to take actions in order to attain my goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of clear connection between course purpose, objectives, and assignments confuse me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I regulate my time well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of a clear and consistent course structure negatively affects my motivation to learn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regular student to teacher communication is important in my success in online learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I am a confident online learner.

It is important to me to make social connections with my peers in class.

\* 6. Fill in the blank to complete the sentence.

Great variance in structure, organization, and course policies across classes in a program is .....

\* 7. What is your gender?

- Female
- Male
- Prefer not to say

\* 8. What is your age?

- 18 to 24
- 25 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65 and older

\* 9. Which of the following categories best describes your employment status?

- Employed, working full-time
- Employed, working part-time
- Not employed, looking for work
- Not employed, NOT looking for work
- Retired
- Disabled, not able to work

\* 10. What is your race or ethnicity?

- Asian
- Black or African American
- Hispanic or Latino
- Middle Eastern or North African
- Multiracial or Multiethnic
- Native American or Alaska Native
- Native Hawaiian or other Pacific Islander
- White
- Another race or ethnicity, please describe below

Self-describe below:

## Appendix E: Semi-Structured Student Focus Group Question Themes

To abide with CDC COVID-19 Pandemic Protocols, the focus group was conducted via Zoom, a virtual meeting platform. The semi-structured nature of the interview format explored the following themes in an open dialogue with focus group participants.

- Reasons for choosing online classes
- Perceptions of quality in online learning
- Motivation in online learning
- Behaviors in online learning
- Perceptions of what it takes to be successful in online learning
- Observed differences between EDD model courses and non-EDD model courses

### Sample Questions

- What are your reasons for taking online learning?
- What affects your motivation in online learning?
- In online learning, how would you define quality?
- What affects your ability to persist and pass online classes?
- Describe your first online learning class. What was it like?
- Describe features of online courses that help you learn the course materials?
- Describe features of online courses that hinder your learning the course materials?
- What online learning design features do you think should be standard in a program?
- What are design features common across the classes that helped you succeed?
- What explains your level of interaction in these courses versus other courses not similarly designed?
- What are significant features present in this course that are not in others?
- To what degree did these features affect your learning or success in class?
- What questions do you have?

### After showing a course designed using the EDD model, the following questions were asked

- Is this course more or less the same, different, and in what ways than other courses?
- What do you think the value, if any, of courses designed like this to students?
- How is this course different than other courses you've taken?
- In what ways, if any, do features of this course help you persist in the course?
- In what ways, if any, do features of this course keep you from persisting in the course?
- What do you think the value, if any, is having a consistent structure, organization, courses policies might be, if any, in a program?
- What do you think the minimum teachers should offer students to be successful in online learning?

## Appendix F: Faculty, Staff, and Administration Semi-Structured Interview Questions

The following is a pool of questions used during the semi-structured interviews via Zoom, a teleconferencing platform. The interviews lasted about an hour each. Except for the first question below, I varied the order of questions and added non-sequitur topics to limit question order bias. I skilled questions that were not relevant to the participant. It was not uncommon for answers to cover more than one question, in which case I asked another question. Given the free-flowing nature of the conversations, I asked follow-up questions to unpack answers.

- For the record, please state your name, your position in the college, the number of you've taught, and what percentage of your normal load is delivered face-to-face, hybrid or online?
- Did you attend the EDD training in 2019?
- Prior to using the EDD model, what typically does the course development process entail?
- Please describe the Equity by Design and Delivery model.
- Please describe the EDD course development processes?
- As you understand it, what is the aim of the EDD model?
- What do you understand the EDD course development process to be like?
- Have you built courses using the EDD course development process?
- Please describe EDD master courses.
- Have you built courses using the EDD templates?
- Which EDD build courses have you used to teach your courses?
- What would you say are the pros and cons of using EDD master courses?
- Please describe the 80/20 principle?
- What are your thoughts about the 80/20 principle?
- How do you think the EDD master courses has changed behaviors within the department, if at all?
- How has it affected the way you build or think about your non-EDD courses?
- How do you think the use of the EDD course development process would affect faculty behavior (over time)?
- What do you think are the pros and cons of using the EDD course development process and the EDD master courses?
- What have you observed as differences in faculty behavior prior to and after to pilot of the EDD model, course development processes, and the resulting master courses?
- How has the use of EDD master courses affected (your) teaching?
- What do you believe are perceptions by students of the EDD master course?
- What has faculty done differently now that we have the EDD model and the templates?
- How do you think the EDD model courses have affected student learning?
- How are the EDD courses different than non-EDD courses?
- What do you think the overall value, if any, of the EDD courses to student learning?
- What do you think the value, if any, is of the EDD courses to new online learners?
- What do you think the value, if any, is if all the courses in the program were designed using the EDD CDP, inclusive of the use of the templates?
- Which students, if any, do you think would most significantly benefit from courses built using the EDD model?
- As an adjunct faculty, what are the advantages/disadvantages of using EDD master courses?
- Is there anything you would suggest we do going forward in the EDD model? Ideas on what we can do better?
- Any questions for me?