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## Understanding and Application of Systems Thinking to Diversity Challenges at Higher Education Institutions

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UNDERSTANDING AND APPLICATION OF SYSTEMS THINKING TO DIVERSITY  
CHALLENGES AT HIGHER EDUCATION INSTITUTIONS

by

Odell Jones

A dissertation submitted in partial fulfillment of  
the requirements for the degree of

DOCTOR OF MANAGEMENT

in

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in the

School of Business

of

THOMAS JEFFERSON UNIVERSITY

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UNDERSTANDING AND APPLICATION OF SYSTEMS THINKING TO DIVERSITY  
CHALLENGES AT HIGHER EDUCATION INSTITUTIONS

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2023

## ABSTRACT

This research argues that establishing and sustaining leadership diversity within Higher Education Institutions (HEIs) is a complex-systems challenge and that those responsible for leading efforts to establish and sustain diversity, referred to as DEI leaders, should adopt a mindset of systems thinking and apply problem-solving methods and tools informed by systems thinking. Semi-structured interviews with DEI Leaders at HEIs were conducted regarding background and perceptions of their work, and how they thought about and made choices concerning diversity challenges. Interview questions were designed to gain an understanding of the degree to which these leaders think about DEI and if they approach these problems from a systems perspective and use system-informed methodologies and tools. Results indicated that DEI leaders acknowledged diversity to be a challenging problem but there was little understanding that this kind of problem was either complex or systemic. Furthermore, DEI leaders relied on conventional linear formulations and problem solving because they did not know how to think in systems or use methods and tools derived from this mode of thinking. Implications suggest that those responsible for leading efforts to establish and sustain diversity within HEIs rely on methodologies and tools which are insufficient to solve complex DEI problems. Recommendations are made for education to help DEI leaders to adopt a mindset of systems thinking and apply problem solving methods and tools informed by this mode of cognition.

## **DEDICATION**

This dissertation is dedicated to my beautiful wife Sa'Trina whom I would not have been able to complete without her love and support. I also dedicate this to my late parents Odell and Evelyn who instilled in me the determination and drive to always keep learning. I love you and miss you.

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# CHAPTER 1

## INTRODUCTION

### Overview

The volatile, uncertain, complex, and ambiguous (VUCA) characteristics of 21<sup>st</sup> century work contexts and environments place a premium on ensuring a robust leadership pipeline. Identifying and selecting the best and most appropriate potential leaders for a particular enterprise are critical strategic objectives for ensuring a sustainable organization (SHRM, 2016). One metric of value is diversity: organizations with diverse makeup benefit from many different experiences and perspectives which are characteristics that can be correlated to more success and better leadership (2U, 2017).

In a series of reports from 2015 to 2020, *Forbes* investigated the business case for diversity. Citing these, Dixon-Fyle, Dolan, Hunt, and Prince (2020) argued that the business case for diversity has remained strong. Indeed, the relationship between diversity on executive teams and the likelihood of financial out-performance was stronger in 2020 than in previous years. This relationship was presented in the first report, *Why Diversity Matters* (Hunt, Layton & Prince, 2015) as direct and linear such that increased racial and ethnic diversity produced better financial performance; specifically, organizational earnings increased 0.8 percent for every 10 percent increase in racial and ethnic diversity on the senior-executive team. The authors did not explain the details of this association but offered factors to help support a positive relationship between diversity and better outcomes.

The effect of diversity on profitability was better understood as linear and causal using additional arguments according to Hunt, Layton, and Prince (2015). Recruiting the best talent

was the most influential factor, followed by greater customer orientation, growing employee satisfaction, and improving decision making. The author(s) did not say why but offered other factors to help support the causal relationship between diversity and better outcomes.

Using the non-academic business sector as an example, it is reasonable to generalize that diversity at the executive level would also benefit financial performance generally and profitability specifically within higher education institutions (HEIs). While the *Forbes* reports sampled corporations but did not include HEIs, I believe industry and academia can equally benefit from diversity and can learn from the other. Although there are fundamental operating differences, both organizational systems rely on individuals with common qualifications and personalities. In a 2018 article, Shayna Joubert discusses one of the most significant decisions scientists face when deciding whether to pursue a career in industry or academia. The article contrasts eight differences of working in industry versus academia. Responsibility, Flexibility, Collaboration, Workplace Culture, Individual Impact, Intellectual Freedom, Salary, and Career Advancement. Understanding the nuances and considering what capabilities, qualifications, personality, and career goals are essential.

Responsibilities in an academic research career have some version of the following, applying for grants, conducting self-directed research, publishing papers, teaching courses, mentoring students, and performing departmental service. While "industry" encompasses all research outside of universities, the term can refer to many things. Professionals can work for small biotech startups, mid-sized corporations, or even international companies with thousands of employees in this field. The scope of work is geared toward applied research that will have a direct therapeutic effect. In addition, industry work requires a more business-oriented approach (Joubert, 2018).

Flexibility, for some, one of the benefits of working in academia is the ability to set your own schedule. You decide when to teach, conduct research, and publish your work. However, you also must be proficient in time management and prioritizing, since you will not have to answer anyone about how you use your time. Research lab hours in a business organization tend to be much more structured and follow a 9-to-5 schedule. For some people, this kind of structure increases productivity (Joubert, 2018).

Academic research is collaborative. Research and cross-disciplinary thinking are highly encouraged in an academic environment. However, you can also enjoy a great deal of autonomy, allowing you to choose when to collaborate and with whom. Research in the industry sector is aimed at a more broad, shared goal. For example, a complex process such as drug discovery often involves collaboration across multiple functional areas and disciplines (Joubert, 2018).

Work culture also presents clear distinctions, researchers in academia are highly focused on research and discovery, and much research is conducted in the interest of learning rather than for clinical application. On the other hand, research in the "industry" helps researchers feel an immediate impact on patients. Each workplace has its requirements and pressures, as well. Scholars are under tremendous pressure to be independent, publish regularly, and promote and advocate for their research. The pressure on researchers in academia is often to "obtain funding and publish or perish." Industry pressures tend to be more deadlines driven. Teams work toward integrating science and business problem solving on tight project timelines in conjunction with more extensive product and business goals. Hence, communicating effectively and having good people skills are crucial for people working in industry. Additionally, industry and academia operate on quite different time schedules. Academic timelines, in contrast to drug development's

fast pace, are typically longer and more focused on long-term goals and education (Joubert, 2018).

Academics typically do not have quarterly deadlines to meet, monthly reports to file, or a superior to answer directly. Consequently, you may have a more significant impact on your work and receive recognition than you would in industry where you are a single member working on behalf of an organization. However, on the flipside, academics can have difficulty getting their ideas adopted in practice, whereas business goals often drive industry researchers. The ability to work in industry requires one to share credit and work on a team. This teamwork aspect can also take off some of the pressure to achieve results individually. Even though this removes a measure of autonomy, the positive aspect is that research results are often immediately and directly impactful (Joubert, 2018).

Academic professionals have intellectual freedom, free from the constraints of short-term deadlines and the demands of those who set research priorities. By doing so, people can choose what they want to spend their time researching and how to pursue it. But this freedom is also accompanied by the responsibility of getting funding and resources. Work is done on a short timeline and is driven by a product or business objective in industry. Having clear directions may appeal to some researchers, while others may perceive them as a hindrance to exploring their areas of personal interest. A benefit of working in industry is that the larger organization will supply the funding and more state-of-the-art resources (Joubert, 2018).

In general, an academic research scientist's career moves toward tenure and professorship or being recruited as an academic staff scientist. If you achieve tenure, however, your job security is high. In some cases, it may be challenging to climb the career ladder if only a few universities offer programs related to your discipline or if there are few employers hiring.

However, the career options in the industry are broader and range from research at the bench to product marketing and development. In industry, you can also climb the organizational ladder to manage larger teams and projects (Joubert, 2018).

Each environment has its specific pressures and demands. In academia, researchers are often under pressure to do two things: obtain funding and publish or perish. This puts academicians under the burden of beginning their research, publishing continuously, and promoting their work.

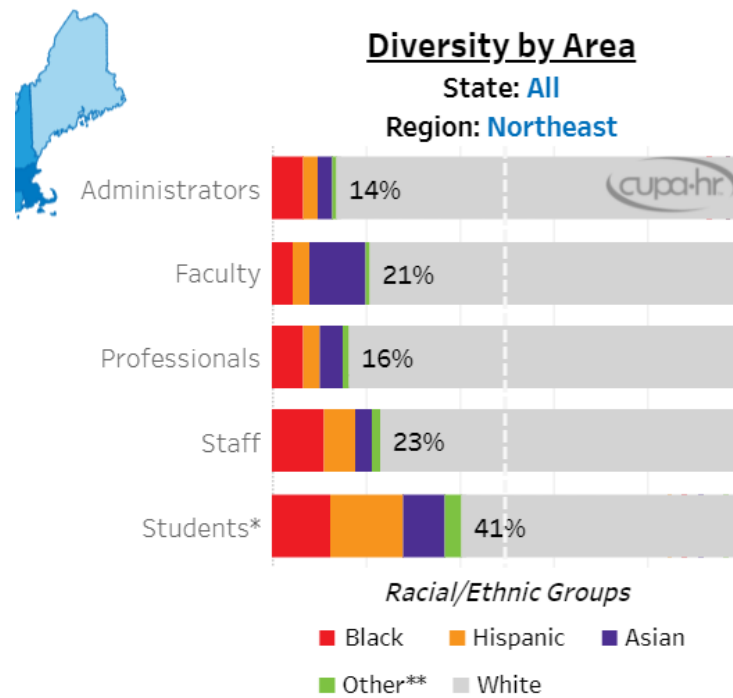
The pressures in industry are typically more deadline-driven, as teams strive to solve problems based on science and business based on tight timelines in accordance with larger product and business goals. Thus, it is crucial for people working in industry to be excellent communicators and have sharp people skills to manage projects (Joubert, 2018). In the end, people in both sectors value the same things. Employee experiences of inclusion influence engagement and retention. Employees experience inclusion at work when they feel valued, trusted, authentic, and psychologically safe. When employees feel included and that their employer supports diversity, trust in their company increases, and employee engagement increases. (Dixon-Fyle, Dolan, Hunt, & Prince, 2020).

### **Diversity in Higher Education Institutions (HEIs)**

Wolfe and Dilworth (2015) stated that trends in colleges and universities have often undermined access and opportunity for many minorities in higher education, which may explain the continued low overall percentage of minorities employed in executive leadership positions. In an article published by the Colleges and University Professionals Association (CUPA-HR, 2017) the professional association for HR professionals in higher education, 14 percent of higher

education administrative positions, including top executives, administrative officers such as controllers, division heads, department heads, deans, and associate deans, were held by people of color: Black staff members held 7 percent; Hispanic or Latino people held 3 percent of those jobs; 2 percent were held by Asians, and 1 percent who held these roles identified as another race or ethnicity. The majority, 86 percent of administrators, self-identified as white. The article also noted that while minority representation among higher education administrations has increased, the change has been slow and small. In 2001, 1 percent of HEI administrators were members of racial or ethnic minority groups compared to 14 percent in 2016. The most recent data (2020-2021) within the northeast region of the US, according to CUPA-HR (2021) is that diversity within HEIs remains at 14% for administrators (Figure 1).

Figure 1. Northeast Regional HEI Diversity



The 21st century is challenged with problems and opportunities that are characterized as VUCA, an acronym for Volatile, Uncertain, Complex, and Ambiguous. The concept of VUCA was informed by research from Warren Bennis and Arthur Burt in their leadership theories in 1987. The acronym was first introduced by the US Army War College in military education to refer to how the world was perceived at the end of the Cold War between the US and Soviet Union (Stiehm & Townsend, 2002). That volatile, uncertain, complex, and ambiguous changes are affecting work, technology, management practices, and health systems most recently due to COVID-19, continue to challenge problem solving and decision making by leaders operating in these contexts-(Rathore, Meera, Solanki, Shweta & Sharma, 2021).

The term *volatility* is commonly used in statistics and financial theory. Volatility can be defined as a statistical measure describing the amount of uncertainty about the size of changes. Statistics can be quantified by the standard deviation or variance (Volatility n.d., 2014). Organizational examples include increasing price fluctuations on global raw material markets or stock markets. High volatility can produce significant jumps of values over time, which can be seen as an indicator of the increasing pace of the environment (Kail, 2010).

With the increased volatility within the environment, the future becomes increasingly uncertain. While in the past, statistical regression models were applied to predict the future, it becomes increasingly challenging to extrapolate future developments and link them with a probability distribution. Uncertainty can also be described as a lack of clarity to evaluate a situation properly to identify challenges and opportunities (Kail, 2010).

In an interconnected and networked environment, it becomes more difficult to connect cause and effect which limits the value of linear causality. One definition of (structural) complexity is a situation where the interconnectedness of parts and variables is so high that the

same external conditions and inputs can lead to vastly different outputs or reactions of the system. An organizational example includes the inter-organizational alliance networks where the same information can cause different outcomes at other times (Kail, 2010).

Ambiguity is characterized by causal relationships that are unclear (Bennett & Lemoine, 2014). The meaning or interpretation of a situation cannot be definitively resolved according to a rule or process consisting of a finite number of steps (Bennett & Lemoine, 2014). As business decisions become increasingly ambiguous, there is often more than one solution to a problem, and there is no analytical process to decide which option should be chosen. If one asks different people to evaluate a specific situation and plans for action, one will get other answers that would be equally valid (Kail 2011).

Contextually, Bennett and Lemoine (2014) present the VUCA elements within the context of an action-oriented analysis, as a portfolio with two dimensions, one concerned with the knowledge of the situation and the other with the predictability of intervention (Figure 2). There are different contexts in which different approaches are successful, depending on complexity, volatility, ambiguity, and uncertainty. Although this might be an effective way to have a simple VUCA framework to give pragmatic advice to leaders, another way of looking at the VUCA phenomenon is to consider complexity the key concept and see the other elements as the consequences of complexity.



Figure 2. VUCA elements within context.



The concept of complexity has many perspectives (Mitchell, 2009). One is that complexity may be described as a property of a complex system which is defined as one with many system elements, and many dynamic interactions between them. As there is a higher degree of variety in a system with a greater number of elements, variety is one characteristic of complexity (Dittes, 2012). As Holland (2014) points out, "complex behavior is characterized by the emergence of the whole over the sum of its parts." When multiple elements interact, and the behavior is influenced by memory or feedback, the interactions become nonlinear (Holland

2014). Moreover, in a nonlinear system, volatility and uncertainty can be observable consequences of complex systems or situations.

### **Complex Context, HEIs and Diversity**

The COVID-19 global pandemic, a crisis of immense proportion, disrupted and threatened the lives of tens of millions of families and directly led to the death of more than 800,000 Americans (University of Oxford, 2022). The requirement for social distancing that increased remote work where people interact via technology-mediated virtual channels has created a crisis of human contact in delivering education services from kindergarten to college. Absent or reduced face-to-face contact has also disrupted the delivery of millions of workplace services and consumer industries, including food, travel, and entertainment. The longstanding incidence and recent reports of police brutality and economic and ethical social inequality and inequity have coproduced and increased political and civil unrest to crisis levels in many US communities.

The trilemma of these challenges and of the interactions among these complex contextual forces – the crises of individual and community health, education delivery disruptions and changes, and conflicts of social rights and obligations - have coproduced multiple implications and emergent new challenges within higher education. One is that diversity, equity, and inclusion (DEI) has emerged as immediately critical and relevant. DEI is now a critical part of both risk management and strategic planning, however in the field of higher education DEI efforts are often focused only on students. To remain relevant for generations to come, institutions must be proactive in taking steps to ensure they foster diversity, equity, and inclusion for all institutional populations (CUPA-HR 2021).

Striving for diversity and inclusion requires acknowledging, and understanding that individuals are unique, and offering perspectives based upon their experiences (Chavez, Guido-DiBrito, & Mallory, 2003). Regarding HEIs, Williams (2013) noted that diverse campuses are characterized as where individuals feel valued, included, and can freely interact with people who have diverse cultural backgrounds, races, beliefs, sexual orientations, socioeconomic levels, ages, genders, abilities, political opinions, and ideologies. Inclusive campuses exist when traditionally marginalized individuals and groups feel a sense of belonging and are empowered to participate as full and valued members of the community. In addition to adding value, a diverse community brings innovation and better solutions to existing problems. Diverse teams and individuals promote growth and innovation in any organization. Diversity is not just good moral practice; it is good for the academic mission as well.

The complexity component of VUCA takes on a variety of meanings and implications in part depending on the academic domain in which it is applied, e.g., mechanical, biological, ecological, and social/organizational. A complex mechanical device, for example, may have many interconnected and interdependent parts designed to function in a particular way by a manufacturer. In a complex organization, however, the parts are people who have their own interests and purposes that may apply to situations beyond what the organization desires of them. Indeed, researchers have offered different conceptions of complexity that have been summarized by Jackson (2020):

Some concentrate on the complexity they see as existing in the world—on “ontological complexity.” Others highlight “cognitive complexity”—the complexity they see arising from the different interpretations of the world held by observers. Others recognize the

added difficulties flowing from the interactions between “ontological” and “cognitive” complexity (p. 52)

The results of a deliberately controlled environment may be unexpected because of the non-linear interaction and interdependencies within distinct groups and categories (Axel Schick, Hobson & Ibisch, 2017).

Jackson’s (2020) perspective addresses how to perceive and understand complex situations and context. To make choices, function and thrive in a VUCA environment, however, requires methodologies that guide interventions and actions. But to do this requires that a leader (and followers) be reasonably certain that a problem or opportunity is complex, which was a central purpose of the research of David Snowden and colleagues. The Cynefin framework is a tool for leaders to use in their decision making (Snowden & Boone, 2007) that can help discern the context characteristics in which a challenge exists. The Cynefin framework is described as a “sense-making framework that is socially constructed from people’s experience of the past and their anticipated futures” and “the Cynefin framework is a sense-making one and is normally created as an emergent property of social interaction. One of the reasons for this is the need to root any sense-making model in people’s own understanding of their past and possible futures” (Snowden & Boone, 2010, p. 5).

Cynefin is a conceptual framework created in 1999 used to aid decision making (Snowden 2014). The context is used to describe understanding of the evolutionary nature of complex systems and their inherent uncertainty (Dalcher, 2018). Translated to *habitat* or *place* in English, Cynefin is meant to be a reminder that human interactions are primarily emergent and influenced by both personal and collective experiences (Dalcher,2018). There are four

environments or contextual domains each with recommended approaches to navigate within them (Figure 3 and Figure 4).

Figure 3. Cynefin Framework (Snowdon & Boone, 2007)

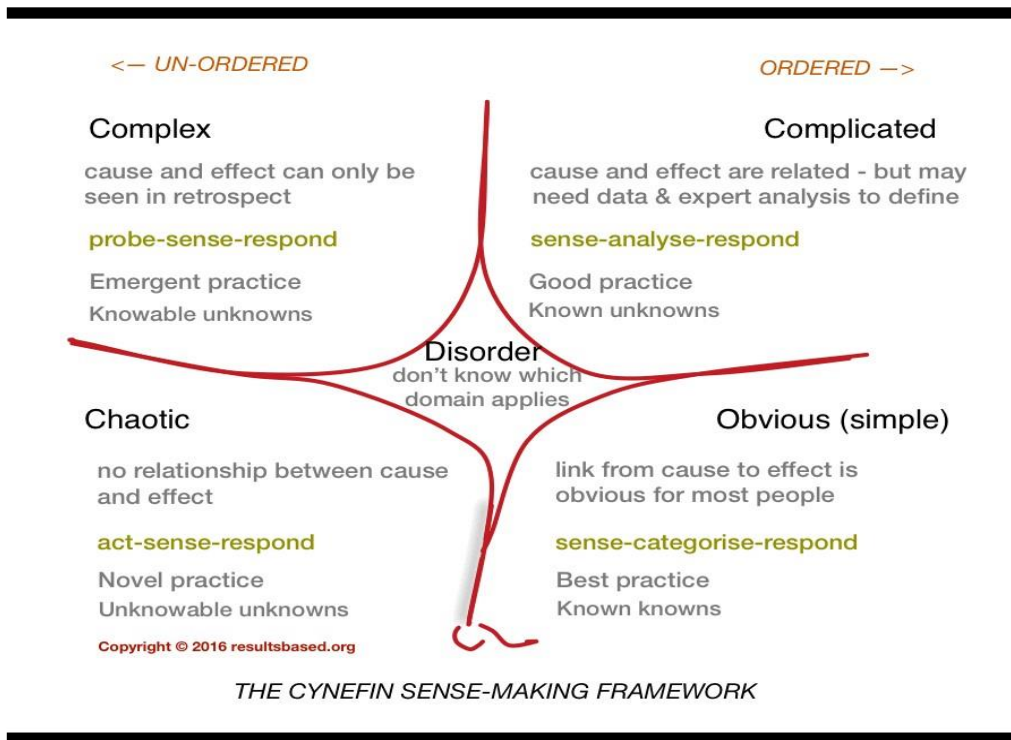
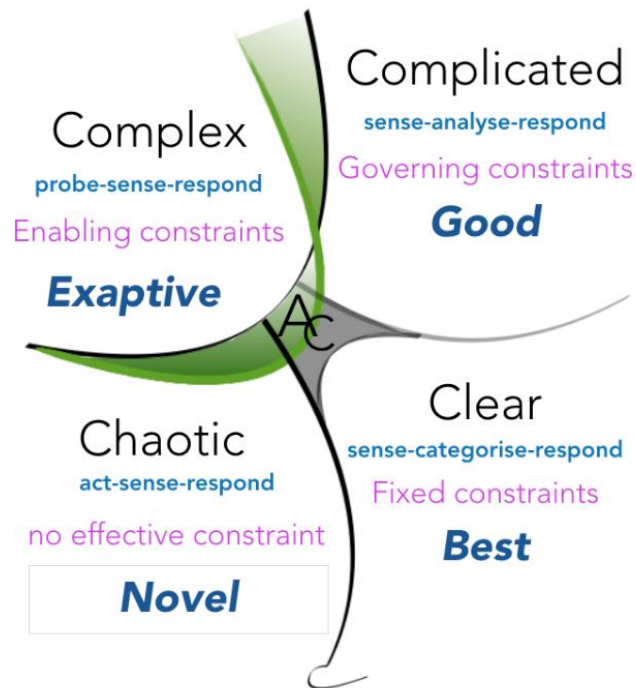


Figure 4. Updated Cynefin Framework (Snowdon, 2020)



Based on the nature of the relationship between cause and effect, the framework suggests that the issues facing leaders may be understood within five contexts. Leaders must determine which of these four situations they need to act in contextually appropriate ways: simple (also referred to as obvious or clear), complicated, complex (also referred to as exaptive), and chaotic. In the fifth context, the word disorder is applied when it is unclear which of the other four contexts will prevail (Snowden & Boone, 2007; Snowdon, 2020).

Within ordered and well-structured contexts are two problematic or opportunistic domains. One is simple or obvious in which there are knowable knowns and for which a decision maker should follow a sequence of sense-categorize-respond. This kind of situation has well-established linear links of cause-and-effect and is repeatable like a baking recipe which enables best practices to be applied for a solution.

The obvious or simple context of the situation does not require much from a leader when it comes to making decisions. In general, routine problems have a clear cause-and-effect relationship, as well as solutions that are obvious and undisputed. In this scenario, a leader senses, categorizes, and reacts to the situation (Snowden & Boone, 2007). Obvious contexts are characterized and can be understood by anyone. There is often little doubt that the correct answer is obvious. All parties understand the decision in this realm of "known unknowns." For example, addressing issues related to order processing and fulfillment at a call center usually belong here since they are less subject to change (San Juan, 2012).

Snowden and Boone (2007) state that the obvious context should be straightforward and easily managed where leaders can "sense, categorize and respond." However, there is an opportunity for problems to arise.

First, issues may be incorrectly classified within this domain because they have been oversimplified. Leaders who constantly ask for condensed information particularly run this risk regardless of the situation's complexity.

Second, leaders are susceptible to entrained thinking, a conditioned response that occurs when people are blinded to new ways of thinking by the perspectives they acquired through experience, training, and success.

Third, leaders often become complacent when things appear to be going smoothly. If the context changes at that point, a leader is likely to miss what is happening and react too late. This shift can bring about catastrophic failure. In the exhibit "The Cynefin Framework," the simple domain lies adjacent to the chaotic and for a good reason. The most frequent collapses into chaos occur because success has bred complacency.

The other ordered and structured domain is referred to as complicated. This kind of problem also exhibits linearity although the links may not be obvious so require decision makers who have experience and expertise to determine good practice for known unknowns. Complicated problems are addressed through the sequence of sense-analyze-respond where there is significant use of research-informed analytic thinking including the search for a root cause to make decisions and to “fix” problems.

In complicated contexts, cause-and-effect relationships exist, but may not be obvious to everyone. This type of situation requires expertise who can discern these relationships and provide “good practice” to solve difficult problems. In some cases, the experts are guilty of entrainment because they do not consider the opinions and ideas of non-experts (San Juan 2012).

Unlike simple contexts, complicated ones may provide multiple correct answers, and though there is a clear connection between cause and effect, not everyone can see it. Snowden and Boone (2007) stated within is the realm of "known unknowns." While leaders in a simple context must sense, categorize, and respond to a situation, those in a complicated context must sense, analyze, and respond. If a car's engine is knocking, a driver may know that something is wrong, but he needs to take it to the mechanic to diagnose the problem.

Since the complicated context calls for investigating many options, many of which may be excellent, a good practice approach is more appropriate than a best practice approach; Snowden and Boone (2007) wrote that the traditional approach to engineering a new cell phone might emphasize feature A over feature B, but an alternative plan—emphasizing feature C—might be equally valuable.



It is also challenging to avoid entrained thinking in complicated domains, but it is the experts rather than the leaders who are most susceptible to it, and they tend to dominate the domain. Consequently, nonexperts may overlook or reject innovative suggestions, resulting in missed opportunities. It is the leader's responsibility in this situation to engage other stakeholders and ideas (Snowden & Boone 2007).

Complicated domains can often take a long time to resolve, and there is often a trade-off between finding the right solution and just deciding. If, however, the answer is hard to come by and decisions must be based on incomplete data, the situation is probably more complex than complicated (Snowden & Boone 2007).

Within unordered and poorly structured contexts are problematic situations that may be complex or chaotic. This kind of problem is non-linear and non-proportional; something that happened in the past and today may not occur tomorrow, and expending dedicated effort to a problem does not mean it will be effectively addressed. In this context, situations, variables, and results are volatile, uncertain, complex, and ambiguous, which means there is no consistently valid prediction method. Complex problems are challenging because there are no experts or good or best practices; rather, solutions to problems must emerge from the interaction of several elements, some of which may have not been previously considered. One must probe the situation, which means engaging in small experiments several times to see what works, attempting to sense or discover a pathway that can lead to a response. This problem context characterizes all organizational cultures and relationships, including diversity, equity, and inclusion. In challenges of this kind – where the situation is unordered and dynamic, which demands emergence over expertise – as noted by Jackson (2019), "systems thinking is the only appropriate response to complexity (p. xix)."

The complexity context is characterized by unpredictable change. Groves and Vance (2015) have noted that nonlinear thinking style compared to linear thinking style is preferred for decision making and problem solving in complex situations.

The solution may not be obvious, and in this kind of context there is no discernable relationship between cause-and-effect relationships in situations. As Snowden and Boone (2007) state, Complex contexts are often unpredictable, which is why it is important to "Probe - Sense - Respond." Rather than attempting to control the situation or impose a predetermined approach, it is more effective to be patient, look for patterns, and encourage emergent outcomes.

An example of complexity is the return to work after COVID-19 where situations are constantly changing. Even with guidance, an effective strategy requires a multidisciplinary approach to implement a gradual return to work to minimize risk (Canada School of Public Service, 2020). Snowden and Boone (2007) stated:

As in the other contexts, leaders face several challenges in the complex domain. Of primary concern is the temptation to fall back into traditional command-and-control management styles—to demand fail-safe approaches with defined outcomes. Leaders who do not recognize that a complex domain requires a more investigational method of management may become impatient when they do not seem to be achieving the results, they were aiming for... If they try to overcontrol the situation, they will preempt the opportunity for informative patterns to emerge... Leaders who try to impose order in a complex context will fail, but those who set the stage, take a step back, allow patterns to emerge, and determine which ones are desirable will succeed.

Another example is leading a collaborative workshop to design a non-traditional doctoral program based upon a trans-disciplinary Systems Thinking based curriculum that develops leadership competencies across broad domains of knowledge and practice rather than within one. Workshop participants included not only faculty and administration but also a wide range of users. All of whom would directly integrate their own interests and values into a program in which faculty would want to teach and students would want to learn. The diversity of the stakeholders presented many differing as well as overlapping thoughts leading to a vast array of potential curriculum characteristics.

If a leader fails to recognize that a problem's context is complex and mistakenly applies simple or complicated analytic improvement methods and tools, these efforts will likely fail and can make the problem worse. This is because a problem in a complex context is *qualitatively* different from one that is in a complicated context (Starr, 2020a). As explained by Goldstein, Hazy and Lichtenstein (2010, p. 3 as cited by Starr 2020a):

Until recently the differences between complicated and complex were not well understood; as a result, they have often been treated in the same way, as if the same process should be used to “deal with” situations (or concepts) that are complicated or complex. Business schools justified this by treating organizations as if they were machines that could be analyzed, dissected, and broken down into parts. According to that myth, if you fix the parts, then reassemble and lubricate, you will get the whole system up and running. But this is exactly the wrong way to approach a complex problem.

When the context is unordered and unstructured, it may occasionally be characterized by chaos, the only appropriate response for which is to identify how the situation can be made

more stable and then converted first to a complex system, then into a complicated one. Shocks to the entire environment, like a novel coronavirus that shuts down most or all academic teaching operations, create a situation that demands a novel solution. Complex systems are challenging enough, but chaotic contexts require leading through the "unknowable" and often the "un-understandable." These are not times to be patient and seek patterns; it requires leaders to "stop the bleeding." Searching for the right answer is pointless. Leaders must "first act to establish order, then sense where stability is present and from where it is absent, and then respond by working to transform the situation from chaos to complexity (Snowdon & Boone, 2007)." Rapid responses are required.

In a chaotic environment, it can be difficult for a leader to succeed; sometimes, they might develop a narcissistic view of the world. One example is Rudy Giuliani's handling of 9/11. Furthermore, his inability to change his management style when the situation is not chaotic could be a concern. Snowden and Boone (2007) discussed Rudy Giuliani's exceptional ability to regain order despite chaotic circumstances by issuing directives and implementing actions. Despite this, when he served as mayor, one of the most complex jobs in the world, he was widely criticized for adhering to the same top-down leadership style that proved so effective during the disaster... Indeed, a specific danger for leaders following a crisis is that some of them become less successful when the context shifts because they are not able to switch styles to match it.

The chaotic domain can be an excellent place for leaders to drive innovation despite its chaotic environment. The people in these situations are more open to novelty and directive leadership than in other conditions (Snowden & Boone 2007).

Snowden and Boone (2007) proposed an interaction of two important leadership concerns. One is that the challenges faced by a leader should first be examined and understood in terms of its context. Second, is that leaders must be reflective of how they frame their problems and how they make decisions when the context changes. This means instead of asking, “What should I do about this problem?” the leader should ask, “In what kind of context is this problem located?” and “What kind of problem is this?” This is a change in the fundamental framework for ordering, perceiving, and understanding reality. Answering these context questions helps to inform how to approach the problem and how to select a method of intervening (Starr, 2020, p. 13).

The complex nature of social and organizational diversity places organizations in a paradoxical situation where diversity is both a great opportunity and a problem (Duchek, Raetz & Scheuch, 2020). If diversity in HEI were a linear and an additive analytic concept, then one assumes  $A + B + C = \text{diversity}$ . However, this is an inadequate formulation. Anand (2019) stated the concept of diversity is highly complex and impacts nearly every aspect of one's life. Diverse individuals do not always fit neatly into the same category; Anand defines diversity as a mix of people's intricate and evolving ways of learning to navigate decision-making, not as a simple combination of reductive classifications that can be placed into a box and checked off.

Diversity encompasses every aspect of life and is extraordinarily complex. Romero-Morgan (2020) reports the DEI world grows increasingly complex and more difficult to navigate. For example, there are emerging different acronyms such as DEIA (diversity, equity, inclusion, anti-racism) and REDI (race, equity, diversity, and inclusion) with important differentiations between them. Moreover, if diversity is a complex problem and HEIs are complex contexts, then a non-linear and systems approach is appropriate to formulate the challenges and to inform

methods of intervention and problem solving. In this complex environment, then  $A \times B \times C \rightarrow$  co-produce and enable the emergence of diversity (Starr, 2020; Anand, 2019).

As Jackson (2019) argues, when in a complex context, systems thinking is the appropriate mindset. In social science terms, a system is a whole with purposeful parts that are interdependent, and which has a central purposeful property that defines it. A system may have subsystems with relationships to one another that are distinct from their relationships with other factors. A system also has a larger containing system of which it has relationships. For example, an HEI in Philadelphia may be understood as a system with many departmental and functional subsystems and which is part of the larger community of HEIs and of the industries and organizations making up the city of Philadelphia.

Many definitions propose or assume that complexity expresses numerous factors in a system and multiple forms of relationships among the elements (Johnson, 2001). A key characteristic of a complex system is that such a system cannot be understood to function from a linear perspective but rather should be viewed as non-linear and emergent into structured behavior at the edge of chaos (Teerikangas & Hawk, 2002).

The prevailing understanding of diversity is in the structured and complicated context of physical or visible representation, such as race, ethnicity, gender, sexual orientation, socio-economic status, disability, and so on, and focused more quantitative elements rather than focusing on qualitative differences (Romero-Morgan, 2020). However, Diversity is both broad and complex. A broader definition encompasses many attributes, both seen and unseen. They range from personality, culture, and work style to all the visible dimensions such as race, age, ethnicity, or gender, to secondary influences such as religion, socioeconomics, and education, to work diversities such as management and union, functional level, and classification or

proximity/distance to headquarters" (Gardenswartz & Rowe, 2011). Such wide-ranging groupings and variables give Diversity an associated disposition of complexity, and simply trying to take a straightforward approach is impossible.

Sullivan (2011) discussed diversity as a complex adaptive system: A complex adaptive system has three characteristics. The first is that the system consists of several heterogeneous agents, and each of those agents makes decisions about how to behave. The most critical dimension here is that those decisions will evolve. The second characteristic is that the agents interact with one another. That interaction leads to the third, emergence: The whole becomes more significant than the sum of the parts in an authentic way. The critical issue is that one cannot completely understand the whole system by simply looking at its individual variables (Sullivan, 2011).

### **Why this problem is important**

A decade ago, the Democratic liberal think-tank, Center for American Progress, issued a report (Kirby, 2012) that predicted that based on past and current patterns and trends, no clear racial or ethnic majority will exist in the United States by the year 2050. Therefore, if accurate, higher education will need to reflect the meaning of this increasingly multiracial environment and multicultural country. HEI administrators should work to improve universities by recognizing and appreciating diversity in perspectives, talents, and lived experiences, as well as by developing a diverse and equitable environment that will attract, retain, and encourage students, faculty, and staff. This includes welcoming differences in people at universities and making them inclusive.

Students benefit from cultural diversity on campus in ways beyond having diverse peers. Students can also observe and experience a wide variety of leadership styles among faculty, staff, and administrators, reflecting the makeup of the campus community. Furthermore, students benefit from seeing someone from a similar background who they can emulate. This is especially significant for students who come from historically underrepresented groups. It is critical to consider all members of the campus communities when choosing those that will work there, ensuring that their demographics are compatible with our student body.

### **This is a Significant Problem**

A decade ago, a report from the American Council on Education (ACE Board of Directors, 2012) discussed the importance of diversity in higher education reflective of their positions from a public policy and programmatic perspective. There are many differences among the colleges and universities in America. Diverse types of institutions are available, including public, private, independent, large urban universities, two-year community colleges, and small rural colleges. Some offer graduate and professional programs, while others concentrate on undergraduate education. Over 4,000 colleges and universities in the U.S. have distinct missions. America's higher education system is one of the best globally because of its diversity among institutions. The preservation of that diversity is essential if we are to serve the needs of our democratic society and the increasingly global nature of the economy. Colleges and universities also share the belief, born from experience, that diversity in their student bodies, faculty, and staff is essential for fulfilling their primary mission: providing a high-quality education. The ACE Board of Directors (2012) outlined four reasons why diversity is so important:



1. Diversity enriches the educational experience. We learn from those whose experiences, beliefs, and perspectives are different from our own, and these lessons can be taught best in a richly diverse intellectual and social environment.
2. Diversity promotes personal growth and a healthy society. Diversity challenges stereotyped preconceptions: it encourages critical thinking; and it helps students learn to communicate effectively with people of varied backgrounds.
3. Diversity strengthens communities and the workplace. Education within a diverse setting prepares students to become good citizens in an increasingly complex, pluralistic society; it fosters mutual respect and teamwork; and it helps build communities whose members are judged by the quality of their character and their contributions.
4. Diversity enhances America's economic competitiveness. Sustaining the nation's prosperity in the 21st century requires us to make effective use of the talents and abilities of all our citizens, in work settings that bring together individuals from diverse backgrounds and cultures.

Institutions of higher education have traditionally enjoyed considerable latitude to fulfill their missions. There is an understanding that there is no single model of a good college and that no single standard can predict with certainty the lifetime contributions of faculty, students, and leaders. Yet the diversity sought, and future sustainability requires college and university leaders to create learning environments with healthy and diverse students, faculty, and administration (College of Journalism and Communications University of Florida, 2020).

### **Purpose of the Dissertation**

The purpose of this dissertation is to improve understanding of the challenges of establishing diversity at the senior leadership level in higher education institutions (HEIs).

Research shows that campus leadership, including a diverse faculty, plays an essential role in achieving inclusive institutions. Academic decisions and pedagogy by faculty members can foster inclusive environments, as can the way they interact with students. Furthermore, students report that they must see themselves reflected in the faculty and curriculum they are exposed to feel a sense of belonging and inclusion (United States Department of Education Office of Planning, Evaluation, and Policy Development, 2016).

### **General Challenge**

In this dissertation I argue that establishing and sustaining leadership diversity within HEIs is a complex systems challenge. I also argue that those responsible for leading efforts to establish and sustain diversity within HEIs, referred to as DEI leaders, should adopt a mindset of systems thinking and apply problem solving methods and tools informed by systems thinking.

### **Research Questions**

1. Do DEI leaders of HEIs acknowledge that diversity is a complex systems challenge?
2. Do DEI leaders of HEIs adopt a mindset of systems thinking to establish and sustain leadership diversity?
3. Do DEI leaders of HEIs apply problem solving methods and tools informed by systems thinking to establish and sustain leadership diversity?

### **Dissertation Structure**

In Chapter 1, I have provided the background, context and challenges associated with diversity, equity, and inclusion in higher education institutions. I have also posed a general challenge and three research questions. In Chapter 2, I provided a literature review from which the topics of diversity, equity, and inclusion within HEIs are described. I included a review of the

relevant issues of systems thinking and complexity, and the use of frameworks for formulating and intervening/problem solving when confronted with complex systems challenges. In Chapter 3, I presented the methodology that I propose to apply to address and answer the general challenge and three research questions. In Chapter 4, I reviewed the results of the interviews which were designed to answer the three research questions posed in this dissertation, followed by a summary and analysis of the responses. Finally, In Chapter 5 I discussed interpretation of the data, the implications of results, and recommendations for HEI DEI leaders.

## CHAPTER 2

### LITERATURE REVIEW

In this dissertation, I argue that within HEIs, the challenges posed by diversity are complex and systemic. I also argue that those responsible for leading efforts to establish and sustain diversity within HEIs require specific leadership proficiencies informed by systems thinking. In this chapter, I review the relevant literature on leadership, HEI leadership, diversity, and DEI leadership characteristics.

Leadership, according to Northouse (2019), author of the most-widely read textbook on the topic, is a process whereby one person influences others to achieve a common goal. Extended to a higher education institution (HEI), this argues that a senior leader's role is to make critical decisions and meet the organization's goals. Despite the wide range of literature on leadership, there is little research on leadership in higher education institutions (Jones, Harvey, Lefoe, & Ryland, 2014). While, the changes facing higher education from increased government, student and community demands are resulting in a greater focus on leadership within universities, attempts to adapt general education theory from other sectors and apply it to HEI leadership have been criticized for failing to recognize the unique role within HEI in the development of creative and innovative thinking required to increase and exchange knowledge (Jones, Harvey, Lefoe & Ryland, 2014). Indeed, while there has been scholarly interest in understanding leadership diversity in business, government, policy, and non-profit sectors, there has been a lack of research in higher education (Adrianna, Dizon, Jude & Scott, 2020).

Research shows that campus leadership, including a diverse faculty, plays a vital role in achieving inclusive institutions. For example, faculty members' curricular decisions and

pedagogy, including their individual interactions with students, can foster an inclusive climate (Hurtado, S., Ruiz Alvarado, A., 2013) Also, students report that it is important for them to see themselves reflected in the faculty and curriculum to which they are exposed to create a sense of belonging and inclusiveness (Diversity Department of Theatre, Florida International University, 2022)

### **Diversity as Context**

The words context, environment and culture are commonly held to have similar meanings and are used interchangeably. Furthermore, context is described as both an input - one of several influencing variables that predict leadership performance – and an outcome –a variable that leadership behavior can influence and change. But the concept of context and its implications on leadership decision making and performance can be understood and examined not merely as an input or outcome variable among others, but as a fundamental, epistemological lens or framework.

Context is critical because it gives meaning to what we do, what we think and how we understand and respond in an environment. James Kouzes and Barry Posner (2016, p.145), assert that context matters. Understanding the context leads to understanding how to respond. For instance, Kouzes and Posner (2016 p.145) provide the following example, when at a theme park, such as Disney World, Efteling, Lotte World, or LEGOLAND, you know that you are there to laugh, scream with delight, and play. But when you are in a house of worship, library, or funeral home, those same behaviors are frowned upon, to say the least.

The concept of context helps to bring understanding to a given environment and provides insight into a problem's complexity as well as the multiple factors that influence its outcome.

Schallock, Luckasson, & Shogren (2020) state that it is important to concentrate on the interrelated conditions that surround the problem you want to address. Once the contextual dynamics and influencing conditions are understood, individuals, organizations, systems, and policy makers are in a better position to use this understanding to engage in discovering interventions to develop effective outcomes.

Everything a leader thinks about and does is influenced by the situation in which it occurs. The whole situation that surrounds and informs a choice or action is its context. In this perspective, operating in a military, academic or global culture; threats of illness and death during a global pandemic; shifting from face-to-face to online learning; and economic depression where approximately 40 million people quickly become unemployed become sub-systems and categories within the broader concept of context. Northoff (2013) noted, for example, “the concept of context is here understood in a wider way that includes distinct kinds of contexts, social, cultural, mental, and bodily. Culture is then one specific instance of context dependence (p. 77).”

Neuroscience research (Ibanez & Manes, 2012, p. 62) shows that context shapes all processes in the brain, from visual perception to social interactions which means context impacts most aspects of personal and professional experience including word and object recognition and meaning and learning abilities. Starr (2020, p. 1) noted,

Context helps people to understand cultural, social, philosophical, and political ideas, as well as actions and movements that occur when thinking, speaking, writing, and performing. Context is important in behavior change, information and knowledge translation, implementation of new practices, and organizational improvements all of which are important to leadership.

Snowdon and Boone (2007) proposed the Welsh word *Cynefin*, (pronounced Kun-Ev-In) meaning *habitat* or *place* to describe distinct contexts in which a problem or opportunity exists. The framework is described as a “sense-making” device, which helps people arrive at a shared understanding of the complexities they face and how to respond to them (Jackson, 2019). If diversity is a contextual characteristic, then it may be contextually complex which requires a systems approach to address it. Jackson (2019 p. XIX) noted,

systems thinking as the only appropriate response to complexity. In systems thinking, the study of wholes, and their emergent properties, is put on an equal footing with the study of parts. The approach also insists that a wide variety of stakeholder perspectives is considered when engaging with problem situations.

Support for identity diversity is characterized by measurable and often objective human attributes such as race, gender, ethnicity, sexual orientation, age, and physical capabilities (Page, Lewis, & Cantor 2019). In the context of a higher education institution, for example, University of Pennsylvania Graduate School of Education (GSE), purport they have had a long-standing objective of creating a diverse and inclusive environment for students (PennGSE, 2022). GSE Dean Pamela Grossman stated, “I and other senior faculty have worked to foster a collegial and intellectually stimulating environment for our community. For the past few years, faculty, students, and staff have engaged in a series of dialogues on issues of race and inclusion.” In 2017, Dean Grossman created the Committee on Race, Equity, and Inclusion, a standing committee whose members include faculty, staff, and students, is focused on addressing school climate and strengthening policies and procedures around such issues as racial bias, LGBTQ+ inclusivity, sexual harassment, and creating a sense of belonging for international students (PennGSE, 2017).

One document from this committee noted that every educator needs to develop racial literacy and an understanding of the history of race in America. This understanding is crucial for both participating in a pluralistic democracy and for educating and leading in our racially diverse society. Penn GSE is working to ensure that curricula for our teacher education, counseling, and leadership programs further strengthen—and make more explicit—our practitioner preparation around issues of race and racial justice. The community continues to work to provide ongoing training in anti-racist pedagogy and racial literacy for students, faculty, and staff at Penn GSE.

The GSE Action Plan for Faculty Diversity has been considered a model for the University of Pennsylvania campus at large. The plan’s purpose is to improve the faculty search process and, when appropriate, actively target talented faculty with diverse experiences. Currently 40.5% of GSE’s standing faculty are people of color, with over 24% coming from under-represented groups (PennGSE Action Plan for Faculty Diversity, 2020).

### **Race and Ethnic Diversity**

Race and ethnic diversity are often intertwined and referred to jointly, but they are not the same. *Meriam Webster Dictionary* (2022) defines race as primarily a sociological designation that identifies a group sharing some outward physical characteristics and some commonalities of culture and history. Ethnicity means something one may acquire based on family history and the group with which one shares cultural, traditional, and familial bonds and experiences. A person may have racial similarity but ethnic dissimilarity.

Morrin (2020) noted, typically, race is associated with biology and physically observable characteristics, like hair texture and skin color, and it covers a relatively narrow range of choices. It could apply to anyone, no matter what race or ethnicity they possess. Despite this, people with



similar skin tones or hair textures may be considered different races. For example, while some may identify with a certain race, Black individuals sometimes identify more with their ethnicity than their race. Where ethnicity encompasses more than race, it refers to the way in which groups of people express themselves and identify with their culture. Several factors may be considered to describe someone's ethnicity, including race, nationality, tribe, religion, language, or cultural background. For instance, someone may say their race is "Black," their ethnicity might be Italian, or someone may say their race is "White," and their ethnicity is Irish.

Racial diversity is the acknowledgement and celebration of differences between racial groups. Diversity recognizes and values differences within as well as between racial identities, noting the intersectionality of many groups including "ethnicity, gender...age, national origin, religion, disability, sexual orientation, socioeconomic status, education, marital status, language, and physical appearance. It also involves different ideas, perspectives, and values" (Racial Equity Tools [Glossary](#), 2020).

Ethnic diversity encompasses a broader range of factors than race. An individual's ethnicity may be described by characteristics, such as race, nationality, tribe, religion, linguistics, or cultural origins. An ethnic cultural group is defined according to how members conduct expressing and identifying themselves. Most people identify themselves with more than one ethnic group, resulting in a diversity of psychological characteristics and value systems that determine their traditions, beliefs, and educational perspectives (Ethnic Diversity in Psychology: Examples & Impact, 2021).

Writing for the American Council on Education, Espinosa, Turk, Taylor, and Chessman (2019) described a comprehensive overview of higher education professionals, including full-time and part-time faculty, academic department heads, senior administrators, faculty, and

support staff. The data show that college and university administrators, faculty, and staff have not evolved at the same rate as the student body regarding racial and ethnic diversity. Approximately 45 percent of undergraduates and 32 percent of graduate students were students of color 2015-2016 (Espinosa et al., 2019); The group students of color include American Indians or Alaska Natives, Asians, Black people, Hispanics, Native Hawaiians or other Pacific Islanders, and students of more than one race. Despite this, these data indicate that the majority of faculty and key staff are white. White faculty made up 71.0 percent of part-time faculty and 72.6 percent of full-time faculty in the fall of 2017. The trend was observed among senior administrators, mid-level professionals, as well as nearly all full-time and part-time staff members. In terms of occupations, people of color are underrepresented across all positions and seniority levels, faculty, and staff. This means that college students of color may be more likely to encounter people who look like them outside of the classroom (Espinosa et al., 2020). For example, the city of Philadelphia is a diverse community. Its residents are 44.1 percent Black, 35.8 percent white, 13.6 percent Latino and 7.2 percent Asian (Otterbein, 2015). This contrasts with, for example, the city of Seattle where 25% are of color (U.S. Census Bureau QuickFacts, July 2021). When 45 percent of undergraduates are people of color and 65 percent of Philadelphians are people of color, this may support the probability that students of color are more likely to encounter staff – who are drawn primarily from Philadelphia – resemble them outside of the classroom.

## **Gender Diversity**

Rubin, Atwood, and Olson (2020) summarized research developments in the psychology of gender diversity. In particular, they focused on three areas where there have been significant advances: large descriptive studies documenting the experiences of gender diverse people;

theoretical and empirical advancements in assessing gender diversity; and experimental study of people's perceptions of and attitudes toward gender diverse people.

Transgender, nonbinary, and other forms of gender diversity have been gaining recognition in the last decade. Evidence suggests, however, that gender may be more complex than conventional conceptions (Rubin, Atwood, & Olson, 2020). This article suggests that the number of people identifying as gender diverse may be rising based on recent population-based samples. In the adolescent population, it is estimated that 1% to 3% of young people identify as gender diverse. Increased legal recognition of nonbinary people is one example of societal recognition of a more complex conception of gender diversity worldwide, including in the United States. This is a departure from the traditional view of gender as binary and discrete and is typically associated with one's sex (Rubin, Atwood, & Olson, 2020).

Higher education institutions can be powerful in terms of promoting gender equality, diversity, and inclusion, not only in higher education but also in society; However, universities remain gendered and gendering organizations (Rosa, Drew & Canavan, 2020).

Over the past 50 years, there has been a significant shift in the reported ratio of undergraduate males to females. In 1970, approximately 58% of college students in 1970 were men and 42% were women, according to the National Center for Education Statistics (NCES, 2019). In an updated 2019 report, 57% of undergraduates were women and 43% were men (NCES, 2019).

The number of women in higher education grew steadily during the later stages of the 20th century early 2000s. American Council on Education reported that women earned more associate degrees than men for the first time in 1978 (Johnson, 2017). By 1982, women received

more bachelor's degrees than men. Graduates from female universities also received more master's degrees. Furthermore, women earned more doctorates in 2006 than men.

While these data show that a significant trend in higher education over the past half-century has been the growth of women students and graduates in college. Nevertheless, that trend does not apply to women's representation in higher education faculty and administration. Women still lag behind men in positions of administrative and academic authority on campus; this underrepresentation indicates there is still a lot of work to be done to improve gender equality (bestcolleges.com, 2021).

Higher education administrators lead academic departments, oversee student services, and may set and monitor policies for colleges. When examining these offices, the number of women decreases as the level and breadth of authority increases.

There is a relatively even playing field between men and women regarding department chairs. The College and University Professional Association for Human Resources (CUPA-HR) published a report in 2017 that showed women-headed slightly more than half of departments. Additionally, women accounted for 54% of assistant deans in 2016, up from 46% in 2001 (Bichsel & McChesney February 2017).

However, women remain underrepresented in higher-ranking positions with greater responsibility and pay. As of 2016, women made up around 40% of deans and 27% of top executives in higher education (ACE, 2017).

The Association of College Presidents reported that in 2017, only 8% of women college presidents worked at doctoral-granting institutions. And these women presidents primarily worked at less-research-intensive colleges. Furthermore, CUPA-HR notes only about 30% of

college presidents are women, who make key decisions about institutions' resources and priorities (ACE, 2017).

### **Sexual Orientation Diversity**

Higher education has adopted a model that distinguishes between four components of sexual identity (Lev, 2004): sex, gender identity, gender expression, and sexual orientation. Although interconnected, each component is distinct. Biologically, a person's sex, or sex assigned at birth, can be described as how their genes, hormones, biochemistry, and internal and external anatomy combine to shape how their physical appearance is formed (Lev, 2004). Most people are classified as male or female, despite wide variations in sexual development in those who do not neatly fit into either (Fausto-Sterling, 2000). Intersex or people with differences in sexual development describe those who physiologically deviate from the sex binary individuals (Diamond, 2009). Gender refers to the sociohistorical and culturally constructed roles and attributes assigned to people, many of which are determined by their sex. Gender identity refers to a person's own conception of gender, while gender expression refers to one's performance and enactment of gender. There are many words that describe gender identity, such as woman, man, gender-queer, transgender, agender, and others. There are many words that describe gender expressions, such as masculine, androgynous, feminine, and others. A descriptor such as butch, femme, transfeminine, and masculine-of-center may refer to one's gender identity, gender expression, or a melding of both. For example, in U.S. higher education institutions that conceptualize essentialist and binary understandings of gender, men are expected to be masculine while women are expected to be feminine (Bilodeau, 2009).

For higher education institutions to achieve important institutional goals, it is important to consider the entire LGBTQA+ community, including students, faculty, staff, and graduates.

To create supportive and affirming cocurricular spaces, universities must be intentional. The university should think broadly about recruiting inclusion-minded trustees, administrators, faculty, and staff (Stewart, Renn & Brazelton, 2015).

### **Age Diversity**

Diversity of age refers to employees from different age groups at a workplace. Like generational diversity, an organization's support of age-based diversity seeks to combat age discrimination (Heaslip, 2021). An individual's age is simply the amount of time that has passed since birth (Settersen & Godlewski, 2016). In contrast to the predictable progression through different age groups in one direction over time, some identity characteristics like race or sex do not exhibit the same fluidity over time (Haney-Lopez, 1994). Age, however, is more than just a number. This is a social signifier that indicates membership in a particular age group and cohort (Macnicol, 2006). The term age group refers to a group of individuals with similar characteristics, which may be defined either narrowly, as individuals aged twenty-five and under, or more broadly, such as individuals in their sixties (Marshall, 1984). (Giele & Elder, Jr, 1998) suggests that age groups have specific positions on a standardized life course, or the sequence of socially determined events and roles that influence a person's life.

The inclusion of age diversity occurs within a larger discussion of diversity along other dimensions (Vicki Schultz, 2000). As age intersects with other aspects of identity, this is an inevitable consequence. Age diversity itself may have implications for other types of diversity and vice versa, and these cross-identity effects may also have normative implications (Boni-Saenz 2021). As age intersects with other categories such as race, sex, and class, we create individuals with unique interests and mindsets (Grillo, 1995).

Additionally, these various aspects of identity can intersect in ways that create unique experiences and forms of disadvantage (Crenshaw, 1989). For example, Black youth are more likely to be arrested and incarcerated than other groups, due to racist and ageist stereotypes associating Blackness and youth with criminal behavior (Richardson and Goff, 2014). Similarly, older women can feel the burden of societal expectations about beauty because of sexist norms that place value on appearance and ageist definitions of beauty (Calasanti, Calasanti & Slevin, 2001). Thus, when considering age and the age diversity of various societal institutions, it is crucial to consider these intersectional effects. A person's age can inform us about their biology and development. For example, we know something about the physical and mental capacities of a three-year-old based simply on her age (Huntington, 2016). The picture becomes much murkier with age since variation within the population becomes more significant than age (Whitton, 1996). However, there are certain trends in how aging plays out in the population. For instance, younger individuals tend to score higher on fluid intelligence, which is the ability to reason abstractly without reference to prior experience.

In comparison, older people score higher on crystallized intelligence, defined as the capacity to use past knowledge and experience to solve problems (Boni-Saenz, 2021). While age produces observable regularities at the population level, that does not mean that any particular characteristic is necessarily shared by individuals of the same age (Boni-Saenz, 2021).

Due to the extensive training and education required to become a member of the tenure-track faculty in higher education, they are older than most U.S. workers when they begin their careers. In the United States, the median age of the labor force is 42 years, while the median age of tenure-track faculty is 49 years. Furthermore, HEI faculty members are significantly older

than other workers. According to McChesney and Bichsel (2020), only 23 percent of workers in the labor force are 55 years or older compared to 37 percent of faculty in HEIs.

HEI faculty, particularly those at the more senior levels, are underrepresented by women and racial/ethnic minorities. McChesney and Bichsel (2020) reported that only 25 percent of tenure-track faculty older than 55 are women, and only 16 percent are members of racial/ethnic minorities. As a professor's rank increases, the number of minorities decreases. Because this decrease occurs in relatively recent promotions (i.e., from assistant to associate professor), it is likely due to a lack of promotion of women and minorities.

It remains a concern in higher education that women and people of color are underrepresented among faculty, particularly at the senior academic levels. Women make up 45% of tenure-track faculty younger than 55 years of age but only 35% older than 55. Women's participation in faculty declines steadily with age: more than half (52%) of faculty in the youngest age category (25-30 years old) are female, but less than one-third (30%) in the oldest category (65-70 years old). McChesney & Bichsel (2010) find this overall decline to be primarily due to a decline in women where full professors are concerned (McChesney & Bichsel, 2020).

### **Physical Capabilities Diversity**

Sometimes referred to as the last frontier in diversity and inclusion, capabilities diversity refers to "...varying abilities and disabilities. Differences in cognitive, social-emotional, and physical abilities add to the layers of ability diversity" (Bach, 2021).

According to the Centers for Disease Control and Prevention, about 26 percent of people in the United States have a disability. That includes both visible disabilities, such as many mobility impairments, and hidden ones, such as psychosocial or emotional conditions (Burke,



2020). The past few years have seen the emergence of disability studies departments and programs at some colleges and universities. Syracuse University, Miami University of Ohio, and the University of Illinois at Chicago, have established disability cultural centers or affinity groups. However, this type of initiative is less common (Bach, 2020).

Higher education institutions have implemented policies and practices to support on-campus diversity initiatives. Most of the conversations about diversity involve dimensions such as race, gender, and ethnicity; disability or ability is often omitted from such discussions (Scheef, Caniglia, Barrio, 2020). However, some advocates and scholars say HEI has been slow to recognize disability as an identity group or include it in programming around diversity and inclusion (Burke, 2020). Despite that many college presidents and administrations mention disability in their statements, scholars and activists claim that higher education is still far from accepting disability as a form of diversity (Advancing Diversity and Inclusion in Higher Education, 2016). Burke (2020) noted, though many colleges are engaging in much-needed efforts to diversify their faculty and student bodies, fewer are engaged in efforts to recruit and retain faculty and students with disabilities.

Faculty with disabilities should be just as much a part of the diversity conversation as other identified groups. Disability is an affirming identity; individuals with disabilities contribute to diversity just as other minorities groups do (Grigley, 2017).

### **Cognitive Diversity**

Cognitive diversity refers to differences among people in terms of patterns of thinking, interpretations and meaning of information, and problem-solving processes all of which can offer unique perspectives because these measures can reflect how people think differently (Thibodeau,

2018). For example, cognitively diverse teams may be comprised of individuals with a wide range of educational backgrounds. Software engineers who have completed Coding Bootcamps, for example, might approach problems differently from colleagues who have graduated from four-year universities. Identity diversity contributes to cognitive diversity and helps to describe the complex nature of diversity more clearly.

A 2018 Deloitte Study showed that high performing teams are both cognitively and demographically diverse, where cognitive referred to educational and functional diversity as well as diversity in the mental frameworks people use to solve problems. Having a demographically diverse team allows teams to access knowledge and networks that are unique to a particular group. It indirectly contributes to cognitive diversity by influencing personal behavior and group dynamics. As an example, racial diversity stimulates curiosity, and gender diversity promotes turn-taking (Bourke and Dillon, 2018).

There are three reasons why diversity of thinking is valuable. Firstly, it contributes to creating a broad narrative where everyone feels part of a shared goal (Bourke, 2016). Secondly, it reflects more accurately the intersectional complexity of people rather than concentrating on one aspect of social or demographic identity (Kelly and Smith, 2014). Lastly, a focus on cognitive diversity recognizes that demographic equality is useful as a visible indicator of progress toward diversity thinking (Bourke and Dillon, 2018). The study showed that cognitively diverse teams can increase innovation by more than 20 percent and enables teams to identify and reduce risk by more than 30 percent (Bourke and Dillon, 2018).

## **Diversity, Equity, and Inclusion in HEI**

It has been argued that diversity, inclusion, and equity are critical to driving organizational excellence, and the belief in these principles must be part of the fabric, framework, and culture of an organization (CUPA-HR 2022). From a practical/applied perspective, diversity and inclusion are not terms with clear understanding within HEIs. Often, the terms "diversity," "equity," and "inclusion" are not defined very precisely, making their meanings and implications open to individual interpretation. For instance, the term "diversity" can mean the representation of individuals from diverse backgrounds to promote cosmopolitanism or to promote social justice. Equity might refer to the equal distribution of resources to prevent mistreatment in the present, or it might refer to the unequal distribution of resources to compensate for mistreatment in the past (German, 2020). Williams and Wade (2013) noted the most significant challenge is trying to respond to diverse expectations, ambiguous definitions, and the widespread hopes of people who define diversity in inconsistent ways. Eckel and Trower (2016) provide the following definition:

Diversity is the wide range of national, ethnic, racial, and other backgrounds of U.S. residents and immigrants as social groupings, co-existing in American culture. In addition to encompassing national, racial, and ethnic backgrounds, the term also includes gender, sexual orientation, class, and much more.

Inclusion authentically brings traditionally excluded individuals and/or groups into processes, activities, and decision making and policymaking. More than simply assuring numerical representation, inclusion involves authentic and empowered participation and a true sense of belonging for diverse individuals and/or groups.

Equity is synonymous with fairness and justice. It is helpful to think of equity as not simply a desired situation or a lofty value. To be achieved and sustained, equity needs to be thought of as a structural and systemic concept. Systemic equity flows from a combination of interrelated elements consciously designed to create, support, and sustain social justice. It is a robust system and dynamic process that reinforces and replicates equitable ideas, power, resources, strategies, conditions, habits, and outcomes.

Powell and Keller (2011) apply the following DEI metaphor: Diversity is being invited to the party; Equity is making sure your music is played; and Inclusion is being asked to dance.

There is arguably more diversity in higher education today than ever before; however, the rate of change is slow. In a period where demographics are changing, and new diversity initiatives are emerging, higher education practices remain essentially unchanged. The College and University Professional Association for Human Resources (CUPA-HR) published in its *Administrators in Higher Education Annual Report* evaluating the current state of the pipeline for leadership positions in higher education. According to the most recent 2021 report there is continuing trend of underrepresentation of minorities and women at the senior leadership level (Bichsel Nadel-Hawthorne, Fuesting & Schmidt, 2021).

As student populations have become increasingly diverse, efforts to increase diversity, equity, and inclusion have increased. Studies in industry indicate that diversity is beneficial to businesses. Companies and institutions that are diverse are more successful than those that are not. Companies with greater gender diversity are 15% more likely to outperform their peers, while companies with greater ethnic diversity are 35% more likely to outperform their peers. Diversity leads to better performance in business. Higher education is no exception. It has been

shown that diverse faculty, staff, and student bodies provide better support for teaching and research missions (Bichsel & McChesney, 2017).

### **Systems Thinking in Leadership**

While the literature on school leadership based on systems thinking reveals few results (see Hoban, 2002; Senge et al., 2012; Zmuda et al., 2004), systems thinking for successful education improvements is needed. Fullan's (2005) book, *Leadership*, offers an example of system thinking and sustainability. According to Fullan, System thinkers are necessary for organizational improvement because leaders who can address the whole system can address complex problems (Shaked, Haim and Schechter, & Chen, 2020).

Systems thinking aims to study wholes instead of parts, hence making it more effective at dealing with complexity. Senge (1990) describes systems thinking as “a discipline for seeing wholes. It is a framework for seeing inter-relationships rather than things, for seeing patterns of change rather than static snapshots.” The emphasis is not on deconstruction of parts to understand them but rather on relationships and how parts interact together in networks (Shaked, 2020). System thinking focuses on the emergent organizational properties created by interactions among the system's components rather than the prevailing reductionist approach, which proposes to understand a system by breaking it into subsystems (Rosenberg, 2006). Therefore, it is important to understand why a specific phenomenon emerges and persists by understanding its parts in its whole context (Hammond, 2005).

## **Complex System Problems**

Starr (2020) noted,

Leadership for a complex problem is informed by systems thinking which has certain characteristics. These include that the elements within an organizational system include people, events, and influencing forces; there are interconnections and interdependencies among the elements; the elements – people and groups – have their own purposes; and the organizational system as a whole has a primary function or purpose that cannot be attained by any of the elements alone, but which emerges from the interactions of all the components.

Scholars and researchers use the term systems thinking broadly to describe a wide range of systems approaches, methodologies, and tools that result from these approaches. In situations where a leader is faced with complex problems or opportunities, a single systems-thinking theory may prove helpful, but it often falls short. There is a greater need to be familiar with several systems approaches because general systems thinking has implications for thought; it is not necessarily able to identify a preferred method of intervention that can identify a change or pathway that navigates, solves, or dissolves a specific complex problem. Leaders have the opportunity to intervene and navigate complex contexts by leveraging the implications, methods, and tools derived from several systems theories and approaches (Starr, 2020).

As noted by social philosopher Edgar Morin (2008), the context of learning and problem-solving is an "intimate mixture of order and disorder...a web (complex: that which is entangled, interwoven) of events, interactions, feedback and co-incidences that create our visible world (in Vandebroek, 2015).

Starr (2020) states, "The navigating differing contexts theme posits that when the context shifts from ordered and complicated to unordered and complex, there must be a corresponding shift in the leader's mindset, mode of thinking and method of deciding." Even so, many scholars have argued that a context can be understood by identifying different domains and typologies of complexity. Midgely (2016) identifies four domains of complexity: natural world complexity, or "what is" (where the ideal of inquiry is truth); social world complexity, or "what ought to be" concerning actual or potential action; subjective world complexity, or what each individual is thinking, intending or feeling; and complexity of interactions between elements of the other domains of complexity, as applied to research and intervention practices.

1. "Natural world" complexity, or the complexity of "what is." The ideal of inquiry into this form of complexity is truth — but note the term "ideal" which, following Popper (1959,1972), indicates that truth is something we aim for, but we can never know for certain whether it has been achieved.
2. "Social world" complexity, or the complexity of "what ought to be" in relation to actual or potential action. The ideal of inquiry into this form of complexity is rightness.
3. "Subjective world" complexity, or the complexity of what any individual (the self or another) is thinking, intending, or feeling. The ideal of inquiry into this form of complexity can be called understanding subjectivity.
4. We very often must deal with interactions between phenomena in the above three domains of complexity. This means that there is also the meta-level complexity of these interactions, which needs to be a focus of inquiry. However, it is important to note that, in the context of intervention (rather than just observation), meta-level analyses may not stay "meta" for long: communication of them, and action upon them, may feedback to change the original pattern of interactions.

Pourdehnad and Starr (2013) noted that dynamic complexity is characterized by an increasing rate of change, widespread connectivity, globalization, and innovation. Sudden disruptions such

as the novel coronavirus can emerge in this context despite well-formulated planning and without obvious anomalies in key performance indicators. Furthermore, proficiency in learning how to generate novel leadership responses and navigate dynamic complexity is an art, an expression of creative competencies and imagination, based on rapid integration and deployment of a new portfolio of competencies and capacities.

### **DEI Leader**

Peter Senge (2014) stated, “Leadership exists when people are no longer victims of circumstances but participate in creating new circumstances.” This supports the idea that a DEI leader must be proficient in designing innovative solutions to complex challenges rather than to focus merely on solving well-structured problems. That a leader and designer have elements in common was described by Beven, Bate, Glenn, Maher, and Wells, 2007:

We were also struck by the designer Klaus Krippendorf’s comment that the designer is a “maker of meaning” (cited in Margolin & Buchanan, 1966) which is interesting because this is precisely how Smircich and Morgan (1982) defined “leadership” many years ago, and probably how many would still choose to define it today. If we accept that leaders and designers are both meaning makers, then again, then it seemed possible that they will have much to learn from each other about their respective methods, concepts, and practices (p. 138).

Managing change is a challenge for leaders in the 21st century context. Diverse, rapid, and intense changes create volatility, uncertainty, complexity, and ambiguity (VUCA), which challenges leaders to find ways to lead more effectively as available methods prove inadequate. Traditional linear leadership decision-making and problem-solving models do not apply in the



new and dynamic world that requires nonlinear thinking and ambidextrous leadership (Ramita, 2019).

Horney and O'Shea (2015) indicated that complexity represents one of the most significant challenges facing leaders today. Operating in complex contexts is a challenging problem, and many sources provide differing solutions. According to Horney and O'Shea (2015), organizational agility and leader creativity are the best ways to fight complexity because they make it easier for organizations to adapt and gain a competitive advantage. Johansen and Euchner (2013) noted that leaders with a clear understanding of the need to respond to complex problems helped their organizations and teams become more efficient. The authors of this study did not clarify how leaders would acquire, possess, or categorize clarity, which would give credence to the study's intent regarding what constituted leader readiness. Another approach for complexity was offered by Cousins (2018) who agreed with Bennett and Lemoine's (2014) concept of restructuring as a strategy. In addition, it was suggested that a leader should use knowledge-based strategies to combat complexity. Cousins' knowledge-based strategy aligns with the emergence of the current knowledge era, which has replaced the industrial age and mechanical thinking.

Starr (2020) states that while the prevailing leadership definition is individual/agent-based, goal-directed, and context-independent, in complex and chaotic contexts, a mindset to perceive mutual and influencing interactions among many people, events, and socio-technical elements becomes important to leadership. While organizational means and goals are presented, the stakeholders in organizational sub-systems and containing systems have their own interests and purposes.

In an organizational system, people and elements interact in non-linear ways which can defy problem understanding, and in a dynamically complex system, all the elements are moving which defies prediction. Leadership for a complex problem is informed by systems thinking which has certain characteristics. These include that the elements within an organizational system include people, events, and influencing forces; there are interconnections and interdependencies among the elements; the elements – people and groups – have their own purposes; and the organizational system as a whole has a primary function or purpose that cannot be attained by any of the elements alone, but which emerges from the interactions of all the components.

## **Summary**

The literature suggests DEI is a complex and systemic concept and its management is equally complex and systemic. If DEI is indeed a complex systems problem, I contend that if those responsible for leading efforts to establish and sustain diversity within HEIs require specific leadership proficiencies informed by systems thinking. Starr (2020) noted, when navigating complexity, leaders must possess additional cognitive capacities. Groves and Vance (2015) have noted that nonlinear thinking style compared to linear thinking style is preferred for decision making and problem solving in complex situations because it focuses on seven distinct, yet interrelated dimensions: intuition, creativity, values, imagination, flexibility, insights, and emotions.

Steele (2012) noted that applying systems thinking to DEI requires integration into the organization as a whole and in the relationships between the organization's parts to sustainably blend DEI into the organizations underlying structures, processes, and culture.

A Systems perspective involves stepping back and seeing the whole picture as a living, interconnected system. From this perspective, leaders can identify patterns and relationships they can leverage or disrupt to achieve positive systemic change. This suggested as part of the theory of adaptive leadership (Heifetz et. al, 2009). This proficiency entails the notion that to be influential, leaders must be acutely aware of what is happening in the system allowing them to learn, innovate, and assess solutions. Systems-thinking leaders approach their work with a diverse, equitable, and inclusive approach. Therefore, they need to be adept at creating a sense of discomfort and tension around inequity that spurs people to act. In their continual quest to rectify inequities embedded in systems they seek to change, they should have a deep passion for and commitment to social justice (Equal Measure Brief, 2017).

## **CHAPTER 3**

### **METHODOLOGY**

In this dissertation, I have argued that a general challenge exists within higher education institutions; namely, that establishing and sustaining leadership diversity is a complex systems problem. I have also argued that to lead efforts to establish and sustain diversity within HEIs requires certain cognitive proficiencies including a mindset of systems thinking and understanding of methods and tools informed by this approach. I label the person responsible for this challenge, the DEI leader. In this chapter I propose a methodology and tools to examine the three research questions informed by the general challenge.

#### **Research Questions**

1. Do DEI leaders of HEIs acknowledge that diversity is a complex systems challenge?
2. Do DEI leaders of HEIs adopt a mindset of systems thinking to establish and sustain leadership diversity?
3. Do DEI leaders of HEIs apply problem solving methods and tools informed by systems thinking to establish and sustain leadership diversity?

#### **Participants**

To respond to these questions, I propose to identify and recruit a small sample of DEI leaders from higher education institutions. All participants will be volunteers and can stop participation without argument at any time which will prompt immediate cancelation of further contact and of any collected information.

## **Population**

The population was identified focusing on four-year colleges and universities in the Philadelphia metro area. Niche's (2022) lists the top fifty-three four-year public and private colleges in the metro Philadelphia area. I will send an introductory recruitment letter to the top twenty-five institutions on the list.

## **Sampling Frame**

Study participants were selected using a sampling strategy. According to Patton (2002), a criterion sampling methodology will identify qualified participants. Interviewed participants will be institutional Chief Diversity Officers or associated designee. From the list of colleges and universities in the greater Philadelphia area, I will research each institution to determine if they have a chief diversity officer. If so, I will contact that individual to be included in the study. I will continue in this manner until I have interviewed a minimum of approximately twenty percent of the identified population. It is completely voluntary to take part in the study, and participants can decide not to participate at any time. This will cause them to be excluded, and all information collected will be discarded. To find a replacement, I will return to the list and follow the same process. Participants agreed to take part as individuals and not representatives of the institution, providing both their personal and professional views.

Researchers have argued that 70 percent of all network traffic occurs via email (Shank, 2006), and we used email to invite potential subjects to participate in this study. A letter of introduction describing the research problem, purpose, participant requirements, and informed consent was emailed to the participants. Those receiving this email were directed to contact the sender by email or phone if they are willing to participate.

## **Geography**

Participants must be located within the metro Philadelphia area and hold an official position within the institution as Chief Diversity Officer or associated designee. By focusing on the metro Philadelphia area, bias, cultural impacts, and environmental differences are minimized, resulting in a more controlled sampling environment. Participants will not be identified by personal information. The focus will be on how the individual thinks about and responds to the questions. The inclusion of personal information such as gender, ethnicity, sexual orientation, or religion will be for future research.

## **Methods**

Each participant was interviewed via Zoom guided by a questionnaire (Table 1) containing 5-point equal-interval response format questions (1=Very Low; 2= Low; 3=Mid-Range; 4= High; 5=Very High), and open-ended response format questions. There are three sections. Questions in Section 1 are designed to identify the degree to which participants understand and acknowledge that diversity is a complex systems challenge. Questions in section 2 are designed to identify the degree to which participants understand systems thinking sense making tools used to aid decision making. Finally, questions in section 3 are designed to identify the degree to which participants problem solving tools and methods informed by systems thinking.

In conducting a qualitative interview study, Weiss (1995) suggests several factors to consider. A qualitative interview can be described as flexible, dynamic, unstructured, non-standardized, and open-ended by Taylor et al. (2015). Furthermore, qualitative interviews allow the researcher to probe deeper into the issues and ask follow-up questions immediately.

Interviews aim to elicit views, experiences, beliefs, and/or motivations of respondents on subjects (Gill et al., 2008).

## **Data Collection**

### Institutional Review Board (IRB) and Ethical Considerations

Thomas Jefferson Institutional Review Board approval is required before the study begins. All participants will also receive an Informed Consent Form to guarantee their protection during this qualitative study. Signed consent will be presented to the primary researcher before the interviews. Also, the list of interview questions for the appropriate interview subject will be distributed before the discussion.

Interviews will be recorded by Zoom. During the primary research process, the primary researcher will analyze each interview to better understand the content and general themes. To protect participants, steps will be taken to ensure that no one will access raw data.

### Interview Protocol

To follow a standardized format for each interview, Creswell (2009) recommends implementing an interview protocol that addresses questions and records responses during the data collection phase. Each interview will provide an overview of the research process and participants' roles. A detailed explanation of the study objectives will be followed by assurances of confidentiality stating that specific individuals would not be identified, and comments would be presented in a manner that would not disclose their personal information to institutions participating in the study. The interview process will also inform participants that they can withdraw at any time without any repercussions.

## Instrumentation

By analyzing the data qualitatively, the researcher can reflect on the data immediately and consider strategies for collecting additional and more detailed information as needed.

Organizing notes and recordings from every interview conducted and taking time to read and listen to recordings will bring additional perspective to the remarks and responses from the researcher's first hearing. As a result of this approach, the researcher will not only be able to familiarize themselves with the data but also identify trends that have emerged from the data as a whole. All data collected will be analyzed using NVivo, a qualitative data analysis tool. Using tools such as NVivo, which has a robust search function, ensures rigor in qualitative research. In addition, it is an important method of providing all instances of phrases, words, or themes found (Welsh, 2002).

Table 1: Participant Background Questions

Participant background	<ol style="list-style-type: none"><li>1. How did you get into DEI work?</li><li>2. How long have you been in your current role?</li><li>3. On scale from 1-5 is Diversity difficult to manage here?</li><li>4. Are there specific challenges that stand in the way of your job?</li></ol>
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Table 2: Diversity Thinking Questions

Research Question	Interview Questions
Do DEI leaders of HEIs acknowledge that diversity is a complex systems challenge?	5. Are you familiar with the acronym VUCA? 6. Do you have an idea if diversity is VUCA, particularly complexity? 7. What is your idea of complexity?
Do DEI leaders of HEIs adopt a mindset of systems thinking to establish and sustain leadership diversity?	8. Are you familiar with Cynefin? 9. How do you see diversity? 10. What kind of problem is diversity?
Do DEI leaders of HEIs apply problem solving methods and tools informed by systems thinking to establish and sustain leadership diversity?	11. How do you think about this problem? 12. How are you solving your problems? 13. Can you share a recent diversity problem without names?

## **CHAPTER 4: RESULTS**

This chapter presents the results of the interviews which were designed to answer the three research questions posed in this dissertation; namely, Do DEI leaders of HEIs acknowledge that diversity is a complex systems challenge? Do DEI leaders of HEIs adopt a mindset of systems thinking to establish and sustain leadership diversity? Do DEI leaders of HEIs apply problem solving methods and tools informed by systems thinking to establish and sustain leadership diversity? First the demographics of the participants are presented. This is followed by a summary and analysis of the responses.

### **Participant Background and Perception**

#### Demographic Questions and Responses

Interviews were conducted with seven participants. To each, a set of four questions about their background and perceptions of their work was posed. Responses were made on a 5-point Likert scale with 1=Very Low; 2= Low; 3=Mid-Range; 4= High; 5=Very High.

When asked (Q.1), “How Did you get into DEI work?” Each of the seven participants reported that DEI was part of their HR role, nevertheless one participant also noted that they were initially exposed to DEI as a means of access to resources as a part of a historically underrepresented group. When asked (Q.2), “How long have you been in your current role?” The average time reported was 15.85 years with a range from 7 to 26 years. When asked (Q. 3), “On scale from 1-5 is Diversity difficult to manage here?” The average difficulty rating was 4.8 with one person responding 4 (High Difficulty) on the scale and six participants rating the management difficulty 5 (Very High). (Q. 4) asked, “Are there specific challenges that stand in the way of your job?” Three of the participants referred to input variables such as a

representative “candidate pool” and the “application pipeline.” Two referred to a lack of policies to create and support diversity. Two stated there was an inability or resistance of key stakeholders to acknowledge their personal bias or prejudices. Table 3 provides a summary of the responses of all the participants.

Table 3. Summary of Background and Perceptions of Participants.

Participants	Question 1: How Did you get into DEI work?	Question 2: How long have you been in your current role?	Question 3: On scale from 1-5 is Diversity difficult to manage here?	Question 4: Are there specific challenges that stand in the way of your job?
1.	DEI falls under the umbrella of responsibility of my role as Senior Vice President for Human Resources.	Seven years	Four	Establishing and sustaining a diverse candidate pool.
2.	Growing up in a multi racial family I was drawn to DEI as a means to access those that historically have not had access.	Twenty years	Five	Changing the foundational way in which things are done. That means changing the policies or procedures by which you land with a particular composition of people in that room.
3.	I became involved in DEI as an undergraduate student. Organically the things I was doing as a student began to align with my academic trajectory and I found myself	Twelve years	Five	The application pipeline and it is the structure of what senior administration looks like at colleges and universities broadly. It is a problem, but it is literally a reflection of exactly

	being involved with these types of projects and eventually taking on roles.			the system that was created.
4.	Falls under the umbrella of my role as Vice President, HR	Twenty-six years	Five	“Diversity” just feels like it is amorphous, and it is hard to create a strategy or plan because, everybody has a different idea about what it is, what it should be, whether there is a gap, whether there is not a gap.
5.	From being an office for focusing only on African American student affairs to evolving to being an office for multicultural student affairs, we expanded, had a huge emphasis on serving Native American students, and then Latino students. Which then evolved to me leading the division of Diversity Equity.	Sixteen years	Five	The other challenge is that nobody wants to believe that they are prejudiced, or that they have bias, and we all are prejudiced, and we all have bias and so.
6.	I began my DEI experience in my role as Vice President of Human resources and Chief Diversity officer.	Fourteen years	Five	Setting policies that then are going to shape the rest of the university. Then it is a more of a challenge to make sure that it filters down, and everyone benefits.

7.	I began my DEI work in health care in a role to increase minority medical student enrollment. I continue my DEI work in my current role as a Chief Diversity Officer.	Sixteen years	Five	There are others that Don't believe that there is a problem with diversity.
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For each question asked of participants, a word cloud generator by wordcloud.com generated a text analysis displaying the most frequently used words highlighting significant textual data points. The word cloud illustrates common themes among participant comments. Despite the differences between the participants' responses, the data may be appreciated in a visually compelling way (Figure 5).

Figure 5: (Q1: How Did you get into DEI work?)

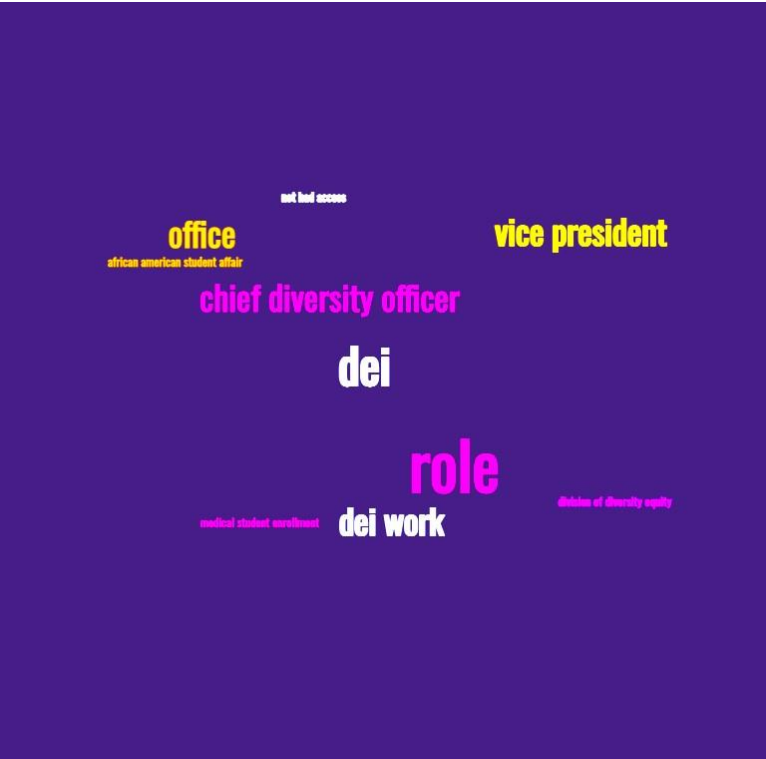


Figure 5 highlights the most frequently used words role, vice president, and chief diversity officer. The visual image reflects each of the seven participants reported that DEI was part of their HR role, nevertheless one participant also noted that they were initially exposed to DEI as a means of access to resources as a part of a historically underrepresented group.

Regarding Q 2, which asked about the number of years' experience among the participants, Figure 6 represents those responses ranged from seven to 26 years.

Figure 6 (Q 2: How long have you been in your current role?)



Figure 7: (Q 4: Are there specific challenges that stand in the way of your job?)



Figure 7 provides a visual representation of participant responses to specific job challenges. Recurring words gap, policy, diversity, challenge, and problem.

### **Diversity Interview Responses**

#### Language and Complexity

Each participant was asked three open-ended questions about their role as DEI leaders and their perspective of diversity. All questions were intended to determine the degree to which participants were familiar with the language of complexity which has been used in scholarly and non-scholarly sources for more than a decade.

When asked (Q.5), “Are you familiar with the acronym VUCA?” only one person reported being familiar or having heard of this acronym. The one respondent who acknowledged hearing of VUCA added, “but not certain of the meaning.” (Q. 6) asked, “Do you have an idea if diversity is VUCA, particularly complexity?” After being provided with an explanation of each of the components of VUCA, all seven participants reasoned that diversity was a complex problem. When asked (Q. 7), “What is your idea of complexity?”, two respondents indicated

complexity has many variables, one respondent indicated complexity does not have a clear cause and effect, three respondents indicated complexity has interconnected or external factors, while one respondent referred to complexity has “a lot of minutiae” to navigate. Table 4 presents a summary of the responses for all participants.

Table 4: DEI leaders’ understanding of complexity.

Participants	Question 5: Are you familiar with the acronym VUCA?	Question 6: Do you have an idea if diversity is VUCA, particularly complexity?	Question 7: What is your idea of complexity?
1.	I am not familiar with that term. VUCA	As you explained the term VUCA I would have to say diversity is a complex problem.	A problem with many variables and issues on many levels.
2.	I have heard the term before but not certain of the meaning. VUCA	I would say diversity is a complex problem.	Complexity does not have a clear cause and effect.
3.	I am not familiar with that term. VUCA	I would say in the categories that I heard you articulate that this is at least a complex one, so it is at least complex.	There are multiple routes to the elements of a problem, and the multiple roots depending on where you start, provide an access to make the argument.
4.	I am not familiar with it, but I am interested to hear your explanation. VUCA	100% think it is a complex issue for sure	What are the problems? What are the solutions? How do all those things work together?
5.	I am not familiar with that term. VUCA	Oh yes, definitely.	Thinking about complexity, there are external factors that work on conditions.
6.	I am not familiar with the term. VUCA	I think it is a complex problem.	So, I think that like all of these different things are connected and they are different words that get at the same problem.



7.	I am not familiar with the term. VUCA	Diversity is indeed complex.	Complexity has a lot of minutiae to navigate to understand the problem.
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Figure 8: (Q 5: Are you familiar with the acronym VUCA?)



Figure 8 denotes participants’ knowledge with the acronym VUCA. The dominating text is not familiar.

Figure 9: (Q 6: Do you have an idea if diversity is VUCA, particularly complexity?)



Figure 9 provides a visualization of participant perception of diversity in the context of VUCA. The most dominate words being complex.

Figure 10: (Q 7: What is your idea of complexity?)



Figure 10 provides a visualization of participant perception of complexity. Predominant words displayed problem, variables, connected, and complexity.

### Understanding of Systems Thinking

All participants were asked three questions about their understanding of systems thinking as a framework for appreciating diversity and as a methodology for formulating the challenges diversity posed within their organization.

When asked question (Q. 8), “Are you familiar with Cynefin?” none of the seven participants responded they had heard of this term. When asked question (Q. 9), “How do you see diversity?” Four of the respondents see diversity as being broad and encompassing factors both seen and unseen, such as gender, race, and religious beliefs. Three of the respondents indicated that diversity goes beyond visible metrics such as gender and race. When asked (Q.10), “What kind of problem is diversity?” all seven respondents had varying responses but

acknowledged diversity was a complex problem. Table 5 presents a summary of the responses for all participants.

Table 5: DEI leaders' of HEIs understanding of systems thinking.

Participants	Question 8: Are you familiar with Cynefin?	Question 9: How do you see diversity?	Question 10: What kind of problem is diversity?
1.	I am not familiar with the term.	Diversity goes beyond what you can see. It encompasses many factors. It is gender, it is veteran status. It is disabled. It is everything.	I believe it is an issue at every level. I think that it is a complex issue. whether it is entry level positions from a diversity perspective all the way up through senior management.
2.	I am not familiar with the term.	Who is represented essentially, I think about diversity. Whether it is race, or gender, or religious identity and so on.	Diversity is complex. I think it is closely tied with inclusion. You can include somebody and say you know you are allowed to be here, and I think you can show up there, but you cannot feel included.
3.	I am not familiar with the term.	A consequence of a variety of elements, like a matrix of things coming together.	It is at least a complex problem.
4.	I am not familiar with the term.	I think about differences even among homogenous groups such as gender and race. Diversity is more than visible differences.	I 100% think it is a complex issue for sure.
5.	I am not familiar with the term.	Diversity is broad and has a lot of subtleties. Whether you are talking about religion or about underrepresented	I believe the context of diversity is difficult and has a breadth of complexity.

6.	I am not familiar with the term.	Diversity is a macrocosm of both seen and unseen differences.	Diversity is complex and subject to the personal perspectives of individual stakeholders.
7.	I am not familiar with the term.	In the professional setting I see diversity as a metric of gender, race, age, ethnicity, physical ability, sexual orientation, religious beliefs, and so on, as a starting point.	Diversity is complex and broad.

Figure 11: (Q 8: Are you familiar with Cynefin?)



Figure 11 exhibits participant familiarity with the term Cynefin. The dominating text being not familiar.

Figure 12: (Q 9: How do you see diversity?)



Figure 12 highlights how participants see diversity. Text resonates throughout the graphic differences, gender, race, religion, and professional groups.

Figure 13: (Q 10: What kind of problem is diversity?)



Figure 13 provides a visual of participant perception of what kind of problem diversity is. The most prominent text is complex, being iterated by all seven participants.

#### Problem-Solving Approach

Participants were asked three questions about their problem-solving approach including how they defined diversity and how their methodology tried to solve the problems that characterized it.

When asked questions (Q.11) “How do you think about this problem?” Each of the seven respondents indicated varying ways and reasons for how they think about this problem. One person remarked, “Whether it's a problem, what the problem is, what the solution is, how you put all of those things together, I think vary, depending on people and institutions.” Another respondent stated the problem “was predictable and literally a reflection of exactly the system that was created.” When asked question (Q.12) “How do you define diversity?” Each of the

seven respondents described diversity and their approach to problems from differing perspectives. One respondent stated, “Diversity encompasses acceptance, accommodation, and access.” Another noted, “When I am thinking about diversity, I am looking for someone different from me. Someone that can teach me something.” When asked question (Q.13) “How are you solving your problems?” several cited uses of a framework. One respondent noted “I try to think about it from a holistic perspective. What is the main problem, what are other implications to consider?” Another remarked, “I think that there are lessons you can take from a dialogue model, which really involves, you know, setting up the problem. I think about the context, I think about what framing I have done ahead of time to set it up a conversation.” Table 6 provides a summary.

Table 6: DEI leaders’ of HEIs use of systems thinking.

Participants	Question 11: How do you think about this problem?	Question 12: How do you define diversity?	Question 13: How are you solving your problems?
1.	So as an organization one, you need to be open to making sure that you truly understand that this is an issue.	When I am thinking about diversity, I am looking for someone different from me. Someone that can teach me something.	Whether something is simple, complicated, complex, or, you know, ambiguous, really. So that is really my approach now, so I have been learning along the way.
2.	It is really to me much more about policy. It is about how do we create systems, that we can have conversations and I think that culture does matter, and we change that.	Diversity has come to equal race has come to equal black. But for me, based on my experience, that is not at all how I see it. I really, truly mean diversity in the broadest sense.	I think that there are lessons you can take from a dialogue model, which really involves, you know, setting up the problem. I think about the context, I think about what framing I have done ahead of time

			to set it up a conversation.
3.	Well, it is a predictable problem. It is a problem that is not about hiring at the senior level. It is a structural pipeline matter. It is literally a reflection of exactly the system that was created.	In terms of people of color, first generation folks, women in certain fields, LGBTIQ folks, people with disabilities. Basically, people of varying backgrounds and experiences.	There are multiple routes to these elements of a problem, and the multiple roots depending on where you start, provide of an access to make the argument.
4.	I think it is complex. Locally, I think it might be chaotic in a more macro sense because everybody has their own idea of what the problem is. Whether it is a problem what the problem is, what the solution is, how you put all of those things together, I think vary depending on people and institutions.	What diversity means, what the value of diversity is and acknowledge that it can vary from place to place. We cannot minimize it and simplify it to be something where you know we just want people that look differently.	Thoughtful, open discussion with people who want to approach it from a solutions-oriented perspective and figure out like at its basic level, what does it mean to us? Then if we can establish kind of like what is that basic level and that basic why? Then I think that we can start to build strategies.
5.	I think that it is just so broad, and I think there are multiple ways to connect with DEI and it is around helping find the doorway for different people.	It is very broad, and people often either want to pigeonhole it to be one thing and it is not.	I try to think about it from a holistic perspective. What is the main problem, what are other implications to consider.
6.	It is not just about numbers when it comes to diversity. There is more to it than having a specific person to check off a box.	Diversity encompasses acceptance, accommodation, and access.	I try to understand the why or what is impacted.
7.	Diversity is a wide range of often ambiguous definitions and perspectives.	I view diversity as a composition of differing perspectives and experiences.	What are the issues? Who needs to be involved. Where are we now and where do we want to be?



Figure 14: (Q 11: How do you think about this problem?)

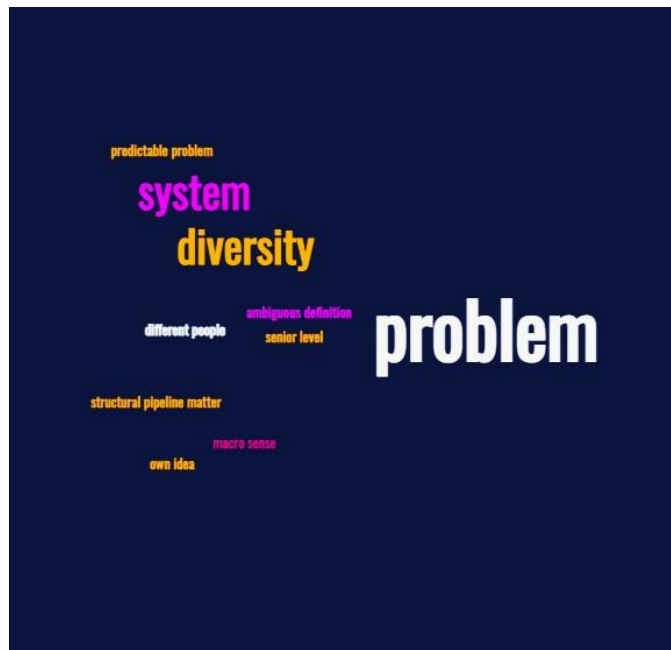


Figure 14 highlights how participants think about the diversity problem. Many different texts appear, predominantly think, problem, diversity, people, matter, and ambiguous.

Figure 15: (Q 12: How do you define diversity?)

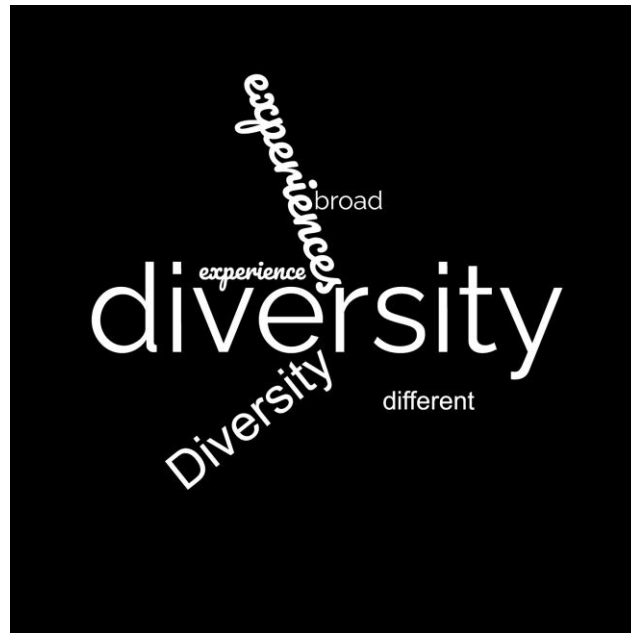


Figure 15 is a visual representation of how participants define diversity. The most frequently recurring text was diversity, people, and experiences.

Figure 16: (Q 13: How are you solving your problems?)



Figure 16 provides a visual presentation for how participants think about problems. Highlighted text is problem, think, approach, and perspective.

## **Summary**

This chapter discussed the study's findings and identified themes regarding the lived experience of seven Chief Diversity Officers at higher education institutions. Themes emerged from participant responses to specific interview questions aimed at understanding their perspective of DEI and of systems thinking.

## CHAPTER 5

### DISCUSSION

#### Introduction

In this dissertation, research has been presented that argues that HEI campus leadership, including a diverse faculty, plays an essential role in achieving inclusive institutions. Academic decisions and pedagogy by faculty members can foster inclusive environments, as can the way leaders interact with students. Furthermore, students report that they must see themselves reflected in the faculty and curriculum they are exposed to feel a sense of belonging and inclusion (United States Department of Education Office of Planning, Evaluation, and Policy Development, 2016).

Literature has also been presented and it has been argued that establishing and sustaining leadership diversity within HEIs is a complex systems challenge. From this premise it has also been argued that those responsible for leading efforts to establish and sustain diversity within HEIs, referred to as DEI leaders, should adopt a mindset of systems thinking and apply problem solving methods and tools informed by systems thinking because the mode of thinking helps in the effective navigation of complex challenges (Jackson, 2019), the kinds of challenges that characterize DEI policies and practices within HEIs.

From the perspective that a particular cognitive mode is important to be able to address the challenges of diversity, equity, and inclusion, three research questions were formulated: First, do DEI leaders of HEIs acknowledge that diversity is a complex systems challenge? Second, do DEI leaders of HEIs adopt a mindset of systems thinking to establish and sustain leadership

diversity? Third, do DEI leaders of HEIs apply problem solving methods and tools informed by systems thinking to establish and sustain leadership diversity?

To respond to research questions, data were gathered by conducting semi-structured interviews with DEI Leaders at HEIs. A series of questions were posed to each participant regarding their background and perceptions of their work, and how they thought about and made choices concerning diversity challenges. The questions were designed to gain an understanding of the degree to which these leaders think about DEI generally, DEI problems, and if they approach these problems from a systems perspective. In particular, the questions were intended to determine if they acknowledged that establishing and sustaining leadership diversity is a complex systems problem, and if so, whether this kind of challenge required cognitive proficiencies including a mindset of systems thinking, and the methods and tools informed by this approach to address diversity at the senior leadership level.

### **Interpretation of Results**

The interviews posed thirteen questions divided into four groups. First were four questions about participant demographics and their perceptions of the challenges of DEI. Second were three questions concerning the degree to which the participants were familiar with the language and concepts of complexity. Next were three questions that asked the participants about their understanding of systems thinking. Finally, there were three questions that asked about the problem-solving approaches and methods that were used to address the challenges of diversity.

#### Demographics and Perceptions

The responses to the first group of questions showed that participants had a wide range of time related to their role as diversity leaders in HEIs; the average time reported was 15.85 years

with a range from 7 to 26 years. The data showed that regardless of the number of years' experience, each of them acknowledged DEI is a difficult challenge at their institution. Although there were varying challenges expressed, they suggested they had to address three recurring themes: needed policy changes, equitable pipelines, and acknowledgement of the foundational issues by administrators. The literature review presented in Chapter 2 supported participant perceptions. Kim, (2013 as cited in Tiggs, 2018) suggested institutions may wish to consider how historical and current policies and practices may serve as barriers to diversity goals. They could also consider various parts of the pipeline, including how they may expand the hiring pool for administrators and faculty, as well as programs that support and retain diverse administrators and faculty. Kim (2013) further suggests interventions such as developing pipelines will significantly increase the diversity of faculty and senior minority executives through new hires and improved retention efforts. Creating pipelines for developing senior minority executives should be a high priority and should be related to the core values of the institution.

When asked (Question1) "How Did you get into DEI work?" respondents reported that this was not their specifically chosen career pursuit; rather, they had previously accepted a job for which DEI became part of their role. As noted earlier in this dissertation, because of increasing turbulence in the environmental context, e.g., general social unrest surrounding police brutality and a global pandemic, multiple implications and new challenges within higher education have emerged. One is that diversity, equity, and inclusion (DEI) has become immediately critical and relevant. For the DEI leaders, this assumption of role responsibility creates a complex challenge due to inadequate understanding of the leadership responsibilities they are assigned. Azikiwe (2020) described HEI leaders who are placed in roles without adequate understanding or preparation about what they are stepping into. often know little or

nothing of what is necessary to be successful in the role. Regarding DEI leadership, it seems difficult for HEI leaders to understand the complexity of difficulties they are facing without a fundamental level of preparation such as by adopting a systems mindset. As well, the literature argued that diversity, inclusion, and equity are critical to driving organizational excellence, and the belief in these principles by HEI leaders and stakeholders must be part of the fabric, framework, and culture of an organization (CUPA-HR 2022). However, too often, the terms "diversity," "equity," and "inclusion" are not defined precisely, making their meanings and implications open to individual interpretation (German, 2020).

When asked (Question 3) “On scale from 1-5 is Diversity difficult to manage here?” The average rated difficulty on the 5-point scale was 4.8 (Very High). Arguing that diversity is a complex challenge and informed by Snowdon and Boone’s (2007) (Cynefin Framework Chapter 1, Figure 3), this very high difficulty rating is not surprising. DEI as a complex challenge is characterized by unpredictable change, solutions that may not be obvious, and no discernable relationship between cause-and-effect. Snowdon and Boone (2007) suggested that to navigate such problems, a leader should "Probe - Sense - Respond" rather than attempt to control the situation or impose a predetermined approach. DEI leaders are advised to be patient, look for patterns, and encourage emergent outcomes. Groves and Vance (2015) have noted that nonlinear thinking style compared to linear thinking style is preferred for decision making and problem solving in complex situations.

### Language and Complexity

When asked about the language and meaning of complexity and complex contexts, participants had little familiarity; and when asked (Question 5) “Are you familiar with the acronym VUCA?” only one person reported having heard of this acronym. After participants

were provided with an explanation of VUCA (volatile, uncertain, complex, and ambiguous), all participants reasoned that diversity was a complex problem. However, their conceptions of the meaning and implications of a complex problem were limited. When asked (Question 7), “What is your idea of complexity?” two respondents described complexity as having many variables; one respondent indicated complexity does not have a clear cause and effect; three respondents indicated complexity has interconnected or external factors; and one respondent referred to complexity as having “a lot of minutiae” to navigate. Pourdehnad and Starr (2015) stated those who study such contexts agree that a complex system is defined more by relationships than by its constituent parts. Furthermore, when the context is complex or chaotic the challenge cannot be simplified or reduced to individual elements (including root causes) without losing the meaning of what is occurring or what to do. Snowden and Boone (2007) state, Complex contexts are often unpredictable, which is why it is important to "Probe - Sense - Respond." Rather than attempting to control the situation or impose a predetermined approach, it is more effective to be patient, look for patterns, and encourage emergent outcomes.

In terms of understanding the meaning and implications of a complex issue, a leader must first have some understanding about various kinds of contexts and consider the differences between a problem that is complicated (well-ordered/structured) and complex (poorly ordered/unstructured). If a leader fails to recognize that a problem’s context is complex and mistakenly applies simple or complicated analytic improvement methods and tools, these efforts will likely fail and can make the problem worse because a problem in a complex context is qualitatively different from one that is in a complicated context (Goldstein, Hazy & Lichtenstein, 2010). Moreover, if diversity is a complex problem and HEIs operate in complex contexts, then



a non-linear and systems approach is appropriate to formulate the challenges and to inform methods of intervention and problem solving (Starr, 2020a; Anand, 2019).

In a complicated context, a problem may have many parts and subparts so causes and effects may be difficult to see because they are indirectly linked. While problems in an ordered complicated context continue to be presented, an increasing number of leadership challenges are occurring in unordered complex contexts and occasionally chaotic contexts. Discerning the context in which a problem or opportunity is located becomes essential for proper problem formulation (Snyder, 2013 as cited by Starr, 2020).

Starr (2020) noted, leadership for a complex problem is informed by systems thinking which has certain characteristics. These include that the elements within an organizational system include people, events, and influencing forces; there are interconnections and interdependencies among the elements; the elements – people and groups – have their own purposes; and the organizational system as a whole has a primary function or purpose that cannot be attained by any of the elements alone, but which emerges from the interactions of all the components. Pourdehnad and Starr (2020), describe problem solving and decision-making approaches based on context and Starr (2015) presented a summary of the problems and opportunities characteristics that depend on context (Table 7). Informed by this, the best approach for a complicated challenge is to “keep it simple, stupid (KISS)” by reductionism, and for a complex or chaotic problem it is best to “look at whole situations (LAWS)” by expansionism.

Table 7: Table of KISS AND LAWS (Starr, 2015)

Characteristic	Obvious or Complicated	Complex or Chaotic
Governance	Management	Leadership
Mindset (thinking framework)	Analytic and rational	Systemic and intuitive
Control	Predict and forecast	Anticipate
Focus	Parts and details	Relationships
Perception	Data analysis (collect the dots)	Pattern recognition (connect the dots)
Problem solving	Analytic, deductive, and inductive	Design and abductive
Approach	Reduce	Expand
Mnemonic	Keep it simple stupid – KISS	Look at whole situations- LAWS

Starr (2020) and Jackson (2019) noted that when navigating complex problems, leaders must possess additional cognitive capacities for organizational improvement; namely, systems thinking because this mindset and the methods and tools derived from it enables them to consider the whole system rather than only focusing on the parts (Shaked, Haim and Schechter, & Chen, 2020).

### Understanding of Systems Thinking

To discern if HEI leaders first appreciated that contexts differed, and second that diversity was a complex concept within an unordered context, and third that this kind of problem context required thinking that was different from problems in a complicated and ordered context, three questions were posed about the Cynefin Framework and differing contexts.

After receiving some descriptive explanations, participants acknowledged that diversity is a complex problem which, it is argued, is best addressed by systems thinking. To gain an understanding of participant knowledge of systems thinking, all participants were asked about their thinking framework for appreciating diversity and their methodology for formulating the challenges diversity posed within their organization.

When asked (Question 8), “Are you familiar with Cynefin?” none of the seven participants responded they had heard of this term. When asked (Question 9), “How do you see (interpret) diversity?” Four of the respondents reported that diversity is broad and encompasses factors both seen and unseen, including gender, race, and religious beliefs. Three of the respondents indicated that diversity goes beyond visible metrics such as gender and race but were unable to articulate what this meant. When asked (Question 10), “What kind of problem is diversity?” all seven respondents had varying responses but acknowledged diversity was a complex problem. Despite being unfamiliar with the Cynefin framework they did describe a personal framework that helped them make sense of diversity. Participants were only able to contextualize their perception of diversity as something within a complex environment.

#### Problem-Solving Approach

A complex context is characterized by unpredictable change which makes linear thinking inadequate. Groves and Vance (2015) have noted that nonlinear thinking style compared to linear thinking style is preferred for decision making and problem solving in complex situations because it focuses on seven distinct, yet interrelated dimensions: intuition, creativity, values, imagination, flexibility, insights, and emotions.

Participants were asked three questions about their problem-solving approach including how they defined diversity and how their methodology was applied to diversity problems. When asked (Question 11) “How do you think about this problem?” Each of the seven respondents indicated varying ways and reasons for how they think about this problem. One person remarked, “Whether it's a problem, what the problem is, what the solution is, how you put all of those things together, I think vary, depending on people and institutions.” Another respondent stated the problem “was predictable and literally a reflection of exactly the system that was created.” When asked (Question 12) “How do you define diversity?” Each of the seven respondents described diversity and their approach to problems from differing perspectives. One respondent stated, “Diversity encompasses acceptance, accommodation, and access.” Another noted, “When I am thinking about diversity, I am looking for someone different from me. Someone that can teach me something.” When asked question (Question 13) “How are you solving your problems?” several cited using a personal framework. One respondent noted, “I try to think about it as a chain of problems by considering, “What is the main problem, what are other implications to consider?” Another remarked, “I think that there are lessons you can take from a dialogue model, which really involves, you know, setting up the problem. I think about the context, I think about what framing I have done ahead of time to set up a conversation.”

Diversity encompasses every aspect of life and is extraordinarily complex. Anand (2019) defines diversity as a mix of people’s intricate and evolving ways of learning to navigate decision-making, not as a simple combination of reductive classifications that can be placed into a box and checked off. Romero-Morgan (2020) reports the DEI world grows increasingly complex and more difficult to navigate. Moreover, if diversity is a complex problem and HEIs are complex contexts, then a non- linear and systems approach is appropriate to formulate the

challenges and to inform methods of intervention and problem solving. In this complex environment, then  $A \times B \times C \rightarrow$  co-produce and enable the emergence of diversity (Starr, 2020; Anand, 2019).

### **Responding Directly to the Research Questions**

*RQ 1: Do DEI leaders of HEIs acknowledge that diversity is a complex systems challenge?*

Based on the interview questions which posed inquiries about the nature of the context, and in discussions about the kinds of problems represented by DEI in higher education institutions, none of the participants demonstrated clear awareness or could articulate those contexts differed or that DEI was a problem in a complex context until this conceptualization was explained to them. Furthermore, none of the participants demonstrated that DEI within HEIs had specific characteristics that would define them as systems problems or that overall, they were dealing with a complex systems problem.

*RQ 2: Do DEI leaders of HEIs adopt a mindset of systems thinking to establish and sustain leadership diversity?*

The interview questions posed inquiries about their understanding of systems thinking as a framework for appreciating diversity and as a methodology for formulating the challenges diversity posed within their organization. None of the participants was familiar with the language of systems thinking. More pointedly, none of the participants was familiar with the Cynefin framework and its application as a sense making tool. However, after they were provided an explanation of the framework, each participant acknowledged diversity is a complex problem with a heterogenous composition of elements. This implies that although participants were not familiar with language of systems thinking they did perceive some elements of a systems

approach. However, holding a vague notion of systems and systems approaches is insufficient to navigate this complex challenge because what remained are problem-solving approaches for conventional simple or complicated problems.

*RQ 3: Do DEI leaders of HEIs apply problem solving methods and tools informed by systems thinking to establish and sustain leadership diversity?*

The interviews posed inquiries about their problem-solving approach including how they defined diversity and their methodology to solve the problems that characterized it. Implications of responses denote a lack of meaningful application of a comprehensive systems approach but does suggest appreciation of some aspects of systems thinking processes. Participants were able to contextualize their perception of diversity and expressed diversity lived in a complex environment.

## **IMPLICATIONS**

In this dissertation, I make several arguments: First, that establishing and sustaining leadership diversity within HEIs is a complex systems challenge. Second, complex systems challenges exist in an unordered and unstructured context that requires a shift in mindset from analytic thinking to systems thinking. Third, those responsible for leading efforts to establish and sustain diversity within HEIs, referred to as DEI leaders, should adopt a mindset of systems thinking and apply problem solving methods and tools informed by systems thinking.

The DEI leaders have acknowledged in interviews that diversity is a complex problem. Still, until appropriate language and meanings were provided, they did not freely suggest they were working in a qualitatively different context from other kinds of challenges. They did not separate complicated from complex contexts or problems and did not know there were different

modes of thinking that were appropriate within each. They were unaware that analytic thinking addressed problems that can be deconstructed to simple or root causes which is effective for complicated problems. They did not adequately describe that systems thinking aims to study wholes instead of parts, hence making it more effective at dealing with complexity. Additionally, they did not appreciate that systems thinking focuses on the emergent organizational properties and underlying patterns created by interactions among the system's components rather than the prevailing reductionist approach, which proposes to understand a problem by breaking it into smaller parts (Rosenberg, 2006).

After being informed about relevant concepts and language, participants acknowledge diversity is a complex problem, however none of them was able to demonstrate an understanding of systems thinking. This was anticipated by the literature presented in Chapter 2 which indicated the lack of diversity at the Senior Leadership Level in HEIs is informed by a lack of understanding of how best to address the problem.

Senior leaders hold the most privileged and influential positions within the administration of higher education. The impetus for this dissertation was inspired by my personal experience for growth and career achievement. I was honored to be accepted into a Leadership Development program at my institution. The program is a highly selective intensive program intended to engage and develop future University leaders. The University is dedicated to offering resources for professional development designed for future senior administration leaders.

The program was designed to delve into three major “Leadership Pillars,” or areas of leadership excellence described as Leading Self, Leading Others, and Leading Organization. The intersection of these the leadership “pillars” is where transformative leadership takes place. Transformative leadership occurs when all levels of the organization (front-level staff, mid-level

leaders and senior level executives) exhibit these three capabilities: leading self, leading others, and leading organizations and systems. The combinations of these capabilities can lead to improvements in teams, culture, and systems, which can collectively transform the organization (Braier, Danzig, Garrett, and Forsythe, 2019).



Figure 17: Model of Transformative Leadership (Braier, Danzig, Garrett, & Forsythe, 2019)

An important aspect of the program was the opportunity to develop relationships with individuals across campus in similar level roles. I quickly realized that these individuals were more than colleagues, they were also future competitors. I also recognized the room was mostly not reflective of me, at least not a visible representation, regarding race and ethnicity. However, the cohort was more reflective of the current senior leadership composition.

Literature supports that the importance of diversity in higher education leaders is reflective of their positions from a public policy and programmatic perspective (ACE Board of Directors, 2012). If individuals of differing compositional diversity have similar experiences and opportunities, then why doesn't that composition translate into the assumptions of occupied positions? This inquiry led me to formulate the purpose of this dissertation to improve understanding of the challenges of establishing diversity at the senior leadership level in HEIs.



Research shows that campus leadership, including a diverse faculty, plays an essential role in achieving inclusive institutions. Academic decisions and pedagogy by faculty members can foster inclusive environments, as can the way they interact with students. Furthermore, students report that they must see themselves reflected in the faculty and curriculum they are exposed to feel a sense of belonging and inclusion (United States Department of Education Office of Planning, Evaluation, and Policy Development, 2016).

Literature suggests DEI is a complex systems problem. While the literature on school leadership based on systems thinking reveals few results (see Hoban, 2002; Senge et al., 2012; Zmuda et al., 2004) systems thinking for successful education improvements is needed. Fullan's (2005) book, *Leadership*, offers an example of system thinking and sustainability. According to Fullan, System thinkers are necessary for organizational improvement because leaders who can address the whole system can address complex problems (Shaked, Haim and Schechter, & Chen, 2020). If DEI is indeed a complex systems problem, I argue that if those responsible for leading efforts to establish and sustain diversity within HEIs require specific leadership proficiencies informed by systems thinking. As Jackson (2019) argues, when in a complex context, systems thinking is the appropriate mindset.

A Systems perspective involves stepping back and seeing the whole picture as a dynamic interconnected social system. From this perspective, leaders can identify patterns and relationships they can leverage or disrupt to achieve positive systemic change. This is part of the theory of adaptive leadership (Heifetz et. al, 2009). Adaptive leadership entails the notion that to be influential, leaders must be acutely aware of what is happening in the system allowing them to learn, innovate, and evaluate solutions. Systems-thinking leaders approach their work with a diverse, equitable, and inclusive approach. Therefore, they need to be adept at creating a sense of

discomfort and tension around inequity that spurs people to act. In their continual quest to rectify inequities embedded in systems they seek to change, they should have a deep passion for and commitment to social justice (Equal Measure Brief, 2017).

Writing for the American Council on Education, Espinosa, Turk, Taylor, and Chessman (2019) described a comprehensive overview of higher education professionals, including full-time and part-time faculty, academic department heads, senior administrators, faculty, and support staff. The data show that college and university administrators, faculty, and staff have not evolved at the same rate as the student body regarding racial and ethnic diversity.

Approximately 45 percent of undergraduates and 32 percent of graduate students were students of color 2015-2016 (Espinosa et al., 2019); The group students of color include American Indians or Alaska Natives, Asians, Black people, Hispanics, Native Hawaiians or other Pacific Islanders, and students of more than one race. Despite this, these data indicate that the majority of faculty and key staff are white. Indeed, white faculty made up 71.0 percent of part-time faculty and 72.6 percent of full-time faculty in the Fall 2017 semester. The trend was observed among senior administrators, mid-level professionals, as well as nearly all full-time and part-time staff members. In terms of occupations, people of color are underrepresented across all positions and seniority levels, faculty, and staff.

### **Recommendations for HEI DEI leaders**

Higher education institutional diversity is a complex system problem and thus benefits from a systems-thinking approach to understand and to navigate. Those responsible for leading efforts to establish and sustain diversity within HEIs, referred to as DEI leaders, should adopt a mindset of systems thinking and apply problem solving methods and tools informed by this mode of cognition.

DEI leaders interviewed acknowledged diversity to be a problem and shared their perspective of their understanding of the problem. Starr (2020) noted that leadership for a complex problem is improved when informed by systems thinking a cognitive approach which has certain well-established characteristics. These include that within any organization there are interconnections and interdependencies among four elements: people, groups, the content of communications, and the context in which people interact. Furthermore, as a system, these elements are influenced by the broader context of culture, economics, politics, and many other forces in which the organization and its competing and peer organizations also function.

Through my interviews with DEI leaders, DEI problems are understood to be challenging but there was little understanding that they were either complex and systemic, and that the DEI leaders did not seem to know much about how to think in systems or use methods and tools derived from this thinking. This suggests their current efforts to solve problems rely on conventional linear problem-solving methodologies and are insufficient to solve complex DEI problems. From their responses there was also no evidence a systems-thinking approach is occurring within their own institutions. When the organization fails to think about DEI challenges in a systemic manner, there may be subsequent performance inadequacies by DEI leaders to fulfill their role responsibilities to lead DEI initiatives.

Given that after learning more about why DEI is a complex systems problem and being so requires systems thinking approach, what specifically should DEI leaders learn to address these kinds of problems? The answer seems to be, first, how to formulate problems using systems approaches, such by applying interactive planning and idealized design, and soft systems methodology; and second, how to apply some of the methodologies and tools informed by systems approaches. These tools include but are not limited to the Cynefin Framework, Iceberg

Model, and influence diagramming. These are stakeholder-rich so essential for diversity, and they are systemic so involve whole-context changes.

**Suggested Systems Approaches**

Interactive planning/idealized design

Interactive planning is a collaborative process that requires active engagement of stakeholders. Systems thinking pioneer Russell L. Ackoff developed the Interactive Planning methodology as a conceptual tool to guide complex problem solving of organizations (Haftor, 2011). Ackoff (2001) stated that interactive planning is directed at creating the future right now. It is based on the premise that an organization's future depends at least as much on what it does to itself as on what is done to it by external forces. This type of problem-based planning consists of designing a desirable, viable and feasible present and the selection or invention of ways of approximating this design as closely as possible. It creates its future – right now - by continuously closing the gap between where it is at any moment of time and where it would most like to be. Table 8 describes the six phases of idealization/realization.

Table 8: The six phases of idealization/realization (Ackoff, 2001).

<b>IDEALIZATION</b>	
<p>1. Formulating the Mess (Situational Analysis); What is the current reality of DEI at the organization?</p>	<p>Every organization is faced with a set of interacting threats and opportunities, a system of problems that we call a mess. The aim of this phase of planning is to determine how the organization would eventually destroy itself if it were to continue behaving as it is currently; that is, if it were to fail to adapt to a changing environment, even one that is perfectly predicted. Identification of this Achilles' heel -the seeds of its self-destruction -provides a focus for the planning that follows by identifying what must be avoided at all costs.</p>

<p>2. Ends Planning: What would the stakeholders want for DEI at the organization if they could have anything?</p>	<p>Determining what the organization would ideally like to be now if it could be whatever it wanted, determining the gaps between this ideal and the organization projected in the reference scenario. The remainder of the planning process is directed at removing or reducing these gaps taken collectively and interactively</p>
<p><b>REALIZATION</b></p>	
<p>3. Means Planning</p>	<p>Determining what should be done to remove or reduce the gaps identified in ends planning; that is, selecting or inventing the courses of action, practices, projects, programs, and policies to be implemented in pursuing the organization's idealized redesign of DEI.</p>
<p>4. Resource Planning</p>	<p>How much of each type of resource -facilities and equipment; materials, energy, and services; personnel; money; and information, knowledge, understanding, and wisdom -- will be required. When and where, to implement the means selected for the DEI design.</p>
<p>5. Design and Implementation</p>	<p>Determining who is to do what, when and where,</p>
<p>6. Design of Controls</p>	<p>How to monitor implemented planning decisions to determine whether they are producing expected results and, if not, determining what corrective action should be taken.</p>

Idealized design

Idealized design is an element of interactive planning and a way of thinking about change that is deceptively simple to state: In solving problems of any kind, the way to get the best outcome is to imagine what the ideal solution would be and then work backward to where you

are today. This ensures that you do not erect imaginary obstacles before you even know what the ideal is (Ackoff, Magidson, & Addison, 2006).

The spirit of idealized design is the pursuit of the ideal end by closing the gap between the current and ideal states (Ackoff, 1999). The current reality of participants is that creating and sustaining diversity is a complex challenge within HEI administration. "The way to get to the best outcome is to imagine what the ideal solution would be and then work backward to where you are today." An excerpt, based on Ackoff's experience, shows how the process worked at Bell Labs in the 1950s (Ackoff, Magidson, & Addison, 2006).

The idealized design process has three parts: (1) the formulation of a mission statement, (2) specification of the properties the designers want the designed organization to have, and (3) design of an organization that has these properties. Table 9 describes the three parts of the process.

Table 9: A Brief Guide to Interactive Planning and Idealized Design (Ackoff, 2001)

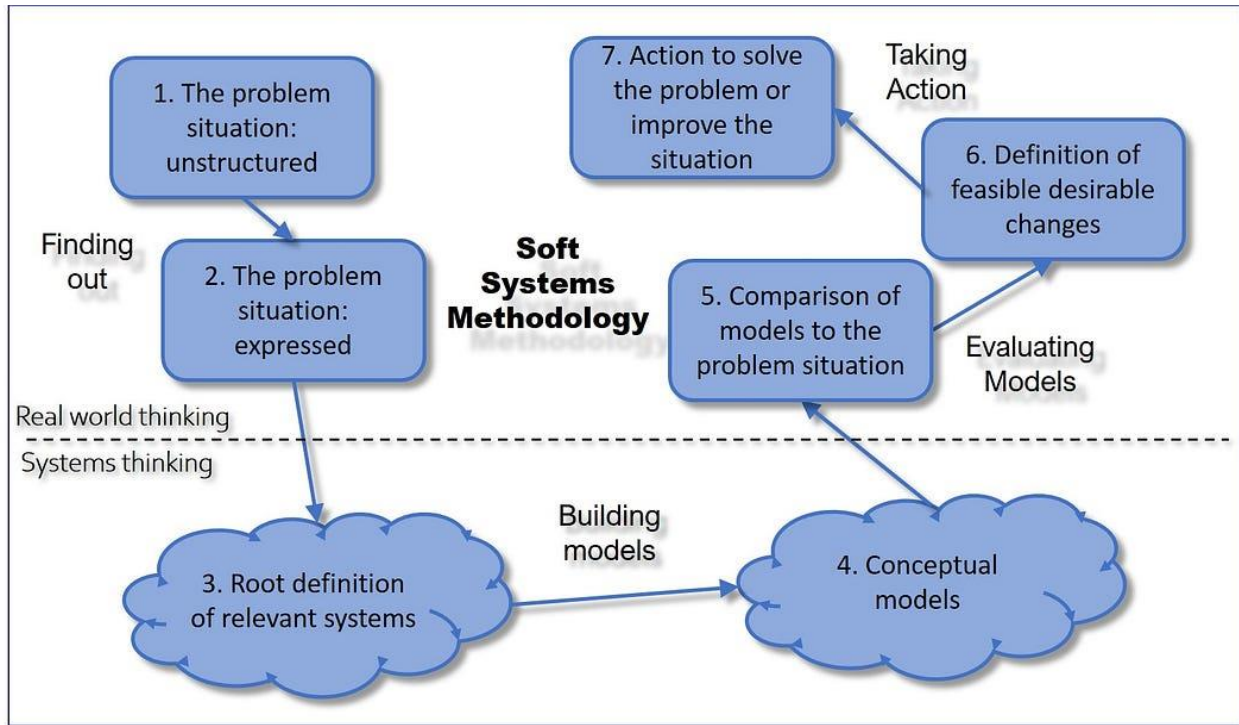
<b>IDEALIZED DESIGN</b>	
1. Mission	An organization's mission statement should be a statement of its reasons for existence and its most general aspirations. It should (a) identify the way(s) by which the organization will seek to be effective and unique, (b) unify all its stakeholders in the pursuit of one or more common purposes, and once formulated, (c) make a significant difference in what the organization does, and (d) make progress toward the organization's objectives measurable.
2. Specifications and Design	Specifications consist of a statement of the properties that the planners want the idealized organization to have. The design states how the properties specified are to be obtained. Put another way: specifications are aspirations; a

	design is a set of instructions on how to realize those aspirations.
3. Making Design Decisions	An idealized design is a group product. Therefore, the group preparing such a design requires a procedure for reaching design decisions. Such decisions should be made by consensus. Consensus means complete agreement. but agree in practice, not necessarily in principle. Agreement on what is the best thing to do is not required; only agreement on what is worth doing

Soft Systems Methodology

Soft systems methodology (SSM) is an approach for tackling problematical, messy situations of all kinds. It is an action-oriented process of inquiry into problematic situations in which users learn their way from finding out about the situation, to taking action to improve it. The learning emerges via an organized process in which the situation is explored using a set of models of purposeful action (each built to encapsulate a single worldview) as intellectual devices, or tools, to inform and structure discussion about a situation and how it might be improved (Checkland & Poulter, 2020).

Figure 18: Introduction to Soft Systems Methodology: A Holistic CI Approach (Clyde, 2020).



The soft systems process contains four kinds of activity and takes the form of a cycle. The process goes from finding out about a problematical situation to defining/taking action to improve it. The SSM cycle is shown in Table 10 is a classic representation and it contains four different kinds of activity:

Table 10: The SSM Cycle (Checkland and Poulter, 2020)

1. Perceived real world problematic situation.	Finding out about the initial situation which is seen as problematical.
2. Purposeful activity models (base on declared world views)	Making some purposeful activity models judged to be relevant to the situation; each model as an intellectual device, being built based on a particular pure worldview.
3. Structured discussion about change	Using models to question the real situation. This brings structure to a discussion about the situation, the aim of the discussion being to find changes which are both arguably



	desirable and culturally feasible in this particular situation.
4. Action to improve	Define/take action to improve the situation. Since the learning cycle is in principle never-ending it is an arbitrary distinction as to whether the end of a study is taken to be defining the action or carrying it out.

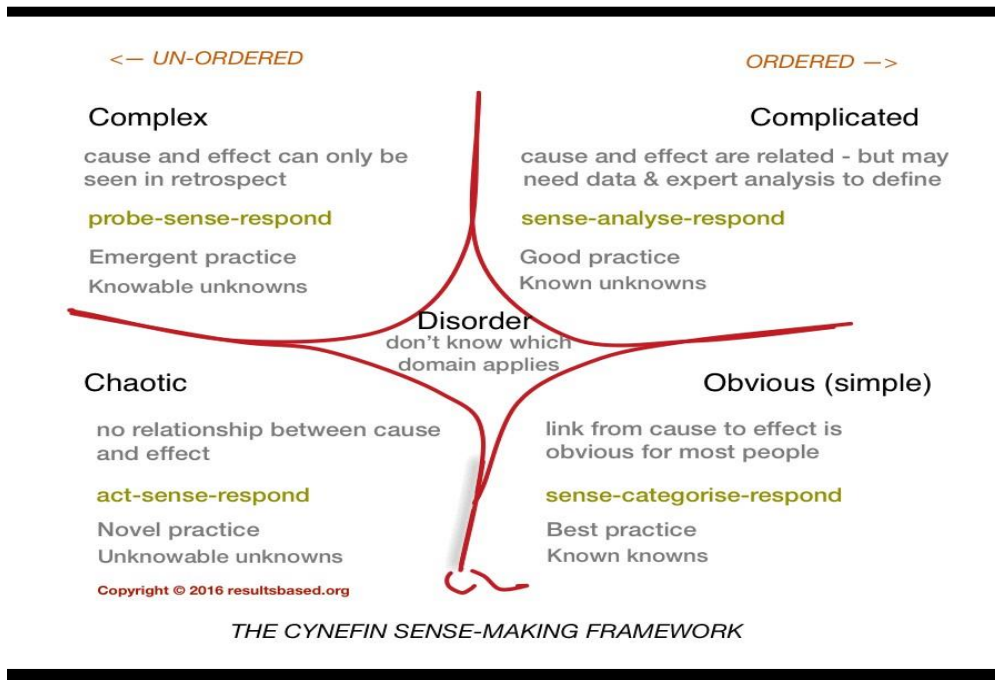
Soft Systems Methodology (SSM) is a methodological and theoretical systems approach that is most useful when addressing complex social problems (Midgley, 2006; Williams, 2005 as referenced by Griffith, Mason, Yonas, et al., 2007). Griffith, Mason, Yonas, et al. (2007) explain that the goal of SSM is to focus more critical thought about the world as it is versus how it might be, examining the situation in such a way that new learning emerges. For the DEI leader adopting the SSM approach influences critical thinking and has emerged to be a useful strategy to create systems change when there are multiple assumptions and logics about the root causes of the issue.

**Systems Tools**

Cynefin Framework

The Cynefin Framework is a tool for leaders to use in their decision making (Snowden & Boone, 2007) that can help discern the context characteristics in which a challenge such as DEI exists. Described as a “sense-making framework that is socially constructed from people’s experience of the past and their anticipated futures” the framework helps to understand that many of the characteristics of DEI within an organization may be in an unordered context which makes the problem complex and sometimes chaotic. This means that good or best practices may have limited value to solve problems, and that instead effective solutions must emerge from systems-informed processes such as interactive planning and SSM (Andreas, 2023).

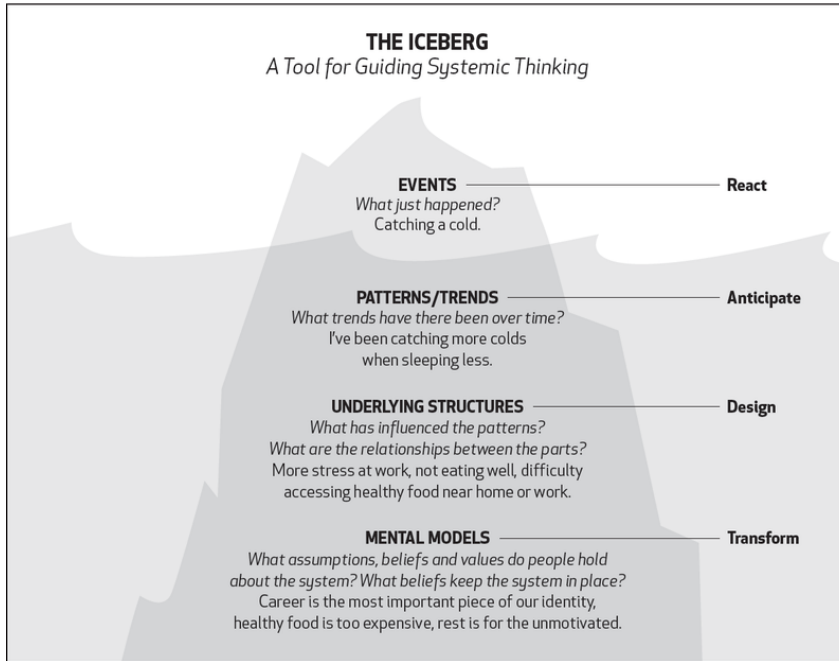
Figure 3. Cynefin Framework (Snowdon & Boone, 2007)



Iceberg Model

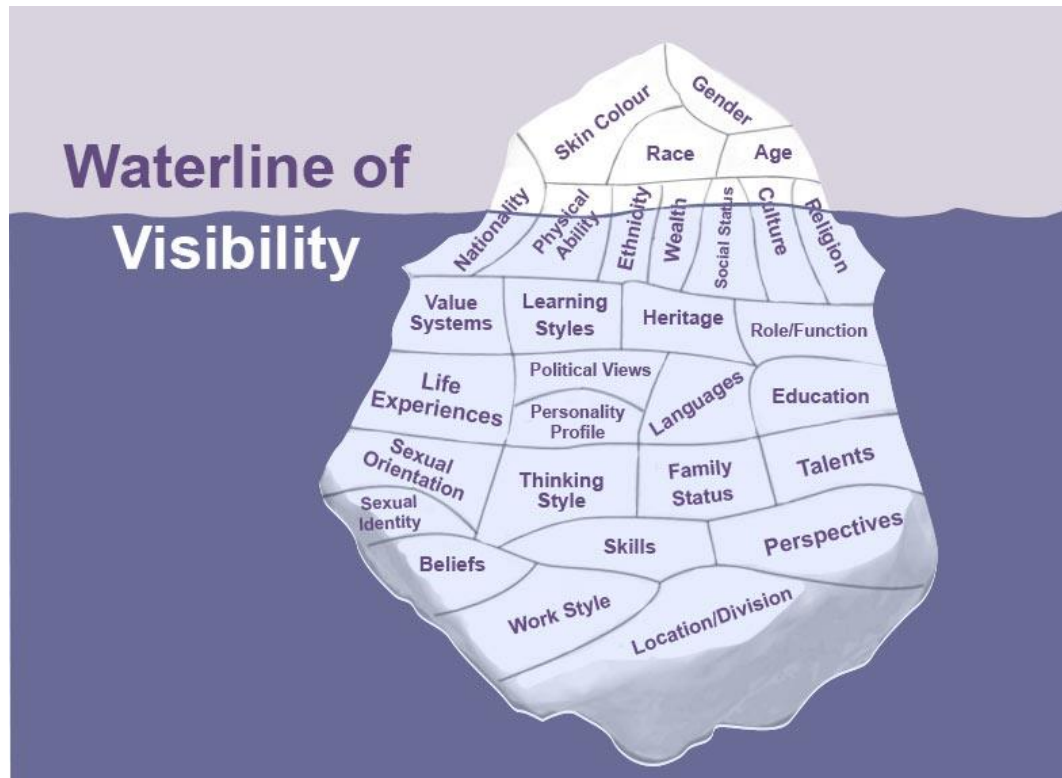
This systems tool presents components of a problem or event in terms of levels of influence (Figure 20). The Iceberg model moves the DEI leader into systems thinking by encouraging inquiry into how DEI symptoms and observed situations are influenced by deeper and more powerful forces (Helm-Murtagh & Erwin, 2022). A leader informed by this model can combine observations about the external environment with the facts and realities of the current environment to inform conclusions about the system as a whole (Helm-Murtagh & Erwin, 2022).

Figure 9: Iceberg modeling of catching a cold (Iceberg Model: Learn about the theory and practice of Systems Thinking 2023).



The Iceberg model may be beneficial to DEI leaders to understand how behavior is anchored to thoughts, beliefs, and experiences that are more difficult to see. For DEI leaders the iceberg model helps to create understanding that the deeper nature of the problem is below the surface and requires deeper understanding before selecting responses. Transformation lies in the thinking that created the structure, which drove the pattern, which caused the event (Egbude, 2022). Figure 20 is a depiction of visible and not visible aspects of diversity.

Figure 20: Iceberg Model depiction of visible and not visible aspects of diversity  
(Source: Brook Gram as referenced by Butts, 2012)

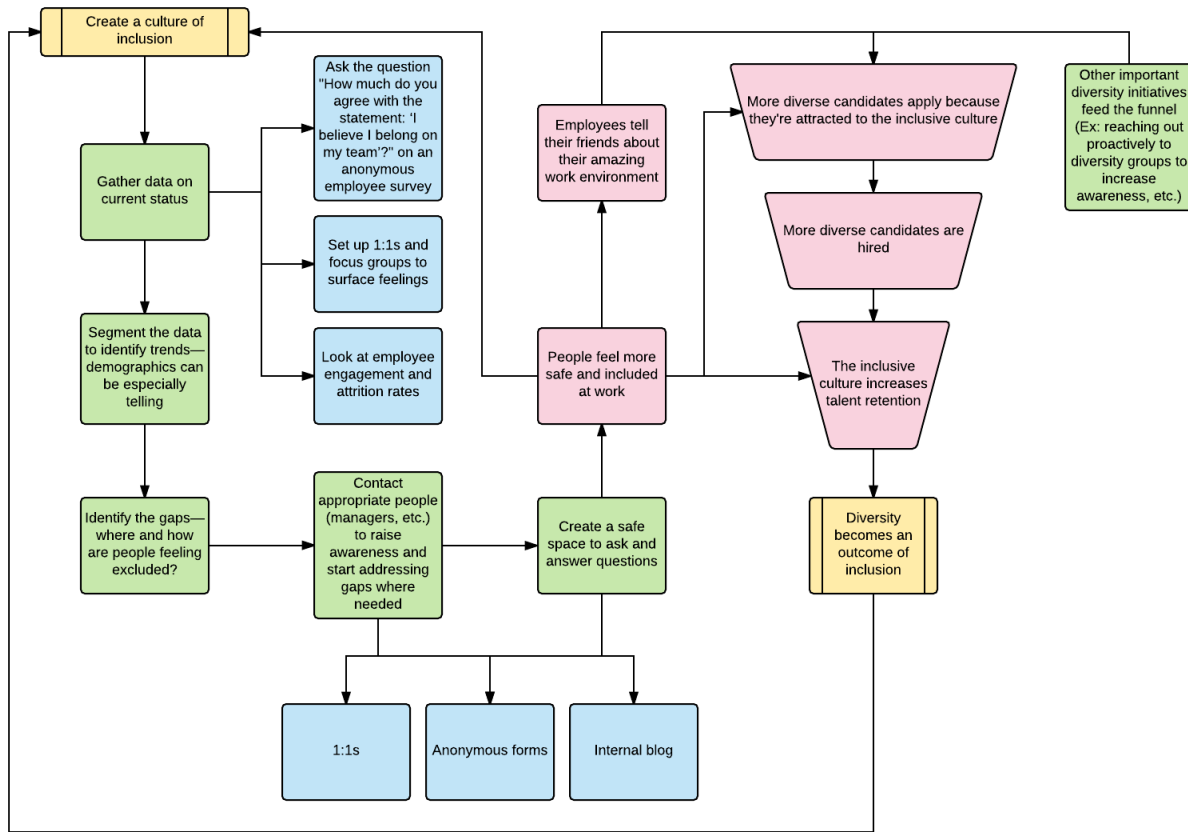


### Influence Diagramming

Systems thinking is a cognitive framework for seeing inter-relationships among elements rather than focusing only on the elements, and for seeing patterns of change rather than static snapshots. Systems thinking helps a DEI leader to understand why DEI problems at an organization emerge and persist by understanding its function in the whole context of an organization's performance (Hammond, 2005). An influence diagram is a tool for identifying and capturing the important relationships or influences that exist between the elements of a system (Burge, 2011). Influence diagrams can clarify the context, the situation, communicating

with others about those relationship, planning to deal with a situation, both logically and creatively, and implementing, monitoring, and evaluating those plans (Hudson, 1999). Figure 21 is an example of how a DEI leader may utilize an influence diagram to explore implementation of a diversity initiative.

Figure 21: DEI leader may utilize an influence diagram (Lucid Charts 2023)



### Recommended Leadership Training

The DEI leaders who participated in this inquiry acknowledged diversity is a complex problem. However, they were unfamiliar with what it meant to deal with this kind of challenge, and they needed to become more familiar with systems thinking or how to adopt a systems-thinking mindset to navigate these problems.

To move forward, DEI leaders should be able to apply relevant concepts and tools to tackle their problems. Learning and using relevant frameworks and tools discussed in this document will enable DEI leaders to examine and address their problems more fully and accurately. To accomplish this goal, I recommend DEI leaders should participate in a comprehensive learning Masterclass to develop complex systems leadership proficiencies. When problem context shifts from complicated to complex, the enlightened leader recognizes this. Rather than only focusing on individual, goal-directed and context-independent competencies to influence followers, the leader adapts by changing his/her mindset and seeks novel and emergent outcomes that focus also on improving organizational performance. To make this mindset change requires different leadership capacities and proficiencies than described as the prevailing traits, and skill, style, and behavior competencies (Starr, 2020).

The Leadership Masterclass is designed to ensure that those responsible for leading diversity initiatives go through comprehensive training to learn how to formulate problems using systems approaches, such by applying interactive planning and idealized design, and soft systems methodology; and second, how to apply the methodologies and tools informed by systems approaches. Azikiwe (2020) recommended a similar model by creating a Faculty Leadership academy to help faculty transition into management roles. Faculty members who then enter management roles often do so because they are thrust into those positions, despite lacking sufficient preparation for a job that differs from the teaching and research jobs for which they were hired. The academy is meant to provide faculty with essential skills they do not currently possess to address their transition faculty managers appropriately and accurately.

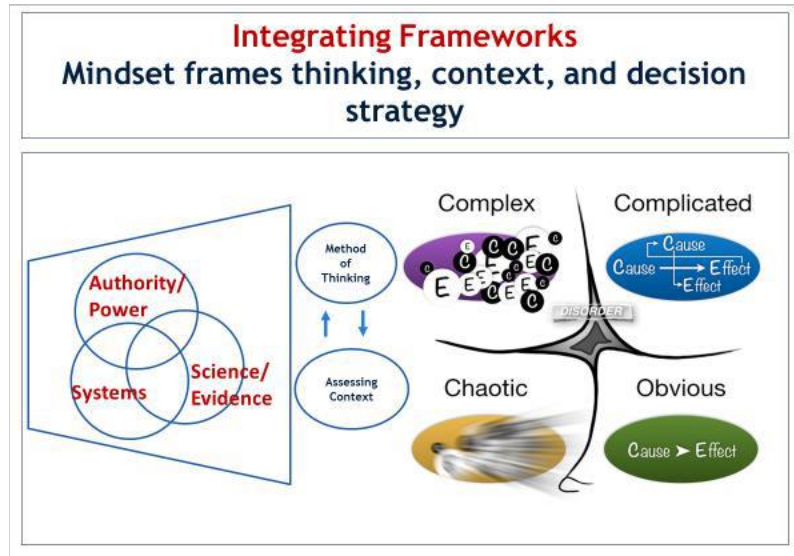
The objectives of the master class will be a related model to develop DEI leader's mindset of systems thinking and apply problem solving methods and tools informed by systems thinking.

Starr (2018) suggests two frameworks that may improve understanding of strategic thinking, strategic decision making, and strategic leadership. The first is the Epistemology Framework. The second is the Cynefin Framework. This paper recommends applying these concepts to improve DEI leaders' understanding and use of Systems thinking when addressing the complexity of diversity in HEI. Epistemology refers to the theory of knowledge and describes how people separate beliefs, what they hold to be true, from opinion, their view or judgment not necessarily based on knowledge or fact. The proposed framework includes the sources and scope of knowledge, and the criteria used for justification. The framework has three characteristics: mindset, method of thinking, and method of deciding (Starr, 2018). Furthermore, Starr (2018) hypothesizes an epistemology framework as a structure to explain how a person knows or understands a problematic situation or an experience in the current reality. The second, The Cynefin framework argues that complicated and complex are not merely different, they are qualitatively separate because complexity exists in an unordered environment. Operating in this context requires a systems mindset, mode of thinking, and decision making (Starr, 2018). The framework holds the premise that problems exist in differing contexts and to effectively solve a problem requires applying the mindset, method of thinking, and method of problem solving that match the context (Starr, 2018).

Starr (2018) recommends the two frameworks may be integrated in terms of sequence and consistency of premises (Figure 22). The Epistemology framework argues that mindset/world view is the fundamental cognitive orientation encompassing the whole of one's knowledge and point of view. Therefore, I suggest that one's perception and understanding of a problem or opportunity is first framed by one's mindset. Then holding this perspective, one's

method of thinking and assessment of situation context become relevant informers of decision making.

Figure 22: Integrated Frameworks (Starr, 2018)



Ultimately the Masterclass will allow DEI leaders to develop a Systems thinking mindset and to gain techniques for mapping complex systems, identifying the root causes of a problem, establishing a shared view of the system, and reframing problems from different perspectives to uncover new solutions. Find the right problems to solve and pick the best solutions to experiment with.

## Conclusion

This dissertation has provided insight into the challenges of establishing and leading diversity initiatives by senior leadership in HEIs. Establishing and sustaining leadership diversity within HEIs is a complex systems challenge. I argue that those responsible for leading efforts to establish and sustain diversity within HEIs, referred to as DEI leaders, should adopt a mindset of systems thinking and apply problem solving methods and tools informed by systems thinking.



While the DEI leaders who participated in this inquiry acknowledged diversity is a complex problem, they were not familiar with what it meant to be dealing with this kind of challenge, nor were they familiar with systems thinking or how to adopt a systems-thinking mindset to navigate these problems. I argued that the pathway forward is to enable DEI leaders to examine and address their problems more completely and accurately by enabling them to learn relevant concepts and to apply relevant tools (Goodman, 2018). Creating and sustaining diversity in Higher Education Institutions is a complex problem and, therefore, is best addressed by utilizing systems thinking approaches, methodologies, and tools. Without improving the understanding of DEI leaders about how to think about, formulate, and navigate these kinds of problems, efforts to address these challenges will not go far enough; they will remain inadequate.

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