A WICKED PROBLEM: EVAULATING TENSIONS IN CAREER EXPLORATION FOR UNDERGRADUATE STUDENTS

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ABSTRACT

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Title: A Wicked Problem: Evaluating Tensions in Career Exploration for Undergraduate Students

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College is no longer a haven for self-exploration and identity formation. External factors including university policies, labor market trends, and parental expectations have led to increased pressure on students to identify and pursue their careers earlier in their lifetime, specifically during their time in college. Career exploration for university students is a complex issue with tensions arising between several stakeholders like university administrations, faculty, advising staff, parents, and students. This thesis identifies and evaluates those tensions while analyzing them using the Wicked Problem theoretical framework.

First, I will define wicked problems and the current state of student career exploration. Then I will highlight factors that impact career exploration in higher education and how they contribute to the current failure to effectively provide career exploration in higher education. Each section contains an overview of the specific topic, an analysis of said factor's current operationalization, and a discussion on the factor effects career exploration. Additionally, each section features evaluation of the discussed factor's role in the wickedness of the problem that is career exploration in higher education. Finally, I will discuss the importance of analyzing career exploration through the wicked problem framework and provide recommendations for future evaluation of the problem.

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Introduction

Higher education has long been considered to be an avenue of individual betterment and an ideal for young adults to reach. Aristotle wrote that “education is the best provision for life's journey.” College is associated with the identification and pursual of one’s life direction. Reverend Edward A. Malloy remarked in his book *Monk's Reflections* that “a college degree is not a sign of a finished product but an indication a person is prepared for life.” It is believed that young adults enter colleges under veils of ignorance and leave with newfound perspectives of the world, extending into their choice of life pursuit. Mark Twain commented on education that “training is everything. The peach was once a bitter almond; cauliflower is nothing but cabbage with a college education." But are current students reaching these levels of perceived enlightenment? Are they prepared for life and their careers? Are students now transformed into cauliflower from cabbage?

College and university students of the 21st century are facing unprecedented and mounting challenges in their college experiences and career exploration timelines. The stakes of college have risen greatly with the ballooning cost of college, labor market outlook, and increased pressure on students to identify and pursue their careers earlier in their lifetime, specifically during their time in college. Not only are students taking difficult courses and learning to take care of themselves, they are also faced with the task of planning the rest of their life while sitting in a pressure cooker of expectations from parents, their institution, and themselves.

My own experience with these increasing pressures began during the fall of my senior year of high school as I worked tirelessly on my college applications. One of the first pressure points related to career exploration and identification that students face is major selection. As I applied to college one of the questions spinning through my mind was "what should I major in?" My mom told me I should choose a practical major and my dad pushed for something that would reap great returns in the future. Almost every person I talked to had some idea of what I should study and what I would later pursue, but what did I want? Who did I want to be? I ended up choosing broad programs that provided me with options to choose a major later thinking I would get to college and know what I wanted to do. Cut to four years later and I still haven't figured that out yet. I have changed my major at least four times and spent countless hours stalking the university pages for other academic opportunities I could pursue all the while feeling pigeonholed into a career as a consultant or an investment banker, the most common path of my peers. I arrived at college, fresh faced and naïve, believing my next four years to be ones of great self-discovery ultimately ending in me finding the perfect major and the perfect job. But that was not the case for me, or for many of the millions of students currently attending college.

Career exploration is an important aspect of the college experience for undergraduate students and it is currently being rushed in the United States. Students needs to have the time and ability to explore and pursue different majors and potential career paths during their time in college but many, due to financial limitations and program expectations, are unable. Career exploration for university students is a complex issue with tensions arising between several stakeholders like university administrations, faculty, advising staff, parents, and students. A few examples of these tensions include the timing of career related classes in a student's career, the conflicting goal of advisors to provide individualized help and also have their performance measured on graduation metrics, and structured versus exploratory career exploration. Can these tensions be resolved? Can career exploration in higher education be transformed into a more favorable and effective experience for involved stakeholders? Due to the complexity of this problem, number of parties involved, and its seemingly unsolvable nature, this thesis explores career exploration in higher education through the framework of a wicked problem.

Wicked Problems

In their 1973 paper, professors of design and urban planning Horst W. J. Rittel and Melvin M. Webber discussed the notion of “wicked” problems. A wicked problem varies from a “tame” problem, the kind which are usually pursued and solved, in that they are less defined and can only be resolved, not solved. According to Rittel and Webber, the term “wicked” is assigned “in a meaning akin to that of ‘malignant’ (in contrast to ‘benign’) or ‘vicious’ (like a circle) or ‘tricky’ (like a leprechaun) or ‘aggressive’ (like a lion, in contrast to the docility of a lamb)” (p. 160).

“Tame” or “benign” problems, as Rittel and Webber (1973) write, encompass problems like a mathematics problem that contain equations and solutions. “For each the mission is clear” thus making it clear whether or not the problem has been solved (p. 160). Wicked problems lack these essential traits of a clear mission and solution. Additionally, wicked problems tend to be social problems rather than problems in the “natural sciences, which are definable and separable” (p. 160). Poverty, terrorism, hunger, and climate change are all notable wicked problems. They each contain several stakeholders and no one clear solution. Rittel and Webber created ten properties of wicked problems in order to better identify them.

1. *There is no definitive formulation of a wicked problem.*

“The information needed to understand the problem depends upon one’s idea for solving it” (p. 161). Rittel and Webber explain that the process of formulating the problem and solving the problem are the same. These problems would be “tame” if they could be fully defined and thus solved. Instead, wicked problems are characterized by lack of understanding and context. These problems are complex and multifaceted unveiling new factors to their solvers at every query making them impossible to describe and to solve. As Rittel and Webber (1973) write, “one cannot understand the problem without knowing about its context; one cannot meaningfully search for information without the orientation of a solution concept; one cannot first understand, then solve” (p. 162).

2. *Wicked problems have no stopping rule.*

Unlike a problem solver working on a problem with a clear mission, the solver of a wicked problem has no way of knowing when to stop. Wicked problems lack “criteria that tell when the or a solution has been found” (p. 162). Instead, wicked problems tend to be moved on from due to external factors or the problem solver’s internal validation.

3. *Solutions to wicked problems are not true-or-false, but good-or-bad.*

Since there are no criteria that define a solution to wicked problems, it can never be decided whether or not the presented solution is true or false. Wicked problems consist of a myriad of stakeholders that represent different interests, and in turn judge the solution in different ways. These judgements can be defined as good or bad for their respective interests and communities. Rittel and Webber (1973) categorize these judgements as "better or worse" or "satisfying" or "good enough” (p. 163).

4. *There is no immediate and no ultimate test of a solution to a wicked problem.*

Presented solutions to wicked problems create waves of repercussions upon implementation due to the complexity of the problem and sheer number of stakeholders involved. These waves generate consequences “over an extended—virtually an unbounded—period of time” so the solution cannot be fully evaluated like a mathematical solution can (p. 163).

5. *Every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial and error, every attempt counts significantly.*

Wicked problems are unlike a mathematical problem or puzzle as the solver cannot "try various runs without penalty" (p. 163). Since the implementation of posed solutions to wicked problems create waves of repercussions, one cannot waste a trial or use a trial to evaluate a solution's effectiveness because these actions are essentially irreversible.

6. *Wicked problems do not have an enumerable (or an exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan.*

Wicked problems are "ill-defined problems" hence producing "ill-definable solutions" (p. 164). These problems lack criteria defining the problem and its solutions creating an environment for a problem solver without a finite set of rules, like those that accompany a "tame" problem. Therefore, judgement is crucial in evaluating offered wicked problem solutions and deciding upon their implementation.

7. *Every wicked problem is essentially unique.*

"Despite seeming similarities among wicked problems, one can never be certain that the particulars of a problem do not override its commonalities with other problems already dealt with" (p. 165). Wicked problems cannot be categorized into groups or classes because they lack the criteria necessary to define and compare characteristics. The complexity of wicked problems and the interaction of factors within wicked problems cause each one to be essentially unique.

8. *Every wicked problem can be considered to be a symptom of another problem.*

Wicked problems are complex in nature and as a result cannot be self-contained. The factors impacting a wicked problem are entangled with other factors thus producing further issues. At their core, these problems lack a single cause and thus cannot be broadly settled.

9. *The existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution.*

Since wicked problems encompass several factors and lack defining criteria, there is no way to determine the "correct" explanation for why the problem exists. Stakeholders define the wicked problem in terms unique to their perspective and standing, causing different explanations to be drawn when evaluating the root of a wicked problem. The problem solver's "world view is the strongest determining factor in explaining a discrepancy and, therefore, in resolving a wicked problem" (p. 166).

10. *The planner has no right to be wrong.*

Wicked problems consist of many parties and actions intended to resolve them ultimately create consequences for these parties. As a result, a wicked problem's solver has little to no margin for error when implementing a solution. Rittel and Webber (1973) discuss this in the context of city planning and conclude that "planners are liable for the consequences of the actions they generate" as "the effects can matter a great deal to those people that are touched by those actions" (p. 167).

The following sections of this paper evaluate career exploration in higher education through this established framework of a wicked problem. Career exploration in higher education is comprised of several stakeholders including students and their families, university administrations, advising staff, and faculty. Additionally, the complexity is increased by available and offered resources, implemented curriculum, policies at the university and governmental level, and economic conditions. The following portion of this paper seeks to highlight the present tensions existing between these stakeholders and issues while illuminating the "wicked" nature of career exploration in higher education.

Career Exploration

Definition

Before discussing the myriad of complexities found currently in career exploration for students in higher education, it is necessary to first define career exploration itself. The University of California, Berkeley (2021) defines career exploration as "learning about various occupations and their 'fit' with your unique career preferences [including] the skills, interests, and values you want satisfied by your career" (para. 1). Career exploration occurs through a process involving research, self-assessment, and evaluation during which the individual learns about, compares against their own experiences, and decides on a career path. At the higher education level, career exploration starts with a student's choice of major and continues beyond their first job after college. Career exploration is becoming increasingly present in K-12 classrooms but seems to most effect students during their time in universities. The college experience has long been tied to decision making about one's career as it is the step that precedes entering the workforce for many. Career exploration encompasses the way in which students arrive at their chosen career path and the steps and resources required to evaluate their self and options.

Evolution

Career exploration in higher education has evolved over time as discussed by Farouk Dey and Christine Cruzvergara (2014) in their paper due to the evolution of career services. "Economic conditions, trends and demands of the labor market, and needs of the university and society" have forced the career exploration process and its predominant drivers, career services, to adapt on college campuses (p. 5). Dey and Cruzvergara isolate six major periods of career services spanning from 1900 to modern day.

From 1900 to 1920, career services served as a source of vocational guidance, connecting new immigrants to employment and preparation for life in America. The following 20 years, from 1920 to 1940 were defined by teacher guidance as demand for teachers greatly increased due to the post-World War I baby boom and industrialization. Career services from 1940 to 1970 were defined by an emphasis on job placement. After World War II, the U.S. had an expanding economy and large demand by employers for employees which, in addition to the need to match GI Bill veterans to jobs, led to an growth in career services. From 1970 to 1990, the focus of career services shifted away from mere job placement numbers toward greater emphasis on career planning and counseling. Students were encouraged to take responsibility for their career outcomes in a landscape of slowing economic growth. The next 20 years, 1990 to 2010, were characterized by professional networking. The advent of new technologies and forms of connectivity increased competition in the labor market to which university career services responded by reinventing themselves as a hub where students and recruiters could be connected. From 2010 to modern day, Dey and Cruzvergara distinguish career services as connected communities, a shift brought on by the economic downturn of 2008. Career services now offer more individualized assistance and have become a larger part of student university experiences than ever before.

These paradigm shifts in career services correlate to paradigm shifts in the career exploration process for students. While career services has continued connecting students to jobs, the number of resources available, level of involvement in student life, and scope of career service offices has greatly increased. Today's student can walk into their university's career services building and find career counseling, resume help, career fairs, alumni networks, recruiting information, and various other informational resources. In this new era of career exploration, though, there are still gaps in student support and tensions that exist.

Current Student Climate

An article on career exploration for college students published in November of 2020 by *Inside Higher Ed* sheds light on the current conditions students face. The COVID-19 pandemic and resulting economic downturn have increased student stress and exacerbated preexisting issues related to career exploration. As students navigate remote learning and life in a pandemic, they are also unsure of what lies ahead for them beyond graduation. Graduating into an economy that is down often leads to long-term career impacts as proven by past periods of economic flux. In a nationally representative survey conducted by Strada Education Network's Center for Education Consumer Insights "26% of U.S. undergraduates who were enrolled at bachelor's degree-granting institutions this fall reported having a job or internship canceled" and "another 27% of respondents said they dropped plans to find a job or internship" (Fain, 2020, para. 4). At the same time, students feel unsupported by their university's career services offices and faculty. Many undergraduates stated that "COVID-19 has made faculty and staff members less available for advice and mentoring about academic and professional development" only amplifying their stress (Fain, 2020, para. 5).

Two students from the University of California, Davis were interviewed and voiced their frustration with current career exploration. “There was already this void in up-to-date, actionable career advice for students, really modern career advice and an infrastructure to distribute that information,” and the problem has only been made worse by the pandemic (Fain, 2020, para. 12). The students went on to explain that “traditional expertise on campus no longer really suffices because no one knows what industries are going to collapse, which ones are going to emerge, which ones are going to be restructured” and that there is “a lot of frustration about this lack of contemporary guidance and this feeling of ‘how can anyone help me if no one knows what’s going on’” (Fain, 2020, para. 14). Results from a survey conducted by Strada and College Pulse illustrate these frustrations on a bigger scale. Only 35% of respondents “said their college is excellent or very good at connecting education to meaningful careers” and “one in five college students said the pandemic has made their opportunities for career exploration ‘much worse’” (Fain, 2020, para. 15).

The following sections highlight factors that impact career exploration in higher education and how they contribute to the current failure to effectively provide career exploration in higher education. Each section contains an overview of the specific topic, an analysis of said factor’s current operationalization, and a discussion on the factor effects career exploration. Additionally, each section features evaluation of the discussed factor’s role in the wickedness of the problem that is career exploration in higher education.

Career Exploration Timeline

Overview

Career exploration occurs during many stages of a student's life. This section seeks to describe and evaluate this timeline in addition to analyzing how it impacts the career exploration experience in higher education. Identity formation is a key concern during adolescence and young adulthood, times tied to decisions related about careers, views, and relationships. Erik Erikson's psychosocial theory postulates that the conflict and necessary developmental task of this period is identity formation. Erikson's theory consists of eight major conflicts that happen to an individual over the course of their life, each centering around the self and the outside world. As individuals face Erikson's conflicts, resolution of such conflicts leads to the development of a core strength. Without resolution, though, the conflict may lead to persistent issues over time. Allison Ewing-Cooper and Kami Merrifield, academic advisors at the University of Arizona, have adapted Erik Erikson's psychosocial theory to create a framework of development for college students. Their framework takes these eight conflicts and applies them to the college lifespan rather than the entire lifespan.

Identity, in Ewing-Cooper and Merrifield's framework, is most closely tied with the fifth developmental stage – identity versus identity confusion. This stage focuses on student identification of "who they are and where they fit in" (Ewing-Cooper & Merrifield, 2019, para. 7). Ewing-Cooper and Merrifield highlight James Marcia's identity statuses (diffusion, foreclosure, moratorium, and achievement) in reference to this stage. Students experiencing identity diffusion "have not explored nor committed to any identity" and are uninterested in doing so (Ewing-Cooper & Merrifield, 2019, para. 8). Students experiencing identity foreclosure "have made a commitment without a crisis" in that they may have reasonably explored their options but are attached to one path only (Ewing-Cooper & Merrifield, 2019, para. 8). Identity moratorium is similar to identity diffusion in that the student has made no commitment but differs in that the student is actively exploring. The fourth and final identity status, identity achievement, is only reached after students "have adequately explored multiple options and committed to one" (Ewing-Cooper & Merrifield, 2019, para. 8).

The identity versus identity confusion stage is one of several development mechanisms that impacts student career exploration as a piece of identity they explore encompasses their major and career choices. In their paper, Stringer, Kerelman, and Skorikov (2011) define career identity as "the sense of self derived from one's development of an occupational career and is an important component of one's overall identity" (p. 1). A potential aspect of the development of career identity is career preparation which consists of three dimensions: "career decision-making (making a decision about which career to pursue), career planning (using active strategies for achieving career goals), and career confidence (belief in achieving one's career goals)" (Stringer et al., 2011, p. 2).

It is important to note, however, that there are many antecedents to career exploration during both adolescence and young adulthood which can impact an individual's career preparation and career identity. In their paper, Jiang, Newman, Le, Presbitero, and Zheng (2019) highlight these antecedents at both the individual and contextual levels.

During adolescence career exploration can be fostered or inhibited by individual antecedents including personal beliefs (about one's own capability and future), personality traits, career interests, intrinsic motivations, psychological states, and demographics (Jiang et al., 2019). Adolescence also features many contextual antecedents, external factors that influence a student's experience. This stage's contextual antecedents include social support from peers, family, and school staff as well as contextual climates both within schools and outside of them

(Jiang et al., 2019). Career exploration during adolescence results in the setting of achievement-oriented goals and the development of a vocational identity (Jiang et al., 2019).

During the next stage of development, early adulthood, career exploration becomes a greater issue as this time encompasses a student's college experience. The individual antecedents impacting career exploration in early adulthood are similar to those from adolescence and include personality and dispositional traits, personal beliefs (about one's own capability and future as well as their self-esteem), career interests, intrinsic motivations, psychological states, and demographics (Jiang et al., 2019). The contextual antecedents are also similar and include social support, contextual climates, and social or interpersonal barriers (like parental career interference) (Jiang et al., 2019). While the antecedents are similar to those of adolescence, the outcomes of early adulthood career exploration are much greater. These outcomes include career decisions, career competencies, career identity, career attitudes, and career behaviors (Jiang et al., 2019). These outcomes all contribute to the career identity and success of the individual and show the great impact that both individual and contextual antecedents can have on career exploration.

Operationalization

Stringer, Kerelman, and Skorikov's paper (2011) features a 2007 longitudinal study that evaluated the three dimensions of career preparation, a contributing factor to career identity, in students by following them from 11th grade to 4.5 years after high school graduation. This study focuses on students as they pass from adolescence to early adulthood and evaluates the impact of development along the dimensions of career decision-making, career planning, and career confidence through assessments.

The results of the study suggested that the three career preparation dimensions are interrelated processes but did not show similar changes over the course of the study (Stringer et al., 2011). Career confidence was measured to be increasingly linear over time demonstrating that as students engaged in career exploration activities, learned more about their realistic future options, and learned how to be adaptable in their careers they gained confidence in their career choice which was consistent with other research (Stringer et al., 2011). Career planning was stable at first but then experienced linear growth from six months after high school to the end of the study (Stringer et al., 2011). This finding tracks with the career exploration timeline as from 12th grade to six months after high school there is no additional focus on career exploration while six months after high school represents the start of college with career exploration steadily increasing across a student's four years. The study found that career indecision decreased rapidly from 12th grade to six months after high schools and then decreased less rapidly from six months after high school to the end of the study (Stringer et al., 2011). Researchers attribute the early rapid decline to students facing pressures relating to their careers such as college selection, majors, and initial employment (Stringer et al., 2011). Additionally, researchers attributed the second segment of less rapid career indecision decline to the slowing of career decisiveness as students wait to enter their careers (Stringer et al., 2011).

In summation, study found that during the transition from adolescence to early adulthood "young adults are simultaneously making career decisions, developing career plans, and becoming more confident in their career decisions" and that the results "support the increasing nature of career confidence and career planning and the decreasing nature of career indecision as youth make the transition into college or work" (Stringer et al., 2011, p. 12). However, it is important to consider the population the study surveyed among other limitations. Overall, students follow this model of career preparation but the methods of career exploration these students engaged in and their access to career exploration resources are worthy of consideration. The study does, though, illustrate a developmental timeline for career identity during the career exploration process in students from 11th grade to 4.5 years after high school.

Discussion

Combining understanding of identity and the career identity timeline for students provides a solid foundation for the career exploration process but many complexities exist that further complicate career exploration. These aforementioned theories illustrate career exploration as a linear trajectory for students at the end of which they present themselves to the professional world with their set career identity. Zikic and Hall argue in their paper that career exploration is much more complex and needs a more complex view as a result.

Zikic and Hall define career exploration as a “lifelong process that is triggered particularly during transitions in life” and “involves gathering career-related information and testing hypotheses about the self and the environment to reach career goals” (2009, pp. 181-191). The process of career exploration begins with a self-assessment which is followed by an exploration of the environment after which the individual develops and acts on an opportunity and then assesses whether or not it was a fit. Reality, though, is not quite so linear.

The chaos theory of careers steers away from this linear path and focuses of serendipitous exploration, a non-linear timeline, and the need to "embrace and capitalize on un-predicted events in one's career” (Zikic & Hall, 2009, pp. 181-191). Many barriers exist to traditional career exploration that encourage this more complex way of approaching career exploration. These barriers include person-centered characteristics like gender, age, and skills as well as situation-centered barriers that exist within work and sociocultural environments (Zikic & Hall, 2009). Additionally, access discrimination and treatment discrimination can bar individuals from exploring or engaging with specific careers or organizations (Zikic & Hall, 2009). Career indecision and relationships are also barriers to career exploration as they impact an individual's willingness to explore careers and their resulting decision-making (Zikic & Hall, 2009).

These barriers contribute to the chaos theory of careers as they demonstrate ways in which the traditional process of career exploration fails. The main theme of the chaos theory of careers is adaptability which is necessary to student success. But how can adaptability be taught or embraced at the university level? Zikic and Hall highlight strategies like increased recognition of diversity, person centered advising, and total life advising to do exactly this (Zikic & Hall, 2009). In essence, advising students with their specific life experiences and context in mind can better inform advisors and provide individualized help to students about their career exploration journey. As Ewing-Cooper and Merrifield discussed in their college lifespan framework, students in this period can be at various stages of identity development and thus need individualized advising or intervention (2019). Adaptability can be fostered in students through an in-depth and supportive career exploration process during which the student learns skills and behaviors that can help them make career decisions, ultimately giving them the tools necessary to plan their own future and make decisions along the way with less stress. Individualized attention that focuses on the development of adaptability from universities' can be delivered through advising or career planning classes but is it feasible? Can a more complex view of career exploration be adopted by universities?

These tensions lead into discussion on the wickedness of career exploration in higher education. Students tend to turnover at universities every four years following their graduation, beyond that time the university has no further attachment. This fact, in addition to the notion that career exploration is non-linear, makes it extremely difficult to track the development and growth of students in higher education. Universities may be able to measure job placement, career switching, and graduation rates but there is not an effective way to test if students are leaving college fully prepared for their career journeys. Additionally, this means there is no immediate and ultimate test of a proposed solution to career exploration on college campuses. New curriculum, resources, or practices may be adopted by universities, but their overall impact is almost impossible to measure and compare to past practices.

These proposed solutions can also introduce major problems for students, making it difficult to learn by trial and error for stakeholders seeking to improve career exploration. Any new curriculum, resources, or practices have the potential to backfire and hurt students as well as their time devoted to career exploration in college. Additionally, as mentioned before, the results of such changes would be difficult to track making the situation even more complex or wicked. The wickedness of this problem is further enforced in this realm of career exploration because the issues associated with career exploration timelines are symptoms of other issues. Gaps in resources, education, support services, and advising resources lead to different career exploration experiences. Additionally, budget constraints and university resources can limit the actual impact higher education institutions can have on students during the career exploration timeline. While individualized advising and a focus on ingraining adaptability in students may be ideal, the actual implementation of such practices would be quite challenging because of the stakeholders involved. In theory, improvements to the career exploration of college students are within reach but the ramifications these changes could have, the resources necessary to make these changes, and the stakeholders deciding on these changes make them seemingly impossible and characterize the problem of career exploration in higher education as wicked.

Major and College Selection

Overview

Career exploration is greatly impacted by two decisions students make when planning to attend college, selecting a major and a university. How do students make these decisions and what factors influence them?

Factors impacting college choice have shifted over time as new generations of students apply to college. Currently, as discussed in Hannah Chenoweth's paper (2019), Generation Z defines the students reaching college age. Generation Z includes students born after 1996 and the group is characterized by a larger connection to technology and social media than the previous generation, Millennials. Generation Z students see college as "just another brand" and seek experiences, especially from their chosen college (2019, para. 9). This view of college as a brand seems to have originated following the 2008 economic crisis, after which the cost of college continued to rise and students, essentially the customers of higher education, had to reevaluate the value proposition offered by these institutions. Colleges in turn matched this perception and further expanded upon their university brands.

In their paper, Amber Stephenson, Alex Heckert, and David Yerger discuss the consumer decision framework present in choosing a college and how branding impacts the process. As of 2015 there were close to 6,800 higher education institutions and decreasing trends in the number of high school graduates (2015). With increasing competition in the higher education space, branding "has become increasingly used as a mechanism of differentiation" (Stephenson et al., 2015, p. 489). A brand is defined by the American Marketing Association as "'a customer experience represented by a collection of images and ideas" while the branding process itself is "'the accumulation of experiences with the specific product or service, both directly relating to its use, and through the influence of advertising, design, and media commentary" (Stephenson et al., 2015, p. 490). In higher education, branding provides universities with "an identifying device, promotes prestige, and functions as a stamp of excellence" (Stephenson et al., 2015, p. 490). As students have shifted toward viewing college from the consumer point of view, higher education has responded by utilizing business concepts of branding to differentiate themselves and draw in students.

The researchers evaluate a study they conducted on incoming first year students at a midsized public university in the northeast and draw unique insights on the elements involved in the students' college decision. They interviewed students fresh to campus on what factors influenced their school choice and their perceptions of the school. Stephenson, Heckert, and Yerger found several elements that impacted students' college choice which can be categorized as alternatives, decision mediators, and selection factors.

The alternatives of college choice in this study were reflected through students' consideration set, the other colleges they had considered and applied to. The participants of the study, on average, had 3.03 institutions in their consideration set but other literature suggests this number could be as high as six institutions (Stephenson et al., 2015). The range of considered institutions was one to eight, illustrating the practice of applying to several schools by students. Another alternative found was the type of institution. The researched found that students' consideration set included colleges from different categories including public, private, small, large, and religiously affiliated (Stephenson et al., 2015).

Decision mediators are defined as “the rules used by the consumer to match buyer motives to the satisfaction of those motives” (Stephenson et al., 2015, p. 496). The researchers found that having family or friends who had attended the university was one of the most influential decision mediators (Stephenson et al., 2015). Usually, “decision mediators are developed by repetitive purchase processes” so seeing someone close to them choose and attend a school, would impact a students’ school choice (Stephenson et al., 2015, p. 497). However, not all students have this decision mediators, for example first generation college students, and so they rely on outside information about the institution.

The final aspect of the research evaluates selection factors present in students’ school choice. The researchers concluded that availability of major was the most common reason students were drawn into a school (Stephenson et al., 2015). Additionally, price was a major consideration for students as many students sought the best value for their education (Stephenson et al., 2015). Campus visits, perception of relevant others, size, location, campus aesthetic, and campus atmosphere were also influential factors on students’ college choice (Stephenson et al., 2015). These findings align with discussion of students’ valuing the experiences a college provides and illustrate some of the factors that influence their choice of institution. Increasingly, students view higher education as a consumer product with colleges and universities as competing brands resulting in the college choice process matching more closely to the consumer decision making process.

In their paper, Robert Pritchard, Gregory Potter, and Michael Saccucci (2004) discuss a variety of variables, noted in previous research, that influence academic major selection among incoming college freshmen. Sociocultural factors like gender, race and ethnicity play a role in student decisions, while being further impacted and magnified by gender and racial stereotyping.

Personal and familial factors like the perception of the self, individual abilities, and parental influence have also been found to have an impact on a student's academic major choice. Studies have even shown that a student's learning style, cognitive ability, and quantitative test performance influence their academic major decision (Pritchard et al., 2004). There are several factors beyond these listed that play a role in how a student selects their major and what they choose, but these appear to be the most influential based on past literature and studies.

Operationalization

Many factors influence a student's academic major choice in theory, but which factors seem to have the largest impact in practice? In their 2005 research, Charles Malgwi, Martha Howe, and Priscilla Burnaby conducted a study of undergraduate students at a large, northeastern business school to evaluate the factors that influenced them prior to beginning their first year. The researchers cited previously found influential factors of parental occupation and socioeconomic status that impacted students in choosing a major within the business school (Malgwi et al., 2005). They also highlighted past research that the process of selecting a specific major within the business school was influenced most by a student's personality, values, and interpersonal behavior (Malgwi et al., 2005). The researchers stated that "in general, students appear to be strongly influenced by their interest in the subject, the availability of jobs, their aptitude for the subject, and the earnings potential related to that major" (Malgwi et al., 2005, p. 275).

Their study produced findings that echoed these hypotheses within their surveyed population. The researchers found that the primary influence across both genders in selecting a major was interest in the subject. However, there was variation across genders in other factors. For women, aptitude was a large factor in the major selection process while it was much less important for men. Additionally, male students in the study were more influenced by the potential earnings associated with a major than female students. The researchers also concluded on an interesting finding about the impact of others on students as they make academic major decisions. It appeared "high school courses, high school advisors, and even parents” are not “particularly influential in the initial major choice" (Malgwi et al., 2005, p. 278).

Another study, conducted in 2004 by Pritchard, Potter, and Saccucci found a student’s skills to be a major influence on their choice of major. The researchers surveyed undergraduate business students at a regional university to determine if there were statistically significant differences in computational and algebra skills across various business majors and to examine if these differences impacted a student’s choice of major. They found that, within the study, students with better computational and algebra skills chose to major in finance or accounting while students with worse skills chose to major in marketing, management, or MIS. The researchers concluded that students with weaker quantitative skills focused on fields they perceived to be less quantitatively demanding. These results reinforce the notion that students choose their major in part because of their skills and abilities and how they believe those to match their perception of that major and the skills necessary, whether accurate or not. An interesting additional finding in this study was the timing of a class’s sequence. The first business class many students take is accounting, after which they seem to either make a decision over the field and choose it as their major or choose a different pathway. At most business schools, courses in management, MIS, and marketing may be taken later in a students’ academic career causing them to select a major later in time than accounting.

A study conducted in 2018 further examined the role of exposure in a student’s academic major choice. Researchers Hans Fricke, Jeffrey Grogger, and Andreas Steinmayr surveyed students at a Swiss university to evaluate how exposure to a field of study influenced their choice of major after their first year. The students were assigned a research paper during their first year in one of three fields: business, economics, or law. The researchers found that the topic students wrote about appeared to influence their choice of major. They concluded that “exposure to economics raises the probability of majoring in economics” and “students whose preferred field is business are 2.7 percentage points more likely to major in economics after writing an economics paper” (Fricke et al., 2018, p. 203). Likewise, “being assigned to write in law increases the probability of majoring in law by 1.6 percentage points” for the surveyed population (Fricke et al., 2018, p. 203). Additionally, the researchers found that “exposure to economics generally has larger effects on students who are exposed to topics outside the typical public perception of the field” which “suggests that exposure helps students learn about the scope of the discipline” (Fricke et al., 2018, p. 208). Overall, exposure to a specific field had an impact on students choosing to major in that field and had the possibility to change their perception of said field.

Another influential factor on academic major choice that has been researched is interest. In his 2011 paper, James Downey examines “the construct of interest and in the particular factors which contribute to vocational interest among business college majors” (p. 147). He surveyed students and compared the influenced on vocational interest between MIS and non-MIS majors. Many studies and literature also cite interest as an influential factor for students, but as James Downey writes in his paper, they reference interest as being one dimensional. Downey argues that interest is multi-dimensional and postulates that interest is impacted by a myriad of factors. In his paper, Downey hypothesizes that "interest in a major and in the matching subsequent career significantly influences their choice of major" (2011, p. 147). But what constitutes interest?

Aristotle's 4th century BC works define interest as "voluntary choice involving rational principle and cognitive thought" (Downey, 2011, p. 148). Interest has been further defined as "cognitive in nature, that is, it involves mental processing and is the interaction between an engaged person and the external world" (Downey, 2011, p. 148). Interest is motivational as it drives us to pursue or not pursue activities or ideas and it also impacts our learnings. Being interested or not interested in something changes how we are attentive to it, how much effort we put into it, and how we process it. Researchers have found that interest is caused by change, novelty or newness, and uncertainty. For high school and college students, all three of these factors are present in the college decision making process.

Additionally, interest has been described as being situational or dispositional. Situational interest is momentary and fleeting, while dispositional interest takes longer to develop and has lasting effects on how individuals develop personality and abilities. Vocational interests are dispositional and highly stable. A study found that "prior to age 18 (12-17) and after age 22, vocational interests were highly stable" but "for ages 18-22, interests tended to develop and increase, which they attributed to the choices and changes people make as they transition from high school to college or the workforce" (Downey, 2011, p. 148).

Vocational interest is defined as "interest in a particular field of education or employment and is a central predictor in choice of educational major, degree completion, job satisfaction, satisfaction with life in general, and staying in one's current job" (Downey, 2011, p. 149). Holland analyzed vocational interest through a lens of matching one's personality and skills to their environment while socioanalytic theory found interest to be shaped by identity. The achievement/self-perception theory postulates that vocational interest and academic choice are impacted by two factors. The first factor is expectation of success, meaning that we choose the places we expect to be more successful. The second factor is subjective value of choice which is further broken down into three values: attainment (success), intrinsic (enjoyment), and utility (contribution to reaching goals) (Downey, 2011). Students are impacted by these factors when discovering their interests and gravitating to corresponding academic areas.

Downey's 2011 study found that the two most important influences on interest among the surveyed population were quantitative skills and the opportunity to use quantitative skills. Additionally, he found that the esteem factor of a major and the opportunity for business management were of the least influence. Downey concluded that the skills a student has and their want to be challenged and use those skills played a major role in their interests and overall academic major selection.

Interest also has a large influence on students switching majors during their academic careers. Returning to the research of Malgwi, Howe, and Burnaby, the primary influence for both genders on changes in major among business students was interest in the subject they were changing to, similar to interest being the most influential factor for initial major choice (2005). The second most influential factor found was job and career opportunities (Malgwi et al., 2005). These findings contrasted ones of previous literature that places interest as the second most influential factor for major change behind career opportunities (Malgwi et al., 2005). The researchers also found that men and women converged on factors influential to major changes over time (Malgwi et al., 2005). Finally, the researchers concluded that students who changed their majors were more influenced by positive factors than negative ones (Malgwi et al., 2005).

The students tended to move to a new major for positive reasons like interest in that major rather than leave their old major for negative reasons like dissatisfaction.

Students' decisions on majors can greatly impact their satisfaction and sense of belonging on campus as discussed by two University of Minnesota, Twin Cities researchers. In their paper, Krista Soria and Michael Stebleton (2013) analyze the relationship between students' motivations during major selection and their outcomes on university campuses. The findings are drawn from a survey project based at The University of California, Berkeley that was sent to undergraduates at six, large public universities. The researchers found that "intrinsic and internal extrinsic motivations are generally more positively associated with students' satisfaction and sense of belonging on campus, whereas external extrinsic motivations are generally negatively associated with these outcomes" (Soria & Stebleton, 2013, p. 37). Examples of intrinsic and internal extrinsic motivations when choosing a major include interest, intellectual curiosity, preparation for a fulfilling career, and allows time for other activities. In contrast, examples of external extrinsic motivators include prestige, parental desires, easy requirements, and inability to get into first choice major (Soria & Stebleton, 2013).

Overall, the researchers concluded, "students generally feel a greater sense of belonging and satisfaction when they make decisions about major and career based on internal, self-regulated, and intrinsic motivations" (Soria & Stebleton, 2013, p. 37). Sense of belonging and satisfaction are both important to a students' overall experience and development.

Discussion

Academic majors represent a key choice in a student's career exploration process as their decision can have long term effects that extend into their professional lives. As discussed by

Soria and Stebleton in their paper, a "students' undergraduate major is significantly correlated with job stability and job satisfaction" and the academic major has "a significant impact on career opportunities and salaries" (2013, p. 29). Students have to balance these notions with their own interests which can lead to high amounts of stress. Soria and Stebleton also highlighted that ‘‘students see the choice of major as one that both reflects important core characteristics of themselves (including their gender role identification, their interests and values, and their abilities) and has consequential implications for their futures" (2013, p. 30).

As students make these decisions on college majors that impact much more than their first-year curriculum, there is an uneven and unequal access to materials and information that many are struggling with as well. In their paper (2015), Justine Hastings, Christopher Neilson, Anely Ramirez, and Seth Zimmerman discuss a study of Chilean college applicants and students and how their individually held beliefs on earnings and cost outcomes impacted their degree choice. The paper highlights how "a growing body of evidence suggests that academic, labor market, and cost outcomes for postsecondary students vary widely by institution, field of study, and degree level" and that whether or not students make informed choices can impact their matriculation and graduation (Hastings et al., 2015, p. 136). The researchers highlighted how many "students applying to college face uncertainty about earnings and cost outcomes at different degree programs" and that this uncertainty could be alleviated "through costly, degree-specific search" (Hastings et al., 2015, p. 137).

The researchers found that among the surveyed students many held "noisy expectations" of program costs, which in an era of rising college cost can be detrimental (Hastings et al., 2015). Students held these inaccurate beliefs for a variety of reasons. First, the researchers found that lower socioeconomic status (SES) students tended to rely on advertising and publicity rather than school sources leading to a skewed perception of college cost. Meanwhile, higher performing students tended to rely on government websites providing more accurate cost information. Additionally, "low-SES students are more likely to cite costs and financing as key priorities, while high-SES students are more likely to cite an interest in the curriculum” exemplifying different motivations for these groups (Hastings et al., 2015, p. 137). The results of the survey found that students more focused on their future earnings and employment were less likely to overestimate their future earnings and choose a degree because of related high historical earnings whereas students motivated by interest were more likely to overestimate their future earnings and choose a degree with related lower historical earnings (Hastings et al., 2015). These results exemplify the uneven access students have to resources as well as how the motivation behind choosing a degree program can impact cost and earnings estimates.

While students with lower SES were found to be more likely to choose degrees based on future earnings and career outlook, the researchers found that these students tended to “have less accurate expectations than other students” meaning their estimations could be skewed in one way or another (Hastings et al., 2015, p. 137). Overall, though, students “tend to believe that their own earnings outcomes conditional on graduating will be similar to outcomes for past graduates” (Hastings et al., 2015, p. 137). The researchers concluded that student estimations of costs and future earnings impacted their matriculation in degree programs and likelihood of dropping out. So, student perceptions of costs and future earnings are important factors impacting their college experience.

The researchers found that “students who overestimate costs are less likely to matriculate in any degree program and in their stated first-choice program and are more likely to drop out” while “students who overestimate earnings matriculate at similar rates to other students but choose degree programs where past students have been less likely to graduate, have earned less early in their careers, and have been more likely to default on student loans" (Hastings et al., 2015, p. 137). Additionally, "students with a stated preference for labor market-related degree characteristics are less likely to overestimate earnings outcomes and choose degrees where past students have gone on to earn more, while the opposite is true for students with a stated preference for enjoyment of the curriculum" (Hastings et al., 2015, p. 137).

While this data was collected on students in Chile, the findings are still applicable to students in the United States. Student expectations of college costs and future earnings related to their degree can greatly influence their likelihood of graduation and thus career exploration experience. Additionally, tensions arise between choosing a program for its cost and future earnings or out of interest. This can impact cost estimations, matriculation, and, as mentioned earlier, student satisfaction. As students evaluate and pursue college majors, a myriad of pressures exists and continue to mount as the cost of college, and thus the stake of college, rises. Students have to juggle choosing a major and college out of interest or out of future return while also dealing with pressures related to parents, costs, and college features.

These factors contribute to the wicked nature of career exploration in higher education. An immediate solution to student college and major choice does not exist because of the various factors influencing these choices and the sources of information from which these decisions are made. Additionally, decisions related to major choice while attending universities can be complex for students because of the timing of certain classes, subjects, or exposure to material of interest. Many institutions have adopted more rigid and defined course schedule structures to ensure achievable four-year graduation plans, but these can make it more difficult for students to switch majors, especially later in their college careers. These factors all lead to the increasing complexity of career exploration in higher education and contribute to the problem's wickedness.

Academic Advising and Career Counseling

Overview

Academic advising and career counseling are factors that greatly define the experience a student in higher education has with career exploration as staff in these spaces tend to be those most involved in career conversations on campuses. Academic advising, as highlighted by Robert Reardon and Emily Bullock in their paper, was defined by Ender, Winston, and Miller as "a systematic process based on a close student-advisor relationship intended to aid students in achieving educational, career, and personal goals through the utilization of the full range of institutional and community resources" (2004, p. 111). They also reference Creamer's definition as "an educational activity that depends on valid explanations of complex student behaviors and institutional conditions to assist college students in making and executing educational and life plans" (Reardon & Bullock, 2004, p. 111). Academic advisors serve their students not only academically but socially and developmentally as well, as students navigate their transition to college, their time in college, and their plans for after college.

Career counseling, as described by Reardon and Bullock, is "a one-to-one or small group relationship between a client and a counselor with the goal of helping the client(s) integrate and apply an understanding of self and the environment to make the most appropriate career decisions and adjustments" (2004, p. 111). The key difference in academic advising and career counseling is scope, with academic advisors advising the student over several aspects of their life and career counselors advising solely on career decisions.

Operationalization

Current academic and career advising is rooted in developmental advising, which as Dey and Cruzvergara highlight in their paper discussing the evolution of career services, became the predominately used model in the 1970s and 1980s (2014). In her paper, Virginia Gordon names Burns Crookston as the leader of developmental advising and the man responsible for its integration in the academic sphere. The developmental approach to advising focuses on “the individual student's concerns, needs, and aspirations” (Gordon, 1994, p. 1). Crookston described developmental advising as being “concerned not only with a specific personal or vocational decision but also with facilitating the student's rational processes, environmental and interpersonal interactions, behavior awareness, and problem-solving, decision-making and evaluation skills” (Gordon, 1994, p. 1). Gordon emphasizes how developmental advising meets the long-held goal of higher education to develop the whole students “intellectually, personally, and socially” and that advising “continues to be one of the best vehicles for accomplishing this goal” (Gordon, 1994, p. 1).

Recently though, changing university priorities have impacted the role of academic advisors. In their paper, Joseph Lynch and Tracy Lungrin evaluate the current higher education environment in relation to post-graduate student success from the perspective of academic and career advising (2018). With the continuous increase in the cost of a college degree, the value derived from that degree is more important than ever. Universities are focusing in on student retention and graduation rates leading to increasing pressures on students to choose a major and career path and on advisors to ensure their students graduate and secure jobs. The current higher education environment is tying academic advising and career counseling more closely together.

Money and time spent on college are both becoming increasingly important and impact the advising space because of the increase in pressure on students to decide on a major earlier. Approximately 20% to 50% of students entering college are still deciding on their area of study and up to 75% of students are expected to change their major at least once (Lynch & Lungrin, 2018). As students navigate the development of their personal identity, they are also forced to select and pursue their vocational identity – a process guided, in part, by academic advisors. These pressures are only compounded by the decreasing amount of time allotted by time-to-degree initiatives. Students are no longer encouraged to stay beyond four years at their university because of the increased focus on graduation rates, leaving some with fears of choosing the wrong major or the issue of changing their major too late. This conflict can be partially mitigated by career exploration led by academic advisors.

As academic advisors are pulled further into the career advising space as a result of lack of career services staff, increasing belief by students of the relationship between academic and career success, or other factors like increased pressure by time-to-degree initiatives they become more important in the career exploration stage for undergraduates. Career exploration is important for student success as it begins "connecting learning in the classroom to the knowledge and skills needed to be successful in the world of work" in addition to serving "as an opportunity to build self-efficacy and independence" (Lynch & Lungrin, 2018, p. 70). Connecting back to the identity theories of Erikson and Marcia, when students face the identity versus identity confusion conflict, they can exist within one of four statuses: diffusion, foreclosure, moratorium, or achievement (Ewing-Cooper & Merrifield, 2019). Students in each of these categories need specific tools for career exploration that academic advisors can provide.

Increasing pressures felt by college students translate into additional pressures for academic advisors as their roles grow beyond academic and identity development and into career growth and development. Time-to-degree initiatives not only make degree completion and four-year graduation a bigger priority, but career readiness as well. Lynch and Lungrin warn of the potential harm caused by this, academic advising focused on “speedy decision-making” and a return to “to a more task-oriented or prescriptive approach” (2018, p. 70). Students need to be challenged to think critically during the career exploration process and supported by advisors as they would in their identity development as well. Additionally, Lynch and Lungrin recommend evaluating university incentives for academic advising. They warn that “institutions should be cautious about using retention and timely graduation as the defining statistics for assessing successful academic advising” (Lynch & Lungrin, 2018, p. 71).

The metrics for academic advising and career counseling have shifted over time and continue to shift as universities align with new priorities regarding student success, graduation, and job placement. As discussed earlier with the evolution of career services, advisors played different roles in each era of career services and exploration. During the periods from 1900 to 1970, which were defined by vocational guidance, teacher guidance, and them job placement, career services staff were essentially “job fillers and measured their success by placement numbers” (Dey & Cruzvergara, 2014, p. 7). As higher education shifted more toward development in the 1970s and 1980s, career services evolved to become career counseling in which staff took on roles of clinicians and directors evolved from placement managers to counseling supervisors (Dey & Cruzvergara, 2014). The measures of success then “became less about placement data and more about appointment and workshop attendance counts” (Dey & Cruzvergara, 2014, pp. 7-8).

Career services from 1990 to 2010 was characterized by efforts to connect students with employers and professional communities. During this period, university funding for career services declined making "corporate partnerships and revenue generation a critical goal for many career centers" evolving the role of advisors once again into employer relations staff (Dey & Cruzvergara, 2014, p. 8). As a result, performance metrics shifted from "from attendance numbers to learning outcomes" (Dey & Cruzvergara, 2014, p. 8). Career services and advising today is characterized by more individual student attention and performance is measured by students' "first destinations and lifelong professional outcomes" (Dey & Cruzvergara, 2014, p. 8).

Discussion

Returning to the concept of developmental advising, in her paper Gordon discusses the current evidence that shows what little progress has been made in actually implementing the practice on campuses. This evidence illustrates the current struggles academic advisors face and how difficult individualized attention for students can be in practice. Gordon names several reasons why universities have not implemented or have struggled to implement developmental advising. These can be categorized into three stakeholder groups: advising staff, university administration, and students.

For advising staff there are numerous reasons as to why the implementation of developmental advising has been challenging. First, current advising loads are too large to provide students with individualized attention. There simply isn't enough time and advisors to go around to achieve this level of personalization. Additionally, some advisors are unequipped to facilitate the necessary advisor-student relationship present in developmental advising or even advise students of diverse backgrounds. Training on this type of advising is also not readily available to all making it difficult for campuses to implement. Finally, there is a lack of integration between student and academic services on many campuses making it difficult for advisors to know about and connect students to available resources.

Implementation of developmental advising is further slowed by university administrations whether intentional or not. Many administrators lack the funds or choose not to allocate the funds to overhaul advising offices to a developmental approach. Additionally, there is at present a lack of time and support to evaluate the potential implementation of developmental advising and its merits.

The third and final group impacting the failure to implement developmental advising effectively is students. Many students perceive advising as a place to go for scheduling and registration, not as a place to build connections with advisors. Additionally, some institutions don’t require meetings with academic advisors or consistency in what academic advisor a student meets with. This makes it hard for advisors and students to establish the relationship off which developmental advising is based.

While developmental advising is the goal for many advising departments in higher education, several barriers to its effective implementation exist. Additionally, increasing stress and workloads for academic advisors can make this approach impossible or unattractive. The reality of academic advising is far from its idealization and theoretical rendering, further complicating the student support during their career exploration experience in higher education.

As academic advising becomes increasingly tied to career advising, Lynch and Lungrin propose integrating the two (2018). In theory, academic advisors have developed relationships with their students and can thus provide them unique, individualized support in the career space.

They can lead personalized career exploration activities, an idea also encouraged by Marcia (Ewing-Cooper & Merrifield, 2019), intervene early in a student's growth, and provide more frequent one-on-one conversations with the student about their career goals and the necessary trajectory to achieve them. These actions can lead to increased student success in the face of mounting career related pressures because "engaging students in experiences based on their unique interests and goals can lead to higher levels of success and persistence, thereby improving retention numbers" (Lynch & Lungrin, 2018, p. 73).

Early career interventions by academic advisors are a key aspect of student success during a time in which "higher education places a larger emphasis on quick selection of a major and rapid movement through the curriculum" (Lynch & Lungrin, 2018, p. 77). These interventions can provide deciding students with greater information and exploration power earlier and decrease the career related pressure felt over their time in college. Integrating academic and career advising in response to their increasing relation at the hands of well-equipped academic advisors could decrease some of these pressures and increase student success.

As modern academic advising and career services offices have evolved to measure students' outcomes, they are increasingly being tasked with justifying their presence and impact on campuses. Higher education institutions are becoming increasingly aware of expectations about return on investment and value of education held by students. This has caused an increased call for accountability by these institutions on where they allocate their budget and the resources available to students. In their paper discussing the evolution of career services, Dey and Cruzvergara convey how critical it is for "all career centers to develop clear strategic plans that align with institutional priorities, to determine key resulting outcomes, and to define key performance indicators" (2014, p. 11). Metrics for advising success are increasingly centering on data and reputation, further forcing the field of career services to evolve into a more information-oriented space. Dey and Cruzvergara highlight how the outcomes data "only tell part of the story, and career services must continue to illustrate additional value added by showcasing metrics on reputation, referral, and engagement of key stakeholders" (2014, p. 12). This is leading to a push for assessments and analytics savvy counselors and a new set of required skills for career services staff.

Additionally, the changing nature of higher education have resulted in increased use of branding by colleges and universities. For career services, "establishing presence, creating a culture of career readiness, and showcasing institutional value require a high level of brand recognition" that can be cultivated through student outcome data and created campus connections (Dey & Cruzvergara, 2014, p. 12). Dey and Cruzvergara emphasize the need for career services and advisors to build stronger relationships on higher education campuses to be able to provide more individualized guidance to students and leverage network connections. As these players "gain more influence in their campus communities and become better resources and more connected to all their stakeholders, they will be better equipped to engage students early and often within their communities, offer them specialized career development support, and connect them to internship and employment opportunities as well as mentoring and experiential learning" (Dey & Cruzvergara, 2014, p. 14). Career services is once again evolving to take up a larger stake on college campuses but with this comes increased pressures on their staff and advisors with the expansion of their role and responsibilities.

Advising, in both the academic and career forms, is essential to student career exploration as staff in these spaces are one of the first points of contact students have for support in their career decision making process. While some potential changes to the structure and practices of advising have been floated, their challenging implementation adds to the wicked nature of the problem. In line with the characteristics of a wicked problem, these posed solutions are good-or-bad not true-or-false. Solutions like the implementation of developmental advising and merger of academic and career advising offices are neither a true nor false answer to the existing problems. They are instead viewed along a continuum of good and bad based on the perspective of the viewer. For example, a university administration may view the merger of academic and career advising offices as positive because of the opportunity to condense positions and decrease costs but an advisor working in one of those offices may view it as a bad solution because of their preexisting workload, efficacy, and stress.

Another aspect of advising's impact on career exploration's wickedness is that the person or group planning any potential solution has no right to be wrong. Academic and career advising decisions impact staff in both areas, students, and university brands. Potential changes or mergers could lead to the loss of advising jobs, decreased reach or impact to students, and shifting perception of universities primarily in their support of students. These ramifications are real and create major consequences for involved parties contributing to career exploration in higher education's wicked nature.

Career Exploration Curriculum

Overview

Career exploration curriculum encompasses all career-related classroom interventions. These interventions can take two different forms: within the major's curriculum or in a standalone career or major exploration course. In their paper, Schwartz, Gregg, and McKee discuss the implementation of career-related material into psychology curriculum, primarily for the purpose of drawing a connection between the course's content and career decision making (2017). The authors argue that aiding the development of a student's professional identity is a necessary focus for academic departments. Student success in career decision making requires thought of how the skills they have learned translate to the world outside of the classroom (Schwartz et al., 2017). An example of this, discussed by the authors, is assignments within academic courses centered on vocational decisions. These assignments include "mandatory meetings with a faculty member outside of class, career goal statements, and resume writing workshops" (Schwartz et al., 2017, p. 54). Additionally, panels and presentations from alumni, professionals, and older students can be particularly beneficial in describing life after college and specific experiences that students can relate to (Schwartz et al., 2017). Career courses can also capture graduate school indecision and aid student's navigation of their post-graduation options.

Operationalization

A 2011 study conducted by researchers at the University of Wisconsin-Milwaukee evaluates the impact of major/career planning course at a large public Midwestern university. The study was designed to evaluate 56 students enrolled in a 2-credit course designed for first- and second-year college students to select their majors and plan for their futures. They were surveyed at the beginning of the semester they took the course as well as at the end of the semester along several measures. The measures were components of Krieshok, Black, and McKay's trilateral model of adaptive career decision-making. The first component, occupational engagement, "emphasizes the need for individuals to understand the world of work by learning about and participating in various activities to contribute to their fund of information" (Fouad et al., 2016, pp. 460-464). The second component, career adaptability, is "the readiness to cope with the predictable tasks of preparing for and participating in the world role and with the unpredictable adjustments prompted by changes in work and working conditions" (Fouad et al., 2016, pp. 460-464). The third and final component, student career construction, "investigates the adaptive behaviors needed to make career-related decisions" (Fouad et al., 2016, pp. 460-464).

The study found that the major/career planning course had a significant effect on occupational engagement and aspects of student career construction (Fouad et al., 2016). The results related on occupational engagement reinforced findings from a 2006 study that found that "career-related interventions made a difference in college students' occupational engagement" (Fouad et al., 2016, pp. 460-464). Student career construction was also impacted along the aspects of occupational exploration, career decision making, and skilling/instrumentation (Fouad et al., 2016). The researchers concluded that the results conceptually followed the goals of the major/career planning course which were to "focus on specific tasks and activities that promote the development of behavioral and adaptive components of decision-making" (Fouad et al., 2016, pp. 460-464). By thinking critically about different majors and career paths, the students increased their knowledge on the source and thus increased their occupational engagement as well. Additionally, the course fostered an examination of decision-making behaviors when it comes to the students' professional choices thereby increasing their career construction.

The study's findings suggest the importance of career-related curriculum and their impact, specifically on students' occupational engagement and career construction (Fouad et al., 2016). The researchers noted that students in courses such as these develop specific behaviors that can be of use to them when exploring and planning their careers (Fouad et al., 2016). These behaviors can aid them in making short term decisions such as choosing a major and in making long term decisions such as choosing a career path (Fouad et al., 2016).

Discussion

Schwartz, Gregg, and McKee highlight the importance of following a model of developmental advising when implementing classroom interventions. Students at different points in their academic career need advising tailored to them. For example, a sophomore may need assistance on internships while a junior focuses on applying to graduate school and a senior struggles with their job search (Schwartz et al., 2017). To address these developmental needs, universities can target different levels of students with advising through assignments in certain courses or a modular approach with career courses required at certain points in a student's academic career (Schwartz et al., 2017). However, the modular approach can be difficult to implement because of challenges related to curriculum revision.

The course highlighted in the 2011 study conducted by researchers at the University of Wisconsin-Milwaukee ascribes to the modular approach to career courses as it is designed for first- and second- year students. The findings of the study illuminate the effectiveness of this program design on student career exploration and planning. However, when and what magnitude should these courses be implemented? As discussed by Schwartz, Gregg, and McKee (2017), students at different points in their development need different interventions. It seems that implementing a career planning course too early in a student's development could cause unnecessary stress or preemptive career planning while a delayed intervention could be too late and not properly prepare the student to engage in the career decision making process.

One career exploration resource many universities offer to their students is career exploration and planning curriculum through specified career-oriented courses or within the curriculum of an academic course. This curriculum can encompass a wide array of topics relevant to the student career exploration experience and be presented in a myriad of ways. At the McCombs School of Business at The University of Texas at Austin business undergraduates take a course, BA 101: Professional Development and Career Planning, during their freshman year. The semester-long course is aimed to help students learn about the different majors and career paths available at the business school while also previewing the internship and job recruiting processes. In the course's career packet, written by Greta Fenley, there is a section covering career and major exploration which serves as an example of career exploration curriculum used in higher education.

The Career and Major Exploration section of the course packet first discusses the Career Development Cycle and its four steps: assess yourself, explore your options, create your plan, and take action (Fenley, 2017). Fenley points out that the career development timeline is not linear, and students can be anywhere in the Cycle at any given time and even in multiple phases at once. The course packet provides resources for each phase of the Cycle to further aid student exploration. For example, the assess yourself stage lists the Meyers-Briggs Type Indicator (MBTI) among other career assessments as resources to "provide insights into personalities" and even "careers best suited to each personality type" (Fenley, 2017, p.12).

The course packet then goes into more depth about major selection in a section titled "The 'Major' Dilemma" (Fenley, 2017). This section features questions to ask oneself when deciding what to study, actions to take to translate one's interests into a major, and opportunities for deeper understanding for students who already know what they want to major in. The section also provides students with a few helpful reminders regarding their major choice; namely that their major selection does not decide their career or life, they should pick a major that works for them instead of a "good major," and it's okay to take your time and change your mind along the way. Fenley then transitions into information on exploring career paths and recommends volunteering in the community, building a network, and conducting informational interviews as platforms for exploration. Each of these sections recommend students gain experience directly through service or indirectly by talking to those who are further in their career journeys.

The career exploration curriculum ends with further resources for students and a career planning checklist. The resources listed include the McCombs BBA Career Services site, the Occupational Outlook Handbook, O*NET Online, Reference USA, Vault Career Insider, and Wayfinder. These online resources cater to the student career exploration experience and are produced by both public and private sources. The career planning checklist contains four goals and recommended action items to achieve those goals. The four goals are “Explore & Discover,” “Research & Focus,” “Start Your Recruiting Journey,” and “Solidify Post-Grad Plans” (Fenley, 2017, p. 16). Each goal contains at least eight actions that students can take to accomplish these goals ranging from meeting with advisors to participating in student organizations to attending career fairs. The career exploration curriculum makes up six pages of an 86-page course packet but appears to do a thorough job of preparing students for their career exploration journey and providing them with resources for their next four years.

At UT-Austin students can provide feedback on their course and rate their experience through the Course Instructor Survey. In looking at Greta Fenley’s, a BBA career coach, BA 101 course instructor, and creator of the discussed course packet, it appears that students of the past two years rate the course between 4.5 and 4.6 on a scale of 5 with 4 being very good and 5 being excellent. As a past student of this course, I can also speak to the course’s impact. The class served as a great introduction into the variety of majors and opportunities offered at the McCombs School of Business. My peers and I heard from upperclassmen, professors, and alumni on different paths we could take.

However, not all universities have the resources or staff to implement courses like this one. Even at UT-Austin disparities related to career curriculum and preparation exist across programs and colleges. The structure and priorities an institution has can impact their implementation of career curriculum, greatly influencing the career exploration process for students.

Economic Factors

Overview

Higher education, its purpose, and its perception are all driven by social, economic, and political factors. As Dey and Cruzvergara discuss in their paper on the evolution of career services, "each paradigm shift in the delivery of career guidance in higher education was connected to changes in economic, political, social, generational, and cultural norms" (2014, p. 5). College cohorts have always represented the next generation of laborers thus connecting higher education to economic and labor market trends. As evidenced by the eras of career services, each paradigm shift was the result of university responses to the changing economy. Career services shifted from connecting immigrants to jobs to preparing teachers to matching GI Bill veterans to jobs and to connecting students and employers. In each period, universities sought to fill a gap in the labor market with its graduates, especially in the earlier years of career services.

Each era of career services was shaped by economic factors. As a result, student career exploration in higher education was also shaped by these factors. Career guidance from 1900 to 1920 was driven by an influx of new immigrants and a need to transition them into the American economy. The years from 1920 to 1940 were characterized by an influx of students due to high birth rates to which universities responded to the economy's need for teachers by providing teacher preparation. The post-World War II career guidance era ending in 1960 once again sought to meet a gap in the economy, providing veterans with jobs which led to career services becoming more placement oriented. Career services staff placed students in manufacturing and mining roles while working as job fillers (Dey & Cruzvergara, 2014). Career guidance in the 1970s and 1980s shifted away from job placement as economic growth slowed and competition in the labor market increased. Additionally, with the self-actualization movement coming to fruition students became more concerned with finding a job that fit with them rather than taking any position. During the dot-com boom in the 1990s and 2000s career services and student exploration toward connecting students directly to employers. This has continued to the current time in addition to increased development in career services.

It is evident that career guidance has evolved in higher education to match trends in the external environment, especially regarding the economy. As economic outlooks change for students, their career exploration experience changes as well. The paradigm shift between the 20 years following 1940 and the 20 years following 1960 best illustrate the economy's impact on student perceptions. After the economy slowed students shifted from wanting an open position to one that better fit with their personality and interests. Career services staff also shifted from mere job fillers to student support staff. Economic factors play a large role in how students pursue career exploration and how higher education institutions facilitate the process.

Operationalization

The most recent paradigm shift in higher education career exploration was triggered by the 2008 financial crisis. Dey and Cruzvergara how "driven by increased pressure and demand for accountability from students, parents, alumni, faculty, and even government, many universities began the process of reinventing their career department moving them from the traditional transactional model of career services toward a customized connection model that promises specialized career development support to students and meaningful connections to internship and employment opportunities as well as mentoring and experiential learning" (2014, p. 8). This new period defined by accountability seeks to offer "a stronger emphasis on building connections through partnerships with employers from a variety of sectors, experiential learning, mentoring, and developing career communities of learners and networkers that will engage students and alumni for a lifetime" (Dey & Cruzvergara, 2014, p. 8). The economic downturn led to questions of a degree's value and fewer available jobs to which colleges and universities responded with increased investment in career services and student professional development resources (Dey & Cruzvergara, 2014).

Even with the additional resources, though, graduating into a poor economy or recession can have long-term effects causing major impacts to the higher education career exploration experience. For students graduating during the financial crisis and students graduating during the COIVD-19 pandemic, the economic conditions are largely important to their career journeys.

In an article by the National Bureau of Economic Research, researchers concluded that "graduating in a recession leads to large initial earnings losses" which "amount to about 9 percent of annual earnings in the initial stage" (2006, para. 4). These losses "eventually recede, but slowly -- halving within five years but not disappearing until about ten years after graduation" (NBER, 2006, para. 4). The article's referenced study, conducted on Canadian students, found that luck mattered to graduates as graduating into an economy in recession had such profound monetary impacts. The study additionally found that graduating during a recession influences one's entire career as the recession led "workers to start at smaller and lower paying firms" after which they caught up "by switching jobs more frequently than those who graduate in better times" (NBER, 2006, para. 4). During times of economic recession, these impacts are not lost on college students resulting in increased pressures for students to explore careers and find positions.

Economic recessions and downturns also impact higher education policies and goals. The 2008 financial crisis resulted in a paradigm shift of career guidance and exploration in higher education but also in significant financial and structural shocks to colleges and universities. In his paper, Roger Geiger discusses the impact of the crisis on United States higher education.

Financially, the crisis hit university endowments, even the nation's largest, hard. Decreased endowments led many institutions to announce, "permanent budget reductions of 10 percent" (Geiger, 2010, p. 9). Budget reductions as large as these are only possible with layoffs, decreased university budgets, hiring freezes, and cancelled infrastructure plans (Geiger, 2010, p. 9). The crisis not only impacted higher education institutions' internal funding but also external through decreased state support. The Great Recession led to massive funding cuts for higher education because of halted or decreased state appropriations. As a result, universities were forced to decrease their quality and/or services as well as increase already rising tuition (Geiger, 2010). The financial crisis greatly exacerbated already existing problem of underfunding in higher education as underinvestment and divestment had been happening for many years prior (Geiger, 2010).

These financial shocks to higher education led to changing enrollment trends for many colleges and universities. Students began to weigh cost more heavily when deciding on education options and opted for cheaper avenues. For example, students turned away from private schools to public schools, four-year programs to two-year programs, and toward community colleges

(Geiger, 2010). The financial and structural shocks higher education faced amidst the recession resulted in many long-term consequences for the United States that are still major issues today. Due to permanent budget cuts and lack of state tax revenues, universities elected to increase tuition and lower financial aid (Geiger, 2010). The ramifications of this are great and impact most American students in some fashion. The increased cost of higher education has lengthened time to degree rates and decreased completion rates, especially for less affluent students (Geiger, 2010). To illustrate this effect, imagine a student faced with the rising cost of tuition. They take on a part-time job to help afford school which then directs some of their attention that in the past would be on their academics toward work resulting in more time needed to complete their courses and degree.

Additionally, the rising cost of college has led to a shift in the student experience at higher education institutions (Geiger, 2010). Higher faculty to student rations, increased part-time professors, and fewer available classes have led to a change in the learning environment. Finally, the lingering impacts of the Great Recession on college cost have skewed attendance across socioeconomic and racial groups (Geiger, 2010). As fewer wealthy students become unable to meet the rising cost of education, higher education will skew more toward affluent, predominately white students (Geiger, 2010).

Many of these long-term consequences brought on by the 2008 financial crisis are still relevant in higher education. These consequences impact student enrollment and experience at colleges and universities across the nation as well as students' career outlook. The impacts of the 2008 financial crisis can also serve as indicators of long-term effects brought on by the COVID-19 pandemic and following economic downturn.

Discussion

Economic factors impacting higher education effect students' career exploration during their college experience but also beyond their graduation. An article published in the Wall Street Journal conveys the struggles faced by individuals who graduated after the Great Recession and the long-term career related effects they have experienced in the five years following the 2008 financial crisis. By 2013, when the article was written, much of America had recovered but young people, specifically those who were in high school when the recession hit, were being left behind. While the unemployment rate for individuals under 25 had decreased from its peak in 2010, the rate was "more than 2½ times the rate for those 25 and older" (Casselman, 2013, p. 2). The article highlights, though, how the unemployment rate "ignores the hundreds of thousands of young people who have taken shelter from the weak job market by going to college, enrolling in training programs or otherwise sitting on the sidelines" and how if they were added back in the rate would "be over 20%" (Casselman, 2013, p. 2).

Recessions also have long-term impacts on young adults, specifically college graduates. Following the 1980s recession, "new college graduates lost 6% to 7% in initial wages for every one percentage point increase in the unemployment rate" and while "the effects shrank over time" even "15 years after graduation, those who finished college in bad economic times earned less than similar people who graduated in better times" while "some never caught up at all" (Casselman, 2013, p. 2). Research has also show that the immediate few years following graduation from college can play a huge role in an individual's career, so graduating into a recession can be harmful to the long-term financial health of students. The article highlights how "about two-thirds of wage growth, on average, comes in the first 10 years of a person's career" (Casselman, 2013, p. 4). In times of economic downturn graduates "are likely to accept lower wages and work for smaller companies with fewer opportunities for advancement" which can lead to them never moving "off that second-tier track" (Casselman, 2013, p. 4).

The economic environment a student attends college in also plays into the amount of stress they face. For example, the article illustrates the struggle of one student from Missouri that has a full-time job while also taking a full course load. The financial and emotional stress led to the individual withdrawing from college and being left with over $25,000 in student debt. The interviewed student also highlighted how some students earn their degrees and still work at the same minimum wage job, a source of great discomfort and anxiety for the student who plans to one day return to their degree.

The rising cost of college is wiping away some students' dreams of attending college while leaving many others with mounds of student debt. By 2012, "student loan balances nearly tripled from 2004" and were "roughly $1 trillion" (Casselman, 2013, p. 4). Today, that number is estimated to be $1.7 trillion and is attributed to 44.7 million Americans with student loan debt (Student Loan Hero, 2021). The average debt at graduation from public and nonprofit colleges alone was $28,800 in 2019 (Student Loan Hero, 2021). Additionally, 66% of graduates from public colleges had loans as of May 2018 while 75% of graduates from private, nonprofit colleges had loans and 88% of graduates from for-profit colleges had loans (Student Loan Hero, 2021). These numbers are staggering and convey the fast-rising amount of student debt held in the United States. The Wall Street Journal article highlights how the increasing level of student debt can have long-term consequences for its holders. A study from the left-leaning think tank Demos "estimated that $53,000 in student debt—the average debt burden for a household with two college graduates--will reduce lifetime wealth by more than $200,000" (Casselman, 2013, p. 4). The "high debt levels are making it harder for graduates to advance in their careers by changing jobs, moving to a different city or accepting internships that can open up career opportunities down the road" (Casselman, 2013, p. 4).

Both the short-term and long-term effects of taking on student debt factor into the student career exploration experience in higher education. Students can miss out on formal university career services programming and in-class learning experiences. Additionally, the economic environment can contribute to how students approach and pursue career exploration.

One study conducted on Canadian 12th graders living in a community experiencing recent closures of mining and steel industries found trends in how career decision making is impacted during times of economic downturn. Researchers found that students with knowledge on their career choices "were still positively engaged in the career development process and had considerable confidence in their career decision-making abilities" (Chisholm & Edmunds, 2001, p. 284). However, "students without a definite career plan appeared to be at-risk for career indecision, lower career maturity, increased academic, career, and vocational indecision, and increased career attrition" (Chisholm & Edmunds, 2001, p. 284). Additionally, these students were at risk of developing a "learned helplessness" in their school and work spheres in which they view their lives to have an external locus of control and are less confident in their career decision making abilities (Chisholm & Edmunds, 2001).

Economic factors greatly impact students' college selection, college experience, and life after college making it an important piece of the complex career exploration process in higher education. At each phase in their career exploration timeline, students are impacted by all of the other related antecedents in addition to economic stressors. Today's students especially are increasingly impacted by economic outlooks and expectations as they pursue college opportunities and explore careers.

Conclusion

Career exploration in higher education is a complex issue with a variety of stakeholders including university administrations, faculty, staff, students, employers, and families that each have competing priorities. The prior sections of this paper have defined, described, and discussed important aspects of the career exploration process and their contribution to the wicked nature of career exploration on college campuses. To further convey the wicked nature of this topic it is impactful to revisit Rittel and Webber's (1973) properties of wicked problems and apply the framework to career exploration in higher education.

1. *There is no definitive formulation of a wicked problem.*

The problem of career exploration in higher education is complex due to its myriad of stakeholders, priorities, and resources. This complexity makes it challenging to fully understand all that is at play with this issue in turn making it difficult to define and solve. Additionally, as more context is gained, and perspectives are understood new factors are unveiled as stakeholder views shift and new social, economic, and political trends emerge.

2. *Wicked problems have no stopping rule.*

If an individual or group were to implement a solution to mitigate the complex challenges presented by career exploration in higher education, they would be unable to know exactly when a solution was found. Tracking student growth and development can be very difficult yet it is still easier than tracking other stakeholders' success factors in the career exploration space. Additionally, due to the sheer number of stakeholders involved in the career exploration process and the gaps in resources they have access to, a solution's success would be difficult to measure and define across all parties involved.

3. *Solutions to wicked problems are not true-or-false, but good-or-bad.*

Career exploration in higher education is comprised of a myriad of stakeholder groups who in turn have a myriad of perspectives. As a result, any solutions to the career exploration structure would neither be true-or-false but good-or-bad. These judgements would also differ across these groups because of their perspectives and respective interests.

4. *There is no immediate and no ultimate test of a solution to a wicked problem.*

Any presented solutions to the issue of career exploration in higher education would create waves of repercussions that impacted involved stakeholders over an extended period of time. The impacts of such solutions are difficult to evaluate in the short-term following implementation but also in the long-term because of available metrics and complete understanding of the stakeholders involved in the repercussions.

5. *Every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial and error, every attempt counts significantly.*

The waves of repercussions following the implementation of a solution eliminate the opportunity to learn by error or iteration. Career exploration in higher education has a direct impact on the livelihood of many – students, families, staff, and faculty – in addition to the adjacent effects that could be felt by many. These elevated stakes for potential solutions to career exploration increase the complexity of the issue as every attempt leads to a large impact and counts significantly.

6. *Wicked problems do not have an enumerable (or an exhaustively describable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan.*

The issue of career exploration in higher education is comprised of many opinions and many stakeholders eliminating the notion of a set of finite rules for creating a solution. The issue is complex and ill-defined in some areas making it difficult for an individual or group to create a solution. Any solution would have to be crafted with the perspective and judgement of that individual or group at the forefront which most likely could not include all views and opinions. Therefore, any potential solution to the issue of career exploration in higher education would be ill-defined and lacking in many respects.

7. *Every wicked problem is essentially unique.*

Career exploration in higher education faces challenges that overlap with some other major issues but is essentially unique because of the way these challenges interact. For example, poverty impacts career exploration for college students but the problems differ in many more ways than they are similar. Additionally, this issue is quite complex and at times ambiguous making it difficult to group with other issues society faces.

8. *Every wicked problem can be considered to be a symptom of another problem.*

Several challenges interact to create the issue of career exploration in higher education and many of these challenges are symptoms of other problems. Gaps in resources, education, and wealth can impact a student's career exploration experience in various ways. Likewise, differences in priorities, funding, and resources can impact the way in which an institution approaches career exploration. This issue increases in complexity as stakeholders are explored and the problems impacting those stakeholders are defined.

9. *The existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution.*

Each stakeholder group involved in career exploration views the issue differently and further differences exist within groups leading the explanation of the problem to be presented in numerous ways. Personally, I am a college student undergoing my own career exploration experience which makes my perspective for this thesis different than if a university president wrote it. The discrepancies lead to different understandings of challenges career exploration in higher education presents and the solutions that could potentially mitigate them.

10. *The planner has no right to be wrong.*

Any implemented solution regarding career exploration in higher education will impact an enormous amount of people, both in the immediate present and future. As a result, parties attempting to create solutions are at little to no margin for error. Students' growth and livelihood as well as the livelihoods of faculty, staff, and families are on the line when it comes to career exploration on college campuses.

This thesis has sought to define and evaluate the myriad of factors and stakeholders involved in the higher education career exploration process through the framework of a wicked problem. It can be concluded that the issue meets the characteristics of a wicked problem and thus must be approached with the context of one. Any potential solutions produce waves of ramifications for many involved in the higher education setting both in the immediate present and future. Career exploration is essential to the growth and development of college students and requires further evaluation from currently identified stakeholders as well as other impacted groups.

Classifying career exploration for undergraduate students as a wicked problem can inform future approaches and lines of thought regarding the issue. In analyzing and understanding student career exploration through this framework, stakeholders can be better aware of the topic's intricacies and complexities thereby informing how career exploration is discussed and adapted. For example, university administrators could utilize this analysis to make more informed and potentially beneficial decisions regarding student career exploration on campuses as they are able to see the larger picture and understand the ramifications of their actions.

Additionally, viewing career exploration through this lens can contextualize the process and illuminate different and unique perspectives. The wicked problem framework provides structure for approaching a very complex topic and conveys the idea that the stakeholders of career exploration view the topic differently. In highlighting these differences, stakeholders can be better informed of the thoughts, wants, and needs of opposing stakeholders. For example, professors with a specific view of the career exploration process may be better equipped to aid their students during their undergraduate career after evaluating career exploration through this framework. Students can also benefit from this analysis as it can showcase those with a similar experience or timeline in addition to illustrating how varied the process is actually experienced.

Finally, understanding career exploration as a wicked problem can lead to the utilization of problem solving by analogy. Other societal issues like climate change and poverty are wicked problems, problems that are seemingly impossible to solve, but people are still working to mitigate them. In viewing career exploration as a wicked problem, stakeholders can brainstorm solutions using methods and procedures being used in the pursuit to solve other wicked problems. By evaluating processes being used in analogous issues, new and innovative solutions or mitigations can be implemented in career exploration. Classifying career exploration as a wicked problem does not end the conversation surrounding it, rather it inspires new discussions, ideas, and actions.

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BIOGRAPHY

Amy Cox was born in Austin, TX on October 7, 1998. She enrolled at The University of Texas at Austin in 2017 and pursued degrees in Finance, Canfield Business Honors, and Plan II Honors. In college, she was a member of the Longhorn Band, president of Tau Beta Sigma, and volunteer with Students Expanding Austin Literacy and the Plan II/KIPP Partnership. She graduated with her undergraduate degrees in 2021 and will be moving to Dallas, TX to begin her career as a Learning and Development Specialist with Sendero.