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The Impact of Teaching Resilience, Goal Attainment, and Other Essential Leadership Skills to Young Adults via Virtual Instruction

By

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Abstract

Are some individuals naturally more likely to achieve their goals than others, or can anyone be taught resilience, goal attainment, and other essential leadership skills to be successful? Strategies like SMART goals can help, but theories involving positive psychology, trauma-informed practice, self-actualization and the hierarchy of needs, and others suggest that resilience strategies can also be learned. Resilience can be learned naturally, perhaps during a traumatic event such as war, grief, or other stressors. Rather than learning this lesson the hard way through life's "hidden curriculum", this research focuses on the importance of explicit resilience instruction. Higher education is one setting where these lessons may be taught, but through technology, the impact and access to these strategies are greatly expanded. The purpose of this longitudinal survey research is to examine the impact of a regular personal development practice on resilience when delivered via virtual instruction among young adults enrolled at a university in the Southern Tier of New York while controlling for age, gender, race, income, and majors. While this study did not find significant differences in baseline and final resilience scores among young adults enrolled in a public university in the Southern Tier of New York due to, at the very least, small sample sizes and a pandemic, the mission of supporting all humans as they develop *is* significant and the pursuit of the best available strategies and techniques is worthwhile. Future research can attempt to demonstrate why teaching resilience is still an important mission.

Chapter One: The Problem and Its Setting

Introduction

New Year's resolutions are rarely achieved. While the goals of shedding body fat or finding true love are admirable, they are likely too broad for most people to achieve without making a drastic lifestyle change, which, in itself, is difficult for most people to maintain. Instead, specific, measurable, attainable, realistic, and time-bound (SMART) goals are more likely to be attained. Sometimes, no matter how "SMART" a goal is, life can get in the way. Why are some people more likely to overcome adversity? Why are some people more likely to achieve their goals than others? Does strengthening resilience lead to greater goal attainment? Does the delivery of and access to personal development skills, especially resilience training, improve when delivered by virtual instruction?

The literature that provides evidence supporting the need for studying this problem includes research on resilience, goal attainment, collaboration, virtual instruction, positive psychology, trauma-informed or resilience-informed practice, self-actualization and the hierarchy of needs, and the hidden curriculum from disciplines such as education, social work/psychology, and neuroscience. The marriage of the aforementioned topics from multiple disciplines provides a critical lens to view this problem.

Resilience theory considers the impact of adversity on individuals and families and how well they subsequently adapt to that traumatic event (Reid, 2019). Similarly, at its core, trauma-informed practice is a treatment approach, framework, or model which centers on understanding, recognizing, and responding to the effects of all types of trauma. The trauma-informed practice approach got its start after research on veterans

from World War II and the Vietnam War identified the severe and pervasive effects of combat-related Post-Traumatic Stress. The Person Process-Context Model, developed by Michael Rutter in 1987, presents six significant predictors of resilience: stressors, the external environment, person-environment interactions, internal self-characteristics, resilience processes, and positive outcomes (Reid, 2019). Aside from the factors outside an individual's control, processes can be learned to enhance resilience.

Resilience-informed therapy for complex PTSD, whether it comes from a traumatic event such as war or from ongoing abuse or neglect, operates on the basis that resilience can be learned and practiced (Schwartz, 2017). Similarly, research on happiness confirms that half of our happiness is controlled by a genetic set point, ten percent is controlled by the actual circumstances, but forty percent is within our control: "If we observe genuinely happy people, we shall find that they do not just sit around being content. They make things happen. They pursue new understandings, seek new achievements, and control their thoughts and feelings." (Lyubomirsky, 2008). Research on the growth mindset shows that "when students learned through a structured program that they could 'grow their brains' and increase their intellectual abilities, they did better" (Dweck, 2015). The brain itself is malleable, powerful, and resilient.

Establishing procedures to set an individual up for success, like the development of SMART goals, can lead to positive outcomes that enforce resilience and a growth mindset. Beyond intrinsic motivation and self-regulation, external motivators and gamification processes like points and leaderboards show promising results related to goal attainment specifically (Landers et al., 2015; Hamari et al., 2017). This gamification is especially successful when used in conjunction with SMART goals. A team of

researchers developed their own version of SMART goals, known as the SMART-Goal Evaluation Method (SMART-GEM), and found the addition of a collaborative support team led to greater goal attainment (Bowman et al., 2015).

Goal attainment is related to the habit loop, which was a main focus of Duhigg's book, *The Power of Habit* (2012), and was expanded on by Hiedanpää & Bromley (2014) who noted the human aspect of the habit loop, which makes the process far less mechanical. Duhigg's (2019) later musings on the success of groups like Alcoholics Anonymous is confirmed by researchers (Godwin et al., 2015; Matarrita-Cascante et al., 2017) studying resilience from a group or couples' perspective: having a support system and belief in the power to achieve a goal (which is similar to Dweck's aforementioned 'growth mindset'), whether it be sobriety or something else, are a key feature of goal attainment.

Within the realm of virtual instruction, some noteworthy software applications are breaking ground in personal development and resilience training. For example, Jane McGonigal's SuperBetter application led to greater emotional resilience and optimism and fewer concussion symptoms, including depression and suicidal ideation (Roepke et al., 2015; Worthen-Chaudhari et al., 2017), which is especially promising when considering the theories of resilience and trauma-informed practice. Another application tested Provider Resilience (PR) in mental health providers and found lower levels of burnout (Wood et al., 2016). Virtual instruction allows resilience workers across education, social work, and other human services settings to reach and impact more people than might be possible in traditional settings.

These examples outside of the university classroom indicate there may be promise in the application of them to the university classroom. In her autobiography, Helen Mirren writes, “It seems to me that the years between eighteen and twenty-eight are the hardest, psychologically. It's then you realize this is make or break, you no longer have the excuse of youth, and it is time to become an adult – but you are not ready.” (Mirren, 2008). These young adults are the population for whom this study seeks to serve. Young adults are ‘not ready’ because there are many life skills part of a “hidden curriculum” (Edwards, 2014) which are not explicitly taught; this includes, but is not limited to: self-care, self-discovery, self-efficacy, resilience, goal attainment, and other lessons within personal and professional development spheres. Young adults often learn these skills ‘the hard way’, but explicitly teaching these foundational skills as part of the post-secondary curricula may strengthen resilience and ensure greater goal attainment in this population at that time of significant development and throughout the rest of their lives.

While these studies on resilience and virtual environments are primarily for specific audiences, including those with PTSD or concussions or mental health providers, and are using software applications, these successes may translate to young adults in other virtual environments aside from apps. University can be especially stressful for students, and students are known to face a wide range of symptoms, including depression, anxiety, low self-esteem, alcohol dependence, learning disorders, stress, eating disorders, and other psychological concerns. On top of these challenges, students with mental health concerns face additional challenges and are expected to advocate for themselves and seek the required resources. Could it be that the traditional curriculum addressed in secondary and post-secondary education overlooks key strategies and fails to address another,

hidden curriculum? Should all individuals have access to these skills? The explicit instruction of resilience, goal attainment, and other personal development skills may be particularly effective when delivered by virtual instruction to this population, and the design that includes young adults avoids restriction and opens accessibility to all young adults rather than just those who have access to resources on a university campus (although students were recruited via university campus email lists, anyone young adult who is 18-23 is eligible to participate in this research study and in future research).

The guiding query for this study is to investigate the impact of a regular personal development practice when delivered by virtual instruction and the factors associated with goal attainment when practiced regularly in a virtual environment. This research ultimately examined one specific curriculum and the relationships between those who accomplish goals and those who don't accomplish goals when considering the integrity of participation in the curriculum. In essence, why are some people more likely to achieve their goals than others, and how does personal development practice influence resilience?

Theoretical Framework

Three main theories guide this research: the theory of the hierarchy of needs (Maslow, 1943; McLeod, 2018), the theory of trauma-informed practice (Walters, 2018), and the theory of the hidden curriculum (Kegan, 1998; Edwards, 2014). In addition, positive psychology and theories of happiness (Achor, 2011; Lyubomirsky, 2008) and the theory of servant leadership (Northouse, 2016) enhance the discussion. Achor (2011) refers to positive psychology as "the vanguard of a scientific revolution...in the way that we look at the human brain" and "if we study what is merely average, we will remain

merely average". He is especially interested in those who are above average in intellectual ability, athletic ability, creativity, energy levels, resilience in the face of challenges, then understanding why, and ultimately increasing that average in schools and companies worldwide. He goes on to explain the misconception that happiness is predicted by the external world when, in actuality, 90% of long-term happiness is predicted by the way the brain processes the world. In addition, 75% of job success is predicted by optimism levels, social support, and seeing stress as a challenge. The 'happiness advantage' shows that a positive brain performs significantly better, with increases to intelligence, creativity, energy, and other business outcomes such as productivity (31%), sales (37%), and speed/accuracy (19%). The brain can be retrained or rewired in 21 days through practices like gratitude lists, journaling, exercise, meditation, and random acts of kindness.

According to Abraham Maslow in his 1943 paper called "A Theory of Human Motivation" (via McLeod, 2018), individuals must have fundamental needs met before they can pursue higher needs like development or creativity. The physiological needs, the most basic needs, include the need for air, water, food, rest, and health. The security needs include the need for safety, shelter, and stability. The social needs include the need for being loved, belonging, and inclusion. The ego needs include the need for self-esteem, power, recognition, and prestige. Lastly, and only once all prior categories are met, one can pursue self-actualization or the need for development and creativity. This framework guides the curriculum that focuses on personal development, and there is an assumption that the other needs are satisfactorily met. Enhancing access and availability

to this curriculum through virtual instruction attempts to acknowledge that there may be barriers and that all are deserving of these strategies.

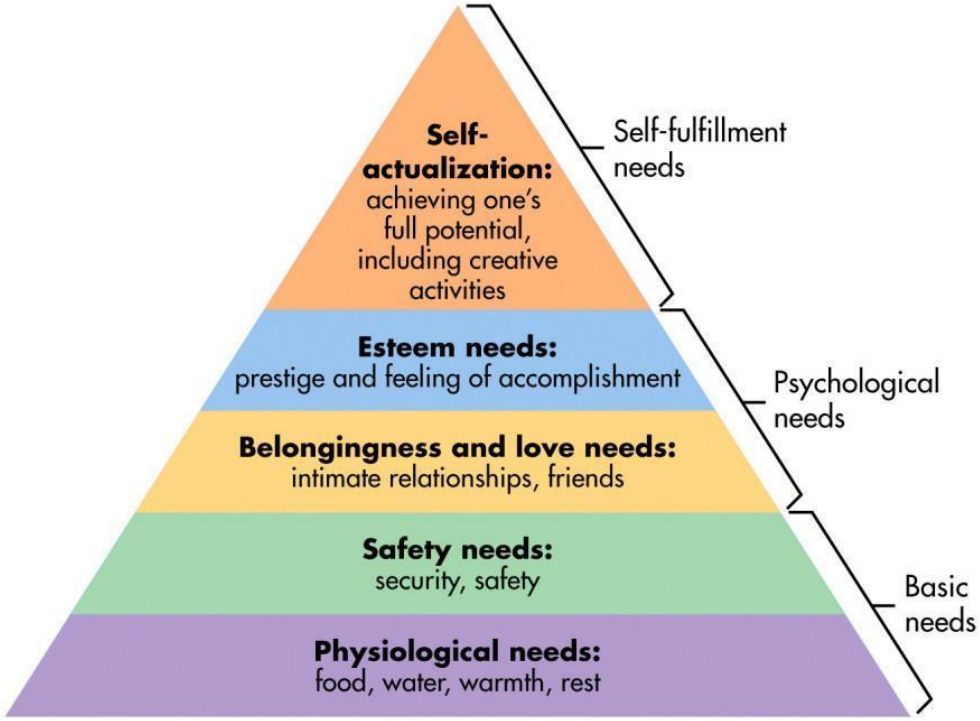

Figure 1: Maslow's Hierarchy of Needs (McLeod, 2018).

The theory of trauma-informed care, according to the Adverse Childhood Experiences (ACEs) network, includes three components (Walters, 2018). Before self-actualization can be pursued, these particular needs must be met. First, practitioners must create a safe environment. Second, practitioners must build relationships and connectedness. Third, practitioners must support and teach emotional regulation. This framework is fundamental in the creation of the curriculum itself, the safe and accessible virtual learning environment with collaborative communities of learners, and the initiative of strengthening resilience.

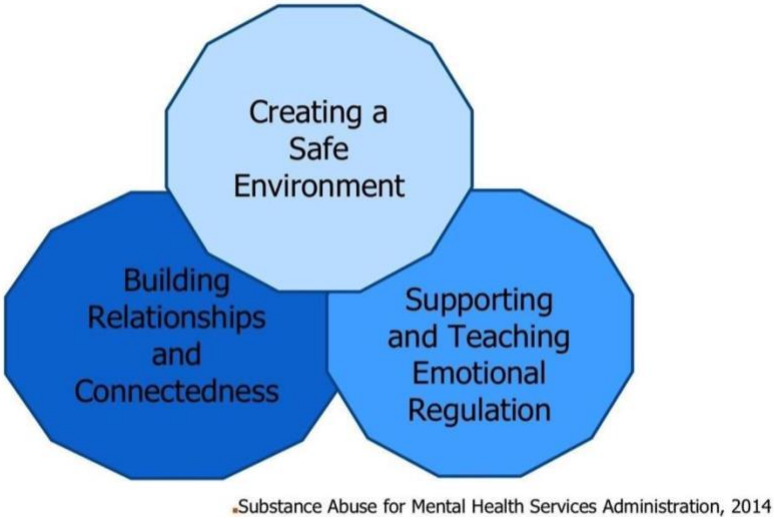

Figure 2: Components of Trauma-Informed Care (Walters, 2018).

In addition, the theory of the hidden curriculum frames this investigation. In Kegan's *In Over Our Heads* (1998), the "Mental Demands of Modern Life" are explored. While reviewing various stages of human development, new phases of consciousness are expected along the way. Young adults are expected to respect and understand their parent's perspectives while navigating their own identities, making their own rules, trying to keep up with their peers, and ultimately becoming capable of this cross-categorical construction. As new roles are defined in adolescence, it's no surprise that there is some role confusion occurring. Kegan's book encourages parents to be aware of what's happening in the world of a developing adolescent. Not only are they developing their own identity and dealing with the confusion of various roles, but they're also conflicted in fulfilling all of the expectations. This book perfectly describes the plight of adolescents being pulled in so many different directions and often needing to rebel in order to find themselves. Young adults have to learn this the hard way. What would happen if schools explicitly taught the strategies needed to navigate this successfully?

In scholarly critiques of education, the hidden curriculum of domination is examined, which values competition, individualism, and authoritarianism, and assigns some students to educational tracks with limited outcomes. In addition to the traditional curriculum involving various subjects and skills, the hidden curriculum implicitly reproduces "unequal opportunities, inequalities, and exercises of power in the social order" (Edwards, 2014). Students intellectualize their existing structures of opportunity in education and in the wider social order, and they are conditioned into particular social and cultural roles. For example, working-class students may believe education is not for them, so they pursue working-class jobs with limited opportunities for social mobility. Likewise, women are often taught that their primary role is to care for others, so women are encouraged to be wives and mothers, feel inadequate if they do not achieve these titles, and struggle to maintain a balance between motherhood and careers. The hidden curriculum perpetuates social inequality, but virtual instruction has the power to transcend inequality and provide access to the necessary lessons which illuminate the hidden curriculum and increase the probability of success.

According to Joseph (2015), higher education institutions are criticized for failing to adjust to national requirements. Graduates are neither adequately trained to perform expected tasks nor able to be absorbed by the economy. Higher education institutions are expected to "address immediate and long-term sustainable development challenges" and to meet the needs of the national economy, society, and "the future challenges and aspirations of the nation" (Joseph, 2015). This is the hidden curriculum of marketability, and it is politically influenced. Strengthening personal development skills, most notably optimism and resilience, can also address the changing challenges and goals of the

nation. Individuals become more adaptable to the situations that arise, and this is, essentially, the definition of resilience.

Traditionalists argue the hidden curriculum is not political and does not promote any values, yet possessive individualism and meritocracy prevail. This hidden curriculum of domination suggests that failure is one's own fault. It considers the 'other' as anything but White, middle class, Eurocentric, and male. Instead, in order to nurture basic qualities such as autonomy, connectedness, and transcendence and to consider real-world situations, scholars endorse the creation of an "ethical school" which would cultivate these skills in developmentally appropriate ways (Shapiro & Stefkovich, 2016). This perspective acknowledges that there may be differences in the outcomes when considering race, class, gender, and age. Personal development curricula delivered by virtual instruction bridges the gap to reach those usually categorized as the 'other'; they can provide accessible developmental training to those who may need it most.

Paradoxes, such as control vs. democracy, individuality vs. community, worth vs. achievement, equality vs. competition, and compassion vs. sentimentality, highlight areas of miscommunication which eventually leads to misunderstanding. Society maintains these paradoxes, which then trickle down to schools. Rather than "the remote, neutral, seemingly objective discussions of rights, law, and justice", feelings, emotions, and compassion are required in ethics (Shapiro & Stefkovich, 2016). Personal development curricula can teach the necessary emotional intelligence skills that these paradoxes overlook.

Edwards specifically considered how software relates to the hidden curriculum. Earlier researchers "…argued that the work of code in the uptake of semantic

technologies in education could be examined as part of the hidden curriculum" (Edwards, 2015). In software, semantic technology encodes meanings separately from code and from data and content files. Therefore, computer technologies are not simply tools for the delivery of the curriculum. They are considered here as a secret code of the hidden curriculum; computer technologies affect standards, the teaching and learning that is possible, and the roles of students and teachers. Software is integrated into the daily lives of people outside of the classroom as well, including the capabilities of computers, smartphones, cars, traffic lights, microwaves, electric toothbrushes, and more. Mental practices are delegated to computers which instills a greater degree of technological agency. Personal development curricula can be used to meet the objectives of the hidden curriculum. With these benefits and implications in mind, it is important that the free and accessible versions of these virtual environments provide substantial access to the required lessons of the hidden curriculum.

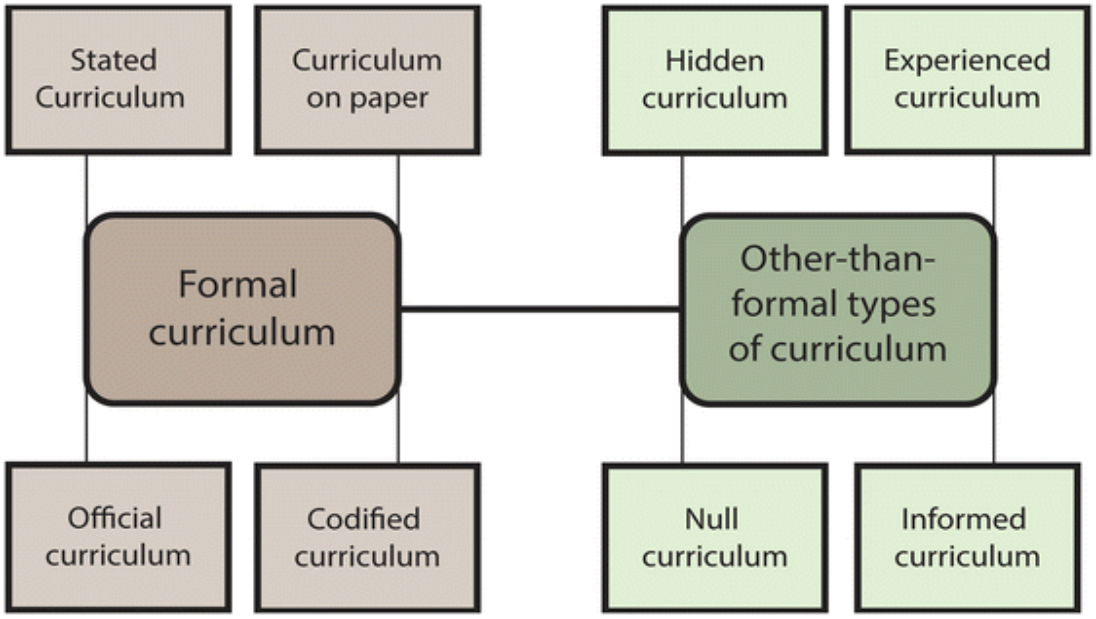

Figure 3: Hidden Curriculum (Hafferty & Finn, 2014).

In addition to acknowledging the hidden curriculum, the design of the leadership curriculum used as the intervention in this study is influenced by the theory of servant leadership which, according to Northouse (2016):

> …begins with the natural feeling that one wants to serve, to serve first. Then conscious choice brings one to aspire to lead...The difference manifests itself in the care taken by the servant—first to make sure that the other people's highest priority needs are being served. The best test...is: do those served grow as persons; do they, while being served, become healthier, wiser, freer, more autonomous, more likely themselves to become servants? And, what is the effect on the least privileged in society; will they benefit, or, at least, will they not be further deprived?

Servant leaders not only ensure that other people's highest priority needs are being served, but in order to do this, they must also grow themselves as persons and become healthier and wiser themselves. Servant leaders must model the behaviors they wish to evoke in their followers. Servant leaders acknowledge the context and culture of their environment, the attributes of themselves, and the receptivity of their followers. They work on their own emotions, put their followers first, empower others, and create value for the entire community. This leads to greater performance and growth of the greater organization and/or society.

Servant leadership considers human development and service to others in the community. This perspective also highlights accessibility and helps ensure that vulnerable populations like those in transition have access to the resources they need to succeed. This frames much of the curriculum proposed as an intervention to this problem.

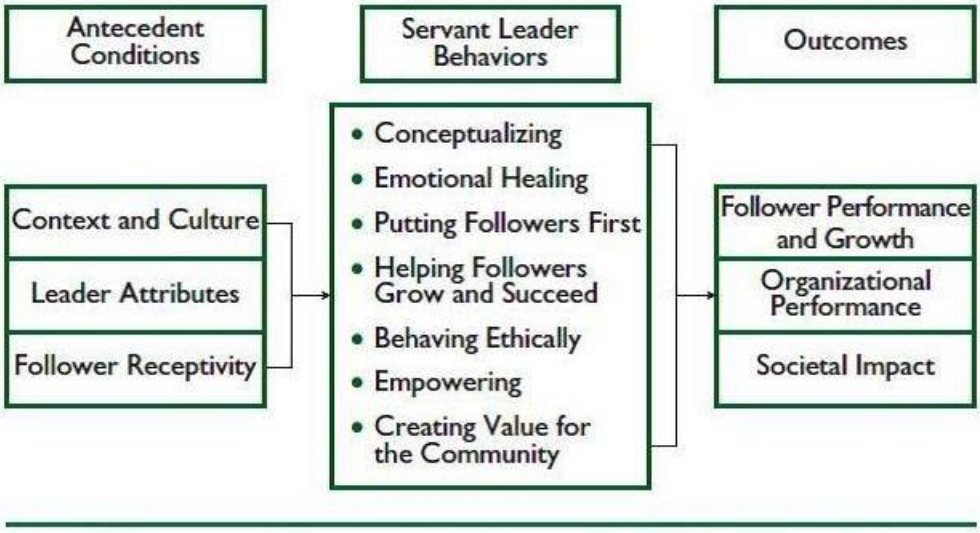

Figure 1: Northouse, P. G. (2013). Model of Servant Leadership.

Conceptual Framework

The ideal situation is that the curriculum helps as many people as possible. Various hypotheses propose that certain populations might need this assistance and training more than others. Perhaps it's best for high school students transitioning to freshman year of university. Perhaps young women in transition are more affected than young men, or vice versa, and could benefit from this curriculum. Perhaps it's women entrepreneurs or women in general, who still fight outdated practices, stereotypes, and wealth gaps, and who have much to gain from this service. Perhaps it's individuals of color, those who are oppressed under structures and institutionalized racism, who need this curriculum. Perhaps there is an ethical implication that those who can afford the premium content achieve their goals at different rates than do those who do not upgrade from the free content. Therefore, age, gender, race, and class are variables to be

considered in the eventual data analysis. This study assumes that the greater one's resilience is, the greater one's goal attainment is.

This research attempts to examine those who participate in the personal development curriculum and whether they are more likely to achieve their goals and build resilience. Those who participated had a significant number of connections with others, engaged with lesson content, and completed the required fields of the goals and other assignments. Those who did not participate with integrity may have logged in once but then not participated at all, may have logged in once or twice but not regularly, may not have attended class regularly, or may not have completed the required aspects of the curriculum. Meditating variables such as age, gender, race, income level, and major helped to isolate the population of young adults and determine if the curriculum itself, or if certain aspects of the curriculum, worked best for certain populations within the larger young adult group.

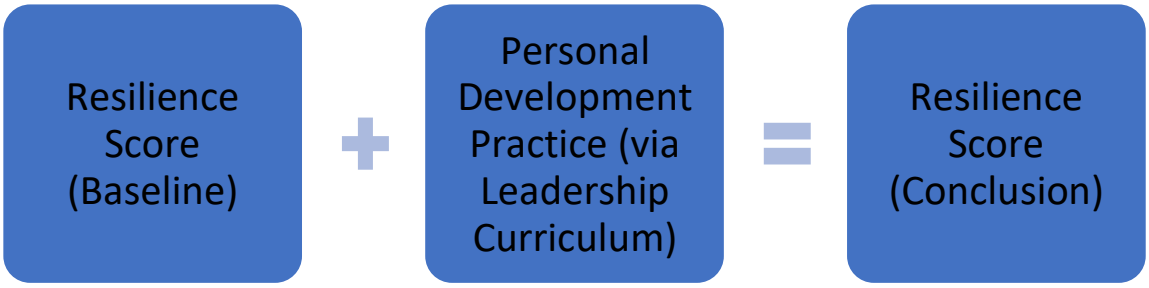

Figure 4: Conceptual Framework.

Purpose of the Study

The purpose of this longitudinal survey research is to examine the impact of a regular personal development practice on resilience when delivered via virtual instruction among young adults enrolled at a university in the Southern Tier of New York while controlling for age, gender, race, income, and majors. The independent variable of participating in the regular personal development practice was defined as participating in the curriculum with integrity, logging in regularly, sharing posts regularly, updating goal progression regularly, and completing other projects as assigned. The dependent variable of strengthened resilience was defined as participating in the majority of the lessons and taking both assessments, the demographic survey and the Connor-Davidson Resilience Scale. The mediating variables were defined as age, gender, race, income, majors, and minors to isolate young adults and determine trends among these demographics.

Research Question

This longitudinal survey research intends to answer the primary research question: What is the impact of a regular personal development practice on resilience when delivered via virtual instruction among young adults enrolled at a university in the Southern Tier of New York?

Sub-Problems

1. What is the baseline resilience score among young adults enrolled at a university in the Southern Tier of New York who participate in this virtual instruction?

2. What is the final resilience score among young adults enrolled at a university in the Southern Tier of New York who participate in this virtual instruction?
3. What is the baseline resilience score among young adults enrolled at a university in the Southern Tier of New York who do not participate in this virtual instruction?
4. What is the final resilience score among young adults enrolled at a university in the Southern Tier of New York who do not participate in this virtual instruction?
5. What are the differences between the final resilience scores of those who do participate in this virtual instruction and those who do not after controlling for baseline scores?

Hypothesis

Null Hypothesis: There is no difference among the young adults' resilience scores when participating in the virtual instruction after controlling for baseline resilience scores.

Alternate hypothesis: There is a difference in resilience scores between the young adults who participate in the virtual instruction after controlling for baseline resilience scores.

Definitions

Impact: The dictionary defines impact as a verb synonymous with effect (Collins English Dictionary, 2012). In this study, impact is measured as a significant difference between the baseline and final resilience scale scores of young adults who do and do not

participate in this virtual instruction. The conclusion provides additional anecdotes on other effects of the leadership curriculum aside from resilience scores.

Young adults: Young adults are defined as those in their teens or early twenties (Random House Unabridged Dictionary, 2019). In this study, young adults include users between the ages of 18-23.

Enrollment: Enrollment was measured as full-time and part-time students at a university in the Southern Tier of New York.

Southern Tier of New York: The Southern Tier of New York is defined as the geographic sub-region of the broader Upstate New York region, situated along the northern border of Pennsylvania. This includes the following counties: Allegany, Broome, Cattaraugus, Chautauqua, Chemung, Delaware, Steuben, and Tioga (Eisenstadt, 2005).

Regular personal development practice: Personal development practice is a broad term to describe research and training on skills such as optimism, resilience, compassion, time management, confidence, and so on (Millen, 2019). In this study, personal development practice was defined as the development of the necessary skills that the user requires in order to achieve their defined SMART goals. Personal development was measured according to the activity and participation within the curriculum; users with completed profiles, an active presence as measured by shares and connections, and active participation with lessons, or short lessons displayed to users according to their needs). This was be a score of 85% or higher.

Resilience: Aburn et al. (2016) compiled a systematic review of how resilience is defined in empirical research, and they conclude there are at least five key themes of

resilience. Among other definitions, resilience is derived from the Latin *resiliere*, which means to jump back, so resilience is the ability to bounce back or recover from trauma or difficulty. In this study, resilience strength is the ability to overcome adversity within a reasonable amount of time while acknowledging valid emotions that occur. Resilience strength was measured by a statistically significant increase on the resilience portions of the instrument.

Delivered via virtual instruction: The curriculum intervention used in combination with measuring resilience was taught online via MyCourses, formerly known as Blackboard. Participants in the experimental group had access to the baseline and post-assessments as well as the curriculum and activities.

Delimitations

The study is delimited to male and female teenagers and those in their early twenties (age 18-23). The study is delimited to a university in the Southern Tier of New York.

Study Significance

Personal development, especially resilience training, has implications for both individuals and their communities. While the initial target market of the curriculum is for young professionals, this could also have important outcomes in higher education, especially with students transitioning from high school to university or from undergraduate to graduate programs or as basic life and leadership skills to which all should have access. University students are known to face a wide range of symptoms,

including depression, anxiety, low self-esteem, alcohol dependence, learning disabilities, stress, weight gain, disordered eating, and other psychological concerns. On top of these challenges, students with mental health concerns face additional challenges and are expected to advocate for themselves and seek the required resources. The traditional curriculum addressed in secondary and post-secondary education overlooks key strategies and fails to address another, hidden curriculum; this leadership curriculum seeks to fill that gap. All individuals should have access to these essential life skills.

Chapter Two: Literature Review

Introduction

The interdisciplinary literature reviewed in preparation for this research study centered around four main themes: trauma-informed practice and resilience training; goal setting, goal attainment, and habit loops; personal development, optimism, and resilience; collaboration, community, and support. These areas were established in the early development of the leadership curriculum used as the intervention in the research study, including SMART goals and other aspects of resilience training, and the importance of a supportive community even in virtual environments. Lastly, there is an exploration of other researchers who have used the Connor-Davidson Resilience Scale (CD-RISC) to measure resilience in young adults specifically.

Trauma-Informed Practice and Resilience Training

In addition to the research referenced in the theoretical framework of this study and in upcoming sections about traumas like PTSD or concussions, it's interesting to consider Adverse Childhood Experiences (ACEs) and other long-lasting traumas. According to Nadine Burke Harris, an exposure was discovered in the mid-90s that "increased the risk for 7 out of 10 of the leading causes of death in the United States", "[affected] brain development, the immune system, hormonal systems, and even the way [DNA] is read and transcribed", and those who are exposed to high doses "have triple the lifetime risk of heart disease and lung cancer and a 20-year difference in life expectancy" (Burke Harris, 2014). This exposure is not a chemical or pesticide; the exposure is childhood trauma.

When she dug deeper into ADHD referrals she received, she found severe trauma. She cites the Adverse Childhood Experiences Study which asked 17,500 adults about adverse childhood experiences, or ACEs, including "physical, emotional, or sexual abuse; physical or emotional neglect; parental mental illness, substance dependence, incarceration; parental separation or divorce; or domestic violence" (Burke Harris, 2014). ACEs are common, but correlations with poor health are staggering:

> "For a person with an ACE score of four or more, their relative risk of chronic obstructive pulmonary disease was two and a half times that of someone with an ACE score of zero. For hepatitis, it was also two and a half times. For depression, it was four and a half times. For suicidality, it was 12 times. A person with an ACE score of seven or more had triple the lifetime risk of lung cancer and three and a half times the risk of ischemic heart disease, the number one killer in the United States of America (Burke Harris, 2014)."

It is a considerable aspiration to seek to train individuals on resilience, and it's important to consider the impact of ACEs. In early visions for this research study, the Adverse Childhood Experience (ACE) Questionnaire was considered, but as those discussions may be triggering and the researcher is not a licensed mental health professional, the Connor-Davidson Resilience Questionnaire was used instead as an assessment instrument.

Goal Setting, Goal Attainment, and Habit Loops

New Year's resolutions are a common form of goal setting, and they usually occur at a personal level outside of organizations. However, they do not always lead to

goal attainment. According to Dr. Lynn Bufka, “Setting small, attainable goals throughout the year, instead of a singular, overwhelming goal on January 1 can help you reach whatever it is you strive for” (APA, 2019). The way that a goal is established is related to whether that goal is attained.

Hamari, Hassan, and Dias (2017) outline the latest motivational designs of gamification, quantified-self, and social networking in order to achieve goals via motivational enforcement. Gamification is related to game design, quantified-self is related to big data, wearables, and dashboard design, and social networking is related to social networking services. In the exercise encouragement application HeiaHeia, gamification features are important to users whose goals are results-driven and who are interested in accountability to others. Quantified-self features are important to users whose goals are results-driven and who intend to master their goals. Social networking features are different: they do not work well for users who tend to avoid their goals and who are reluctant to share their goals and achievements with others. Although more research is needed to generalize these results, applications that feature the components of gamification, quantified-self, and social media are promising.

Landers, Bauer, and Callan (2017) agree with the promise of gamification features: “In the organizational context, gamification is a promising avenue by which to increase employee task performance (i.e., in-role behavior), one dimension of individual work performance. By directing and rewarding employee attention to particular focal tasks through goal setting, performance can be improved” (Landers et al., 2015). The researchers build on the goal-setting theory proposed by Locke decades earlier, “…who proposed that people will be motivated to strive towards goals…due to the psychological

process of self-regulation, which acts as a meditator (i.e., intermediary causal process) between set goals and performance). Self-regulation can be defined as the modification of thought, affect and behavior" (Landers et al., 2015). There is something inherently motivating about the goal-setting process, but there are ways to increase the likelihood of goal attainment.

Research over the past forty years discussed motivational interventions used to establish and achieve goals, but modern research is beginning to explore gamification. Two of the most common types of gamification with user-established goals are the use of points and the use of leaderboards. The effects of leaderboards have been studied, but it's usually in addition to badges or narrative game elements and is difficult to isolate as a single gamification technique. In the Landers study, the researchers examine leaderboards and hypothesize that users should reach at least one goal and use self-regulation to reduce the discrepancy between the leaderboard goal and the actual performance. While they warn that leaderboards or other types of gamification will not work unless there is support from users, they conclude that performance is likely to improve when leaderboards are used in conjunction with SMART goals.

Many are familiar with the term "SMART goals" to develop goals that are specific, measurable, attainable, realistic, and time-bound. Bowman, Mogensen, Marsland, and Lannin (2015) advance the SMART goals concept with the development of the SMART-Goal Evaluation Method (SMART-GEM), which combines the SMART goal model with the expert opinions of occupational therapists and tests the validity of the SMART-GEM (Bowman et al., 2015). Bowman and his team sought to improve and evaluate client and therapy outcomes, encourage client autonomy, and demonstrate

accountability to various professional standards. They acknowledge the variability of the definitions associated with goal setting. They define a goal as "the intended outcome of a specific set of interventions" and goal setting as "the formal process whereby a clinician or rehabilitation team, together with a client and/or their family negotiates a set of goals" (Bowman et al., 2015). The participants work with a team of supporters to attain their goals, and this is measured by establishing and evaluating goals that are SMART.

To determine the specificity of a goal, participants can ask who, what, where, and how questions when thinking of what they want to achieve (e.g., losing weight by going for walks three days per week). To measure their goal, participants can include metrics that can be measured (e.g., losing ten pounds). To assess whether the goal is attainable, participants can ask whether the goal is realistic based on their condition or environment (e.g., one might have more success with weight loss in warmer months when they enjoy being outside). The factors associated with a realistic or relevant goal may be similar to whether the goal is attainable, and according to Bowman and his team, "…because the client is defining their own goals, the relevancy component does not require further attention" (Bowman et al., 2015). The goal is time-bound when adequate time is provided for goal attainment (e.g., losing ten pounds within three months). The results of this study by Bowman and his team demonstrate sufficient validity and inter-rater reliability, but additional research is suggested to consider clinical utility.

While strengthening skills and working on personal development, people will set goals. Some users may want to take the next step in their career, some may want to get more exercise, and some may want to break a bad habit. As participants develop their SMART goals, they need to evaluate the various habit loops that may impede goal

attainment. In his book, *The Power of Habit* (Duhigg, 2012), and in other subsequent resources and publications, Charles Duhigg explains the habit loop. To change a habit, one must first decide that they want to change the habit. Next, they diagnose the three parts of the habit, including the cue, the reward, and the new routine: "First there is a *cue*, a trigger that tells your brain to go into automatic mode and which habit to use. Then there is the *routine*, which can be physical or mental or emotional. Finally, there is the *reward*, which helps your brain figure out if this particular loop is worth remembering for the future" (Duhigg, 2012).

Cues include time, location, other people, antecedent activities, or emotions. The cue that remains constant each time is the cue to address. The reward is determined by considering which craving the habit satisfies and testing that theory. If another reward (e.g., choosing tea or coffee over a sweet treat) eliminates the craving, then that's the true craving. However, if another reward does not satisfy the craving, one should keep experimenting until a new reward does satisfy the craving. Once the cue and reward are established, a new routine is implemented. When the cue occurs, a new activity is chosen that provides the same reward. Essentially, the formula is to substitute the habits into this equation: When [CUE], I will [ROUTINE] because it provides me with [REWARD] (Duhigg, 2012).

Similarly, to create a new habit such as getting more exercise, the process involves the same parts: the cue, the reward, and the new routine. The cue process is the same as with changing a habit: time, location, other people, antecedent activities, or emotions. In this instance, an enjoyable reward is chosen. If, after a few days, the reward is craved when the cue occurs and, after a few weeks, the intrinsic reward of the habit

(i.e., how it makes one feel) is better than the extrinsic reward (i.e., what one receives as a treat), a powerful new habit is developed. If not, a new reward should be selected until the intrinsic reward replaces the extrinsic reward. Then, as before, one progresses through the process: When [CUE], I will [ROUTINE] because it provides me with [REWARD].

In addition to setting SMART goals and evaluating habits that may prohibit goal achievement, a SWOT analysis is an additional tool. A SWOT analysis is used in the business sector, but in this example, it's a personal evaluation of strengths, weaknesses, opportunities, and threats. One creative version used in art therapy is the Don Jones Assessment, or DJA, which is successful because of the, "Expressive art, art activity, and guided imagery approaches [which] are unique and creative ways of supporting, strengthening, and identifying a person's coping skills and assets…Every assessment should also be active treatment" (Jones, 1999). In four different boxes, users first draw an image attending to or addressing an obstacle. Second, they draw interpersonal relationships. Third, they draw an image addressing the monsters within. Finally, they draw an image in what or whom they place their personal power.

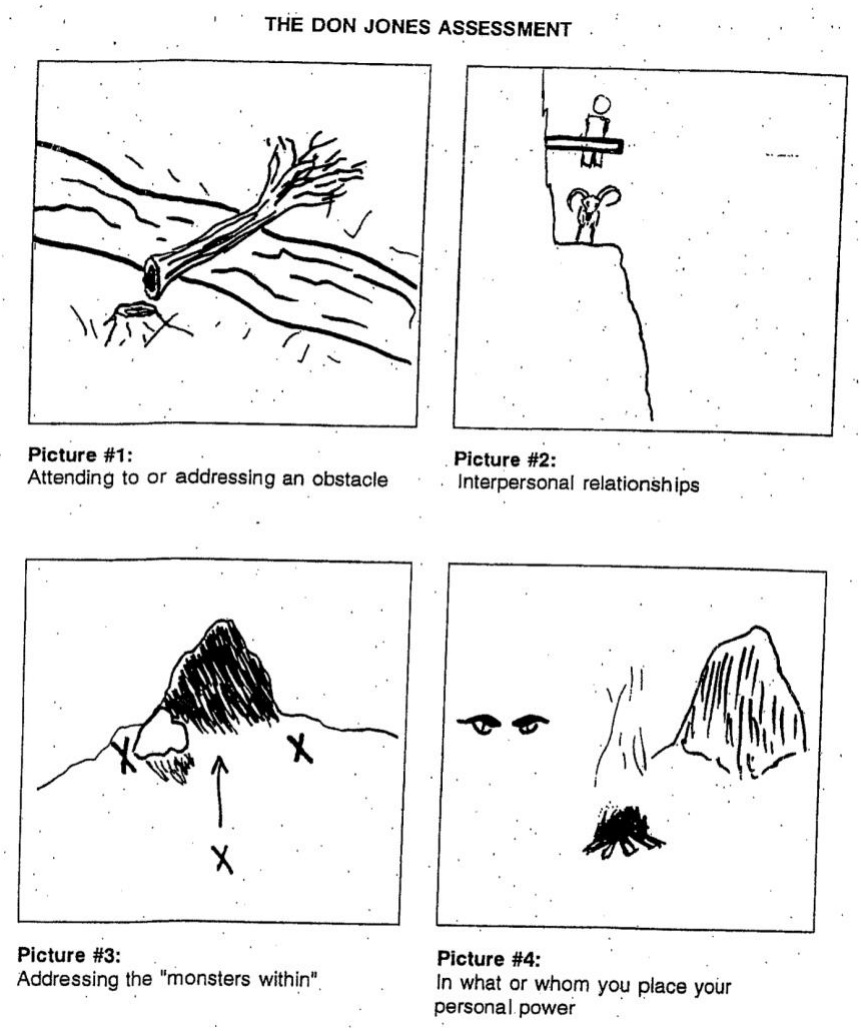

Figure 5: The Don Jones Assessment (Jones, 1999).

With these tools in mind, the lessons in this curriculum including the development of SMART goals, habit analyses, and SWOT analyses fulfill the new routine. By logging in regularly, sharing and updating goal progress with others, and developing a regular personal development habit, goal achievement and new habits are expected. Cues related to this might include “when I first wake up”, or “when I get home from work”, or “when I make a mistake”, or “when I’m feeling defeated”. That cue means it is time to log in,

that cue helps build a new routine, and goal attainment is the eventual reward. This is confirmed by the aforementioned work of Hamari et al. (2017).

This endeavor hopes to add additional empirical evidence to the quantitative, qualitative, and anecdotal results. For example, the 12-step program of Alcoholics Anonymous (A.A.) builds upon the research about why alcoholics continue to drink, but with even greater success, it examines the habits related to alcohol use. According to Duhigg (2019), it works: research revealed more than 10 million Americans who credited A.A. with their recovery. Returning back to Duhigg's formula, alcoholics react to a cue: "When [I'm stressed and need to relax], I will [order a beer at the bar] because it provides me with [feeling better after debriefing with friends]" (Duhigg, 2019). A.A. attendees substitute ordering a beer at the bar with enjoying a cup of coffee at a meeting; the camaraderie reward is the same in either equation. It's not always that easy, of course. Life stresses, such as the illness of a loved one or divorce, often caused alcoholics to relapse. Duhigg states that those who stay sober are those who learn to believe in something and believe that they can change. The group meeting community creates belief because it's both a place to unload stressors and to hear the success stories of others. The belief in a goal and the power to change is related to resilience, and the community is related to collaboration, both of which will be examined in the upcoming sections of the literature review.

Duhigg's thesis is about the importance of examining the habit loop to achieve goals. Other researchers who have cited Duhigg's habit model as a possible strategy find that definition too mechanical: "…a habit is impossible without setting up a mechanism of action, psychologically engrained, which operates spontaneously [and] automatically

whenever the cue is given" (Hiedanpää & Bromley, 2014). The core of a habit is then extended beyond this automatic process to include more variability and humanity: "The essence of habit is an acquired disposition to ways or modes of response, not to particular acts except as, under special conditions, these express a way of behaving. Habit means special sensitiveness or accessibility to certain classes of stimuli, standing predilections and aversions, rather than bare recurrence of specific acts. It means *will*" (Hiedanpää & Bromley, 2014). They conclude with their own unique definition: "…a habit is a reflection of both the human will in action and the specific environment in which that will has been shaped…habit is both a repetitive routine and an artistic potential" (Hiedanpää & Bromley, 2014). Therefore, goal setting and goal attainment is not as simple as just establishing new habits. Individuals must adapt to the environment, and the environment must also be adjusted. This consideration of goal setting and attainment addresses the complex question: if the real environment is unchanging, a virtual environment (e.g., virtual instruction platforms, software applications) may be the ideal setting in which to creatively and successfully set and attain goals.

Personal Development, Optimism, and Resilience

One application in particular, SuperBetter, is having successful outcomes with personal development in a virtual environment, specifically with optimism and resilience. According to Jane McGonigal (2012), a game designer and researcher, what started as a game to cure her concussion symptoms is now known for adding ten extra years to players' (real) lives. McGonigal's head injury led to a concussion that did not heal properly and resulted in symptoms of constant headaches, nausea, vertigo, memory loss,

and mental fog. The treatment included avoiding anything that triggered the symptoms. Eventually, suicidal ideation ensued, which is common with traumatic brain injuries. True to her roots, McGonigal chose to make her treatment plan into a game instead.

McGonigal and the SuperBetter team identified four quests of resilience in their studies that could be replicated in interviews with study participants. The first quest McGonigal identifies is physical resilience. By asking the participants to either stand up and take three steps or make their hands into fists and raise them over their heads for five seconds, their bodies can withstand more stress and heal faster. By not sitting still, which is broadly defined here, it impacts overall health. The second quest McGonigal identifies is mental resilience. The participants either snap their fingers exactly 50 times or count backwards from 100 by seven, which builds mental resilience, discipline, determination, focus, and willpower. Each is strengthened with more exercise. The third quest McGonigal identifies is emotional resilience. The participants either find a window and look in or out of it or do a quick image search for their favorite baby animal. More powerful, positive emotions like curiosity or love experienced instead of negative emotions (3:1 ratio) yields greater emotional resilience. The final quest McGonigal identities is social resilience. The participants either shake someone's hand for six seconds or send someone a quick thank you by text, email, or on social media. Gratitude and touch, even for a few seconds, dramatically increases the trust hormone in the bloodstream.

Researchers found that SuperBetter, which incorporates social game mechanics and a heroic narrative, promotes resilience, optimism, and health management particularly among teenagers with ongoing concussion symptoms (Worthen-Chaudhari,

McGonigal, et al., 2017). In an outpatient concussion clinic, adolescent participants had concussion symptoms three weeks or more after their initial injury. All participants received the usual standard of care for concussions, but the experimental group used SuperBetter as a gamified symptoms journal. Symptoms like headaches, dizziness, and confusion were known as bad guys, and medical recommendations like sleep, sunglasses, and academic concussion management plans were known as power-ups. Participants could invite allies, including the research coordinator, friends, and/or family to join their personal network. These allies could review the participant's activity and send resilience points, achievements, comments, and personalized emails in response. Logged activity included actions such as battling a bad guy, reporting the battle severity, the completion of a power-up, liking an ally's comment, or posting a status update.

Worthen-Chaudhari and her team concluded that SuperBetter improved participants' symptoms and optimism compared to those who received the standard of care without playing SuperBetter. Mobile apps like SuperBetter "…that employ social game mechanics, and that reframe health recommendations as steps within a patient's personal, heroic narrative, may promote health management among teenagers with unresolved concussion symptoms" (Worthen-Chaudhari, McGonigal, et al., 2017). With optimism specifically, the researchers suspect there are several explanations for the app's influence. First, the app may remind participants of concussion management recommendations and encourage compliance with medical recommendations in between visits to the clinic, especially when including the research coordinator as an ally. By reframing the concussion recovery from a heroic narrative, optimism is increased and learned helplessness is decreased. Through medical compliance, enhanced social support,

positive thinking, and other constructive strategies confirmed through this study and other qualitative feedback, the SuperBetter app is promising, but the researchers encourage further studies to address limitations of small sample sizes, a single testing site, a lack of blinding or random assignments, and the implications for populations not represented here, such as youth with ADHD or adults with concussions.

Other researchers confirmed that self-help applications may play an important role in treating depression (Roepke, et al., 2015). After being diagnosed with significant depression symptoms according to the Center for Epidemiological Studies Depression questionnaire (CES-D), participants were randomly assigned to one of three interventions. The first intervention was a version of SuperBetter using cognitive-behavioral therapy (CBT) and positive psychotherapy (PPT) strategies to target depression. The second intervention was a general SuperBetter version focused on self-esteem and acceptance. The third intervention was a waiting list control group. Those not in the control group used SuperBetter for 10 minutes per day over 30 days. All group participants completed measures related to psychological distress and well-being every two weeks. Participants using SuperBetter, whether the general version or combined with CBT and PPT reduced their CES-D scores, and this suggests that self-help delivered by a smartphone or the internet may play an important role in the treatment of depression.

According to McGonigal (2012), people with regular boosts of these four types of resilience—physical, mental, emotional, and social—will live ten years longer (and gain an additional seven minutes per day) than everyone else. SuperBetter users decreased symptoms associated with concussions, including depression, and increased optimism. In

this study, if the curriculum can help users increase their various strengths and resilience, are they more likely to achieve their goals?

To answer that question, it's also important to define resilience. Aburn et al. (2016) compiled a systematic review of how resilience is defined in empirical research, and they conclude there are at least five key themes of resilience. First, resilience can mean the process of overcoming adversity or rising above challenges experienced during crisis or trauma. This resilience can relate to interactions with the environment itself as well as with others inhabiting that environment. In this definition, resilience and "rising above" adversity are synonymous with words like "flourishing, thriving, and succeeding", and resilient individuals function at a higher level than before the crisis or trauma (Aburn et al., 2016). Second, resilience can relate to the process of successful adaptation and adjustment during adversity or trauma. Third, resilience can be considered "ordinary magic" and doesn't have to be "…anything extraordinary but a phenomenon grounded in ordinary things, for example, family, love, and close friendships" (Aburn et al., 2016). Fourth, resilience is "…a buffering factor that protects individuals from psychotic disorders" and is a proxy for good mental health (Aburn et al., 2016). Finally, resilience is derived from the Latin *resiliere,* which means to jump back, so resilience is the ability to bounce back or recover from trauma or difficulty.

Another mobile application known as Provider Resilience (PR) sought to reduce provider burnout. According to this study, "Burnout is commonly defined as a condition resulting from difficult work conditions, which includes emotional exhaustion, cynicism, and reduced professional efficacy" (Wood et al., 2016). In addition to burnout, mental health professionals encounter traumas that increase their risk of compassion fatigue,

which "…is characterized by a gradual lessening of compassion over time, resulting from a combination of burnout and secondary traumatic stress related to vicarious traumatization from repeated exposure to traumatic material" (Wood et al., 2016). Essentially, mental health providers can certainly benefit from strengthened resilience. The self-selected participants appeared to be psychologically healthy with low levels of burnout and average levels of both compassion satisfaction and compassion fatigue. The researchers consider that those who volunteered to participate were feeling less burnout and had the necessary energy to participate in a research study. They acknowledge that additional studies with larger sample sizes and a control group would be beneficial. Overall, the PR app succeeded in providing convenient access to reach overburdened providers, which suggests an effective reduction in burnout and compassion fatigue rates. This convenient access is one primary benefit of all virtual applications, but collaboration plays a key role in addition to goal setting and resilience training. This consideration of resilience addresses the complex question: if a virtual environment can be used to strengthen resilience, people should be more likely to attain their goals.

Collaboration, Community, and Support

This study intends to utilize a social networking component to build a community of support, similar to SuperBetter's allies. Users will set goals and take steps toward achieving goals, and these will be shared publicly with their networks. Their supporters can give praise, encouragement, and share resources to redirect and guide as appropriate. These things can sometimes happen in traditional social networking sites. However, the personal development apps explored here have the extra advantage beyond traditional

social networking sites in that they are specifically designed to address personal development skills like optimism, resilience, compassion, and so on.

One study examined whole-family resilience promotion interventions related to traumatic brain injuries (TBIs). Godwin and her team seem to agree with the SuperBetter researchers on concussions and other TBIs: “A resilient response to brain injury requires a comprehensive and targeted development of resilience skills” (Godwin et al., 2015). The authors highlight the identification of TBI as a “family injury” because the “emotional and psychological toll of injury on a TBI survivor can be secondary in impact to the deleterious effects on family members and family relationships” (Godwin et al., 2015). Spouses tend to be the primary caregiver and are particularly affected by depression, role confusion, imbalanced responsibilities, and isolation from other support systems. The researchers cite the American Psychological Association: “…although everyone is able to become more resilient, individuals with cognitive, emotional, or psychological challenges need multifaceted intervention models that take into consideration the specific needs of the population” (Godwin et al., 2015). Because of this, they propose a curriculum-based intervention known as the Resilience and Adjustment Intervention (RAI) for individuals with a TBI and the Therapeutic Couples Intervention (TCI) for couples in which one individual has a TBI. They find both to be successful in increasing the resilience of individuals and their partners, but a lack of access to these resources prevents widespread adoption. Many service providers are not adequately trained in these methods, especially those that extend beyond individuals with TBI to their caregivers.

O'Sullivan et al. (2014) note the importance of resilience in community development, disaster preparations, environmental sustainability, and business stability. The EnRiCH Community Intervention, named for Enhancing Resilience and Capacity for Health, focused on disaster management for high-risk populations and found that a structured interview matrix (SIM) was an effective way to enhance connectedness, common ground, collaborative action, and service awareness in communities. The SIM has three steps: individualized interviews, small group deliberation, and a facilitated, full-group discussion. The SIM tracked the community's assets, encouraged collaborative practice, and enhanced community resilience.

Beyond the family and community, virtual communities can develop in the virtual environment, perhaps especially when individuals share a similar goal. There are implications for how this transcends to community resilience. Individuals may build resilience working on small, personal goals, but if individuals in a virtual or real environment build resilience together, that increases the stability, infrastructure, social capital, knowledge, agency, leadership, resource access, participation, values, and governance of the community overall. According to Matarrita-Cascante et al. (2017), "Social resilience places emphasis on 'understanding the response of human systems to change'". Community resilience is noted as a subfield of social resilience and relevant to community development, or the "willingness of communities to take responsibility and control for their development through the development of responsive strategies toward change" (Matarrita-Cascante et al., 2017). In this context, community resilience is not a state without stress, but instead, it is the ability to respond and adapt to the shortcomings of the community; it can be both a reactive and preemptive response. This is particularly

relevant in rural communities that are dependent on resources. Resources can include natural, built, human, cultural, social, political, and financial resources, while others refer to them as social, economic, natural, and cultural capital. These strengths enable the collective community to face challenges and lead to greater resilience.

Vogus and Rerup (2018) reflect on the superior performance of collaborative organizations from a similar, bottom-up perspective: “history is not produced by dramatic actions and postures of leaders, but by complex combinations of large numbers of small actions by unimportant people”. This speaks to the impact of individuals working together and establishing a resilient community, but the authors point out three significant gaps in this method. First, strategy is separated from daily operations. As a result, strategic decisions and superior performance stem from the spontaneous adaptations to situations without an appropriate evaluation of opportunities and threats. Second, leadership tends to focus on top-down strategies and ignores bottom-up perspectives. Third, leadership strategies focus on behavior and interpersonal communication rather than linking specific behaviors to strategic outcomes. It is challenging for an organization to perform well and achieve goals when key information is missing from the dialogue. When all members of a community or organization work together toward common goals while strengthening resilience, everyone wins. This consideration of goal collaboration addresses the complex question: if the virtual environment can be used to strengthen resilience and build collaborative support systems, people should be more likely to attain their goals.

Integrated Summary

Research confirms that SMART goals are more likely to be achieved, especially if resilience is also strengthened and if a collaborative support system exists. Virtual environments, including software applications, are putting this into practice and users have positive benefits ranging from greater resilience and optimism to lower depressive symptoms and burnout. These initial successes have greater implications for various populations, including students in transition and other underrepresented populations.

Implicit motivation is not sufficient and additional reinforcements are required, such as points, leaderboards, and other gamifications. Goals can be smarter, or more specific, measurable, achievable, realistic, and time-bound. Habits can be analyzed while keeping in mind an empathetic perspective: humans are complicated and deserve patience in their development. Goals become attainable when collaborative support systems are available. It is possible to increase resilience by playing games, and it is possible to attain goals while strengthening resilience.

Connor-Davidson Resilience Scale

Although there is a need for more research on the concept of resilience as it relates to college students more generally, some research studies that have been conducted on resilience and the use of the Connor Davidson Resilience Scale (CD-RISC) have studied postsecondary students with disabilities, first and second generation college students, and third year African American students. There is also a need for more research on resilience, and more specifically, how it impacts college students enrolled in leadership courses with the intention of strengthening resilience.

Hartley (2011) examined the relationships between resilience, mental health, and academic persistence in undergraduate college students by utilizing sequential regression analyses to examine "whether the inter- and intrapersonal resilience and mental health measures contributed to explaining variance in the response variables of university cumulative grade point average (GPA) and university sense of belonging". The participants were a sample of 605 undergraduate students, recruited from two midwestern universities during the 2007-2008 academic school year. The study found that intrapersonal resilience factors contributed to explaining variance in cumulative GPA, as well as aptitude and achievement. Additionally, there was a strong statistical correlation between the inter- and intrapersonal resilience factors and mental health. The study concludes that "the demands in college are significant and there is a need for more research on the concept of resilience as it relates to college health and academic persistence." (Hartley, 2011).

A study conducted in Australia examined the internal structure of CD-RISC scores in a sample of postsecondary students with disabilities. There were 274 participants, all students which were enrolled in a regional university in South East Queensland, Australia. All participants were registered with the University's Disability Services Division, indicating the presence of at least one disabling condition. The mean age of participants was 38.788 (SD = 12.696), and 64.6% (n = 177) of the sample was female. One student (0.4%) did not report their age or gender (Perera & Ganguly, 2018). The findings indicate that, although the research was conducted in Australia on students with disabilities, it "makes important contributions to not only understanding resilience in samples of people with disabilities specifically but also the measurement and theory of

resilience more generally" (Perera & Ganguly, 2018, p. 200). Evidence from the tests of the relations of the resilience dimensions with career optimism also supported the validity of CD-RISC responses. Additionally, "associations of the resilience dimensions with well-being were also obtained" (Perera & Ganguly, 2018, p. 202). Citing additional scholars, Perera & Ganguly (2018) note that "this finding is consistent with the theoretical view that resilience serves as a protective factor in the stress–distress relationship, though not a direct test of this buffering hypothesis. Furthermore, the result replicates previous data showing positive associations of resilience factors with well-being" (Perera & Ganguly, 2018, p. 202).

Clauss-Ehlers & Wibrowski (2007) conducted a study intended to better understand how resilience, social support, and ethnic identity facilitate the transition from high school to college among first- and second-generation college students enrolled in a summer Educational Opportunity Fund program (EOF). There were 95 participants (63 women and 32 men), 27 African Americans, 18 White Americans, 16 Asian Americans, and 34 Latinos. The mean age of participants was 18 years. The participants were surveyed two times throughout the study: time 1 was at the beginning of the 6-week summer academic institute program, and time 2 was at the completion of the program. The CD-RISC results demonstrated a mean resilience score of 73.11 for time 1 and an increased mean score of 76.24 for time 2. The results indicate "...the summer EOF academic institute was associated with significant increases in resilience and social support from program staff and peers" (Clauss-Ehlers & Wibrowski, 2007, p. 581) and that "these findings suggest that students were resilient prior to entrance into the program

and the intervention helped cultivate that quality between Time 1 and Time 2 of the study's administration" (Clauss-Ehlers & Wibrowski, 2007, p. 582).

Scott et al. (2018) conducted a study to examine resilience from a holistic perspective within an African American sample of college students at a Historically Black College or University (HBCU). Approximately 900 students in the south were recruited to participate in this study via email, and 218 students ended up being the sample set, or 153 females (70%) and 65 males (30%). 95% of the participants were between 18-21 and 5% were over 21. This study was intended to "...better understand how resilience manifests with this population by analyzing the internal consistency and underlying component structure of the CD-RISC," (Scott et al., 2018, p. 76-77). The sample exhibited an average resilience score of 81.44, despite being considered an "academically at-risk population" (Scott et al., 2018, p. 80). Results of this study suggested that the CD-RISC demonstrated "good internal consistency" (Scott et al., 2018, p. 80) and was "assessing resilience in a manner consistent with the instrument's development, when employed with an upper-level undergraduate African American HBCU sample" (Scott et al., 2018, p. 80).

The Connor Davidson scale has been used in studies ranging from PTSD patients and extending to the classroom: "The CD-RISC literature continues to grow: the scale has now been translated into many different languages and studied in a variety of populations, including large community samples, survivors of various traumas, Alzheimer's caregivers, adolescents, elders, patients in treatment for PTSD, members of different ethnic groups and cultures, and selected professional or athletic groups (e.g.

university students, nurses, social workers, physicians, military medical personnel, medical students, missionaries, cricketers)" (Davidson, 2019).

These studies examined resilience among different populations, but they all focused on college student's resilience in an academic environment. Although the studies above demonstrate important findings related to the reliability and validity of the Connor-Davidson Resilience Scale, missing from the literature is the impact that resilience has on college students enrolled in a leadership course as measured using the CD-RISC scale. This is important because "there is considerable evidence that dimensions of resilience are associated with higher well-being" (Burns, et al., 2011).

Chapter 3: Methodology

Research Design

The purpose of this longitudinal survey research is to examine the impact of a regular personal development practice on resilience when delivered via virtual instruction among young adults enrolled at a university in the Southern Tier of New York while controlling for age, gender, race, income, and majors. The independent variable of participating in the regular personal development practice was defined as participating in the curriculum with integrity, logging in regularly, sharing posts regularly, updating goal progression regularly, and completing other projects as assigned. The dependent variable of strengthened resilience was defined as participating in the majority of the lessons and taking both assessments, the demographic survey and the Connor-Davidson Resilience Scale. The mediating variables were defined as age, gender, race, income, majors, and minors to isolate young adults and determine trends among these demographics.

This longitudinal survey research intended to answer the primary research question: What is the impact of a regular personal development practice on resilience when delivered via virtual instruction among young adults enrolled at a university in the Southern Tier of New York?

Sample

Participants from this region were 18-23 years old and included those who identify as male, female, or non-binary. All socioeconomic statuses were included and were examined in later supplemental analyses. Participation in the study was voluntary. Those who received credit for a specific undergraduate education course, as outlined in

the appendices, were excluded from participation. Participants who met these criteria and enrolled in the course during Winter 2020 were Group 1, or the experimental group. Participants who met these criteria and who did not enroll in the course were Group 2, or the control group. An attempt was made to match Group 1 and Group 2 based on demographics as closely as possible.

An email (see Appendix D) was sent to the students enrolled at a university in the Southern Tier of New York inviting students to participate and included the active informed consent form information. This email was sent via a departmental listserv.

Instrumentation

Two instruments were used in this study: The Connor-Davidson Resilience Scale (see Appendix A), given twice, and a demographic survey designed by the researcher (see Appendix B). The curriculum (see Appendix E) served as the intervention between the baseline resilience score and the final resilience score. The Connor-Davidson Resilience Scale (CD-RISC, 2019) is a 25-item scale developed by two medical doctors treating men and women with post-traumatic stress disorder (PTSD). According to Windle, Bennett, and Noyes (2011), the Connor-Davidson "received the best psychometric ratings", and the researchers state the instrument has shown "extensive validation" and is "useful in different ways". This instrument included 25 statements, and for each item, participants checked a box that best indicates their agreement and application over the past month; boxes included not true at all (0), rarely true (1), sometimes true (2), often true (3), and true nearly all the time (4). The scores were added up for each column, and those scores were added together for a total CD-RISC score.

There were no reverse-scored statements included. The minimum possible score on this assessment was 0 and the maximum possible score was 100; the higher the score, the more resilient one was considered.

According to the manual (CD-RISC, 2019), numerous studies demonstrated the reliability and validity of this instrument. The original development of this instrument was with veterans experiencing PTSD. One study, among dozens, stated that "…among veterans of Iraq or Afghanistan, those with higher resilience were less likely to develop PTSD…and of those who did have PTSD (OR = 0.11, 95% CI = 0.06-0.21), resiliency was uniquely associated with decreased PTSD severity after accounting for demographic variables and combat severity ($\beta = -0.37$, $p<0.001$)". Another study, among dozens, showed, "acceptable test-retest reliability for the full CD-RISC" ($r = 0.87$; CD-RISC, 2019). In terms of relevance for this study, there have been multiple studies related to college students as well. One study found that "the impact of resilience on self-esteem is due to its effect on regulating affective experience", which indicates connections to resilience theory and trauma-informed practice (CD-RISC, 2019).

The intervention used in this study was a university leadership curriculum. This course had been taught by the researcher to undergraduate and graduate students for nine semesters at this point in time. The curriculum covered a range of topics across personal and professional development including confidence, resilience, self-actualization and care, career success, and leadership. While the course was typically taught during a 15-week fall or spring semester, the content was condensed into five weeks for the winter session. The first week included introductions, the baseline assessments of demographics and CD-RISC, and a confidence unit. The second week featured a winter break due to the

holidays, so some reading was assigned in addition to a self-care unit. The third week included a career success unit. The fourth week included a unit about leadership styles. The fifth week included a final demonstration of learning where students developed their personal leadership philosophies, and it was at this time that the CD-RISC was administered for the second time.

The demographic survey asked participants to select their gender (female, male, non-binary, or prefer not to disclose), their age, and their race (American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, or White). Participants could select more than one race option if applicable. Participants were asked their ethnicity (Hispanic/Latinx/Spanish Origin, or Not Hispanic/Latinx/Spanish Origin). Participants were asked their income level (under $20,000, $20,001-$30,000, $30,001-$40,000, $40,001-$50,000, $50,001-$60,000, $60,001-$70,000, or above $70,000). Participants were asked about their academic major(s) and minor(s). They could enter more than one option, and they could enter "N/A" if they do not have a minor.

Procedures

Participants in the experimental group received the intervention of a leadership curriculum in between taking the baseline resilience scale and the final resilience scale. The servant leadership perspective that was included in the curriculum sought to bring out the best in and serve others while strengthening resilience. It promoted access to evidence-based information, resources, and strategies so that anyone could succeed and achieve their goals. The intersection of education, business, and social services—which

include topics of goal attainment, resilience, and collaboration in multiple ways—suggested that there is much work to be done in serving these populations.

The relevant components of the course syllabus for Winter 2020 and Spring 2020 are as follows. The curriculum introduced students to the leadership roles and communication skills necessary to succeed in education or other careers. Discussion topics included defining what it means to be a leader, how to educate in all fields, how to build relationships and become a positive influence, how to work individually and collaboratively, and more. Students practiced networking, created modern résumés, established confidence and positive mental attitudes, eliminated “excusitis”, prioritized and managed time, implemented public speaking skills, interpreted and taught scholarly leadership articles, researched and modeled leadership roles within education and in other related settings, and designed personal leadership philosophies. Students' needs and interests were also factored into the curriculum and can vary by semester. This curriculum was meant to kick-start the professional career as a leader and modern educator. Students read carefully, asked thoughtful questions, engaged in class discussions, and wrote critical responses while they developed themselves personally and professionally along the way.

In terms of course objectives, students practiced networking and introduced themselves (name, year, major/minors, personal goals, and professional goals) to their classmates, completed a networking assignment, and participated in class discussions. Students created a modern résumé and cover letter to apply to their dream job(s). Students established confidence and positive lenses; they created a personal mantra, power phrase, and presented a “fight song”. Students eliminated "excusitis"; they

presented on two inspirational leaders from their lives (one they knew and one they did not know personally). Students prioritized and managed their time; they completed a time management grid or an alternative and taught their classmates about their favorite management system. Students implemented public speaking skills, provided and accepted feedback, and demonstrated proficiency in oral presentations by participating in a public speaking workshop, improv scenarios, presentation assignments, and weekly discussions. Students interpreted and taught scholarly articles about leadership, related those articles to their field of interest, and created an infographic to share with classmates. Students engaged in a book jigsaw activity and taught each other about key takeaways from selected non-fiction development texts. Students researched and taught a leadership role in education or their chosen profession and created a lesson plan. Lastly, to demonstrate what they had learned during the semester, students designed a leadership model based on their own growth as a leader and their personal leadership philosophy and taught it to the class. Each assignment was assessed using a checklist and/or rubric.

Pilot Study: Fall 2019

As plans for this project came together, the Fall 2019 semester and the associated syllabus were already underway. Existing baseline assessments already included in the course were adapted and expanded with this project in mind. Because there were no major problems with this instrument or the methodology, moving forward with the formal study from there seemed appropriate.

For example, existing assessments asked students to indicate their agreement on a 5-point Likert scale to the following twelve statements, with 1 indicating that they

strongly disagree and 5 indicating that they strongly agree. The statements included: I am resilient; I know how to achieve my goals; I manage my time well; I socialize and network with others successfully; I will secure my dream job; I am a positive person; I do not make excuses; I am comfortable when public speaking; I can interpret research and apply it to my own life; I am clear about my personal leadership philosophy; I believe having money is a good thing; I know my strengths and weaknesses. These statements aligned to the course objectives and assignments, and they allude to general leadership skills, including resilience.

In Fall 2019, 27 students participated in the pilot study. Their ages ranged from 18-23, and the sample included 16 females and 11 males. One student was eliminated because she withdrew from the course after completing the baseline assessment but did not complete the final assessment for comparison. All students were either enrolled in the undergraduate Education Minor or in Education/Student Affairs graduate programs, with undergraduate majors including Business Administration (4), Economics (2), English (3), Geography (1), History (4), Human Development (5), Japanese Studies (1), Mathematics (1), Music (1), Political Science (2), Psychology (3).

For the statement, “I am resilient”, the mean baseline score was 4.04, and the mean final score was 4.30. For the statement, “I know how to achieve my goals”, the mean baseline score was 3.85, and the mean final score was 4.52. For the statement, “I manage my time well”, the mean baseline score was 3.78, and the mean final score was 4.07. For the statement, “I socialize and network with others successfully”, the mean baseline score was 4.07, and the mean final score was 4.22. For the statement, “I will secure my dream job”, the mean baseline score was 3.85, and the mean final score was

4.44. For the statement, “I am a positive person”, the mean baseline score was 3.89, and the mean final score was 4.30. For the statement, “I do not make excuses”, the mean baseline score was 3.00, and the mean final score was 3.74. For the statement, “I am comfortable when public speaking”, the mean baseline score was 3.22, and the mean final score was 4.19. For the statement, “I can interpret research and apply it to my own life”, the mean baseline score was 3.48, and the mean final score was 4.56. For the statement, “I am clear about my personal leadership philosophy”, the mean baseline score was 3.70, and the mean final score was 4.48. For the statement, “I believe having money is a good thing”, the mean baseline score was 4.07, and the mean final score was 3.96. For the statement, “I know my strengths and weaknesses”, the mean baseline score was 4.15, and the mean final score was 4.63.

These assessments were useful as an instructor, and they generally demonstrated a positive change. The only question’s score which went down slightly (-0.11 points) was, “I believe having money is a good thing,” which could reflect class discussion on pursuing a dream job, defining passions, studies on the ideal income and where happiness levels taper off (i.e., $75,000), and using money as a tool to help others rather than to be amassed. In addition, all students experienced an increase between their baseline and final scores of an average of 0.52 except for one student (their baseline was 4.25, and their final score was 4.00, indicating a decrease of 0.25).

However, reliability and validity has not yet been established for these assessments. A reliable and valid instrument that would measure resilience and could be used to draw connections between resilience and leadership was desired. The Connor-

Davidson Resilience Scale (CD-RISC) turned out to be that reliable, valid, accessible, and effective tool.

Experimental Study: Winter 2020

IRB/ERC approval was received at Marywood University with support from the university in the Southern Tier of New York at which the leadership course is taught. Students enrolled in the leadership course during the Winter 2020 (December 16, 2019-January 15, 2020) semester completed the Connor-Davidson Resilience Scale (CD-RISC) and the demographic survey on the first day of the online course. The CD-RISC was available on REDCap, and it was emailed directly to students. The scale stated the 25 aforementioned statements to which students indicate the level that they agree: not true at all (0), rarely true (1), sometimes true (2), often true (3), and true nearly all the time (4). To maintain the integrity of the original instrument, it asked participants to score themselves, but they were scored again by the researcher after adding up what levels they have indicated. The demographic survey was also available on REDCap. The questions include their name, gender, age, race, ethnicity, annual income level, majors, and minors (if applicable). The students may enter N/A if the minor does not apply to them. This information will be used for later analysis. After the curriculum is taught throughout the five weeks, students will take the Resilience Questionnaire (CD-RISC) a second time after five weeks and at the conclusion of the semester.

Data Analysis

Subproblem One, what is the baseline resilience score among young adults enrolled at a university in the Southern Tier of New York who participate in this virtual instruction, was analyzed using a frequency distribution and other descriptive statistics.

Subproblem Two, what is the final resilience score among young adults enrolled at a university in the Southern Tier of New York who participate in this virtual instruction, was analyzed using a frequency distribution and other descriptive statistics.

Subproblem Three, what is the baseline resilience score among young adults enrolled at a university in the Southern Tier of New York who do not participate in this virtual instruction, was analyzed using a frequency distribution and other descriptive statistics.

Subproblem Four, what is the final resilience score among young adults enrolled at a university in the Southern Tier of New York who do not participate in this virtual instruction, was analyzed using a frequency distribution and other descriptive statistics.

Subproblem Five, what are the differences between the final resilience scores of those who do participate in this virtual instruction and those who do not after controlling for baseline scores, was analyzed by an ANCOVA.

Chapter 4: Results

Introduction

In the Winter 2020 Experimental Group, 22 undergraduate students (14 females, 8 males) ranging in age from 18-23 were invited to participate in the research study. There were 23 responses on the baseline resilience scale. There were 21 responses on the final resilience scale. Data was cleaned and missing cases were removed; a total of 10 records (6 from the baseline and 4 from the final) were removed due to unmatched unique IDs. In lieu of names or other identifiers, participants were asked to input a unique ID consisting of the two digits of the participant's birth month plus the first three letters of their mother's maiden name (e.g., someone born in May whose mother's maiden name is Jones would be 05Jon). This ID was used to compare responses across all three surveys, but it was not used to identify individuals. However, some participants did not enter the same unique ID for all surveys so they could not be matched. Therefore, a total of 17 participants remained in the experimental group.

In the Spring 2020 Control Group, 22 undergraduate students (18 females, 4 males) ranging in age from 18-23 were invited to participate in the research study. There were 12 responses on the baseline resilience scale. There were 5 responses on the final resilience scale. A total of 11 records (9 from the baseline and 2 from the final) were removed due to unmatched unique IDs and an error in the REDCap survey prompted participants to take the baseline survey twice at Time 1. The second record at Time 1 was not used to maintain consistency across initial results. Therefore, only three viable records remained in the control group.

Demographics

Of the 17 participants in the experimental group, the majority were female (n=12, 70.59%) ranging from 19-21 years old with a mode of 20 years (n=9, 52.94%). The majority were white (n=12, 70.59%) and not Hispanic, Latinx, or Spanish origin (n=14, 82.35%). Most participants indicated an annual income level of below $20,000 (n=10, 52.82%) though there were questions emailed to the researcher about whether that question was indicative of their own personal income or that of their family. Future iterations may need to clarify that this was meant to represent their own personal income and not their family's income. The primary majors included Economics (n=4, 23.53%, Biology (n=3, 17.65%), Business Administration (n=3, 17.65%), and Psychology (n=2, 11.76%). Most participants indicated that they did not have a minor (n=8, 47.06%) or were Education minors (n=7, 41.18%).

Of the three participants in the control group, the majority were female (n=2, 66.67%) ranging from 19-21 years old. All were white (n=3, 100.00%) and not Hispanic, Latinx, or Spanish origin (n=3, 100.00%). The majority of participants indicated an annual income level of below $20,000 (n=2, 66.67%). Majors included Human Development, English, and Environmental Science. All were Education Minors (n=3, 100.00%). More information is presented in Table 1: Demographics.

Table 1: Demographics

	Winter 2020 Experimental Group, n=17		Spring 2020 Control Group, n=3	
	n	%	*n*	%
Gender				
Female	12	70.59%	2	66.67%
Male	5	29.41%	1	33.33%
Age				
19	1	5.88%	1	33.33%
20	9	52.94%	1	33.33%
21	7	41.18%	1	33.33%
Race				
Asian	3	17.65%	0	0.00%
White	12	70.59%	3	100.00%
Other: “Mixed”	1	5.88%	0	0.00%
Other: “White & Middle Eastern”	1	5.88%	0	0.00%
Ethnicity				
Hispanic/Latinx/Spanish Origin	3	17.65%	3	100.00%
Not Hispanic/Latinx/Spanish Origin	14	82.35%	0	0.00%
Annual Income Level				
Below $20,000	10	58.82%	2	66.67%
$21,000-$30,000	1	5.88%	0	0.00%
$51,000-$60,000	1	5.88%	0	0.00%
$61,000-$70,000	0	0.00%	1	33.33%
Above $70,001	5	29.41%	0	0.00%
Major(s)				
Biology	3	17.65%	0	0.00%
Business Administration	3	17.65%	0	0.00%
Economics	4	23.53%	0	0.00%
English	1	5.88%	1	33.33%
English + Italian	1	5.88%	0	0.00%
Environmental Science	0	0.00%	1	33.33%
Graphic Design	1	5.88%	0	0.00%
Graphic Design + Spanish	1	5.88%	0	0.00%
Human Development	0	0.00%	1	33.33%
Philosophy, Politics, and Law	1	5.88%	0	0.00%
Psychology	2	11.76%	0	0.00%
Minor(s)				
Education	7	41.18%	3	100.00%
Finance	1	5.88%	0	0.00%
Marketing	1	5.88%	0	0.00%
Not Applicable	8	47.06%	0	0.00%

Note: Responses with $n = 0$ are not included unless used for comparison purposes.

Subproblem One, what is the baseline resilience score among young adults enrolled at a university in the Southern Tier of New York who participate in this virtual instruction, was analyzed using a frequency distribution and other descriptive statistics. The mean baseline score per person was 71.29 (*SD*±9.95) while the median score was 66 (min=60, max=89). The mean score per question was 2.85 (*SD*±0.372) while the median was 2.82 (min=2.18, max=3.71; see Table 2a for more details).

Across the 25 questions for the experimental group, 69.65% of participants responded with 3 or 4 (n=296), 24.24% of participants responded with 2 (n=103), and 6.12% of participants responded with 0 or 1 (n=26; see Table 3a for more details). The top three questions scored at 3-4 were Question 19 (I am able to handle unpleasant or painful feelings like sadness, fear, and anger; n=17), Question 25 (I take pride in my achievements; n=16), and Question 2 (I have at least one close and secure relationship that helps me when I am stressed; n=16). The top three questions scored at 2 were Question 14 (Under pressure, I stay focused and think clearly; n=8), Question 3 (When there are no clear solutions to my problems, sometimes fate or God can help; n=8), and Question 6 (I try to see the humorous side of things when I am faced with problems; n=7). The top three questions scored at 0-1 were Question 16 (I am not easily discouraged by failure; n=4), Question 18 (I can make unpopular or difficult decisions that affect other people, if it is necessary; n=4), and Question 3 (When there are no clear solutions to my problems, sometimes fate or God can help; n=3).

Subproblem Two, what is the final resilience score among young adults enrolled at a university in the Southern Tier of New York who participate in this virtual instruction, was analyzed using a frequency distribution and other descriptive statistics.

The mean final resilience score per person was 74.29 (*SD*±12.28) while the median was 71 (min=56, max=96). The mean score per question was 2.96 (*SD*±0.376) with a median score of 3.06 (min=2.24, max=3.71; see Table 2 for more details).

Across the 25 questions for the experimental group, 70.12% of participants responded with 3 or 4 (n=298), 24.71% of participants responded with a 2 (n=105), and 5.18% of participants responded with 0 or 1 (n=22; see Table 3b for more details). The top three questions scored at 3-4 were Question 1 (I am able to adapt when changes occur; n=17), Question 2 (I have at least one close and secure relationship that helps me when I am stressed; n=17), and Question 13 (During times of stress/crisis, I know where to turn for help; n=16). The top three questions scored at 2 were Question 19 (I am able to handle unpleasant or painful feelings like sadness, fear, and anger; n=8), Question 3 (When there are no clear solutions to my problems, sometimes fate or God can help; n=8), and Question 20 (In dealing with life's problems, sometimes you have to act on a hunch without knowing why; n=7). The top three questions scored at 0-1 were Question 18 (I can make unpopular or difficult decisions that affect other people, if it is necessary; n=4), Question 3 (When there are no clear solutions to my problems, sometimes fate or God can help; n=3), and Question 19 (I am able to handle unpleasant or painful feelings like sadness, fear, and anger; n=2).

Table 2a. Connor-Davidson Resilience Scale	Experimental, n=17		
	Time 1	Time 2	Change
Q1. I am able to adapt when changes occur.	3.00	3.24	0.24
Q2. I have at least one close and secure relationship that helps me when I am stressed.	3.59	3.71	0.12
Q3. When there are no clear solutions to my problems, sometimes fate or God can help.	2.18	2.24	0.06
Q4. I can deal with whatever comes my way.	2.71	3.06	0.35
Q5. Past successes give me confidence in dealing with new challenges and difficulties.	3.18	3.47	0.29
Q6. I try to see the humorous side of things when I am faced with problems.	2.71	2.88	0.18
Q7. Having to cope with stress can make me stronger.	2.82	3.12	0.29
Q8. I tend to bounce back after illness, injury, or other hardships.	2.88	3.06	0.18
Q9. Good or bad, I believe that most things happen for a reason.	3.06	3.06	0.00
Q10. I give my best effort no matter what the outcome may be.	3.12	3.18	0.06
Q11. I believe I can achieve my goals, even if there are obstacles.	3.12	3.18	0.06
Q12. Even when things look hopeless, I don't give up.	2.82	2.71	-0.12
Q13. During times of stress/crisis, I know where to turn for help.	2.94	3.41	0.47
Q14. Under pressure, I stay focused and think clearly.	2.41	2.53	0.12
Q15.I prefer to take the lead in solving problems rather than letting others make all the decisions.	2.82	3.18	0.35
Q16. I am not easily discouraged by failure.	2.24	2.65	0.41
Q17. I think of myself as a strong person when dealing with life's challenges and difficulties.	3.06	3.12	0.06
Q18. I can make unpopular or difficult decisions that affect other people, if it is necessary.	2.29	2.41	0.12
Q19. I am able to handle unpleasant or painful feelings like sadness, fear, and anger.	2.47	2.29	-0.18
Q20. In dealing with life's problems, sometimes you have to act on a hunch without knowing why.	2.76	2.76	0.00
Q21. I have a strong sense of purpose in my life.	2.88	2.94	0.06
Q22. I feel in control of my life.	2.82	2.94	0.12
Q23. I like challenges.	2.59	2.65	0.06
Q24. I work to attain my goals no matter what roadblocks I encounter along the way.	3.12	3.00	-0.12
Q25. I take pride in my achievements.	3.71	3.53	-0.18
Means Total Score	**71.29**	**74.29**	**3.00**
Means per Question	**2.85**	**2.96**	**0.12**

Table 2b. Connor-Davidson Resilience Scale	Control, n=3		
	Time 1	Time 2	Change
Q1. I am able to adapt when changes occur.	3.00	3.00	0.00
Q2. I have at least one close and secure relationship that helps me when I am stressed.	4.00	4.00	0.00
Q3. When there are no clear solutions to my problems, sometimes fate or God can help.	1.33	1.00	-0.33
Q4. I can deal with whatever comes my way.	3.00	2.67	-0.33
Q5. Past successes give me confidence in dealing with new challenges and difficulties.	3.67	3.00	-0.67
Q6. I try to see the humorous side of things when I am faced with problems.	3.33	3.33	0.00
Q7. Having to cope with stress can make me stronger.	3.00	3.00	0.00
Q8. I tend to bounce back after illness, injury, or other hardships.	3.00	3.67	0.67
Q9. Good or bad, I believe that most things happen for a reason.	3.33	3.00	-0.33
Q10. I give my best effort no matter what the outcome may be.	3.67	3.33	-0.33
Q11. I believe I can achieve my goals, even if there are obstacles.	3.00	3.33	0.33
Q12. Even when things look hopeless, I don't give up.	2.33	2.33	0.00
Q13. During times of stress/crisis, I know where to turn for help.	2.67	3.67	1.00
Q14. Under pressure, I stay focused and think clearly.	2.33	2.33	0.00
Q15.I prefer to take the lead in solving problems rather than letting others make all the decisions.	3.00	3.33	0.33
Q16. I am not easily discouraged by failure.	2.33	2.33	0.00
Q17. I think of myself as a strong person when dealing with life's challenges and difficulties.	3.00	3.00	0.00
Q18. I can make unpopular or difficult decisions that affect other people, if it is necessary.	2.33	2.67	0.33
Q19. I am able to handle unpleasant or painful feelings like sadness, fear, and anger.	3.00	2.33	-0.67
Q20. In dealing with life's problems, sometimes you have to act on a hunch without knowing why.	2.00	2.33	0.33
Q21. I have a strong sense of purpose in my life.	3.00	3.00	0.00
Q22. I feel in control of my life.	3.00	3.00	0.00
Q23. I like challenges.	2.00	1.67	-0.33
Q24. I work to attain my goals no matter what roadblocks I encounter along the way.	2.67	3.33	0.67
Q25. I take pride in my achievements.	3.67	4.00	0.33
Means Total Score	**71.67**	**72.67**	**1.00**
Means per Question	**2.87**	**2.91**	**0.04**

Table 3a. Connor-Davidson Resilience Scale: Experimental Group (Winter 2020)	**Time 1: Baseline**				
	not true at all	**rarely true**	**some-times true**	**often true**	**true nearly all the time**
	0	**1**	**2**	**3**	**4**
Question 1			3	11	3
Question 2			1	5	11
Question 3		3	8	6	
Question 4			6	10	1
Question 5			3	8	6
Question 6		1	7	5	4
Question 7		1	5	7	4
Question 8		1	4	8	4
Question 9		2	2	6	7
Question 10			3	9	5
Question 11			2	11	4
Question 12			5	10	2
Question 13		1	4	7	5
Question 14		2	8	5	2
Question 15		1	4	9	3
Question 16		4	6	6	1
Question 17		1	5	3	8
Question 18		4	5	7	1
Question 19				9	8
Question 20			6	9	2
Question 21		1	6	4	6
Question 22		1	4	9	3
Question 23		3	3	9	2
Question 24			2	11	4
Question 25			1	3	13
Totals	**0**	**26**	**103**	**187**	**109**
%	**0.00%**	**6.12%**	**24.24%**	**44.00%**	**24.65%**

Table 3b. Connor-Davidson Resilience Scale: Experimental Group (Winter 2020)	**Time 2: Final**				
	not true at all	**rarely true**	**some-times true**	**often true**	**true nearly all the time**
	0	**1**	**2**	**3**	**4**
Question 1				13	4
Question 2				5	12
Question 3		3	8	5	1
Question 4			3	10	4
Question 5			2	5	10
Question 6			6	7	4
Question 7			6	3	8
Question 8		1	4	5	7
Question 9		2	4	2	9
Question 10			3	8	6
Question 11			4	6	7
Question 12		2	4	8	3
Question 13			1	8	8
Question 14	1	1	5	8	2
Question 15		1	2	7	7
Question 16		2	6	5	4
Question 17			4	7	6
Question 18		4	5	5	3
Question 19	1	1	8	6	1
Question 20			7	7	3
Question 21		1	5	5	6
Question 22		1	5	5	6
Question 23		1	6	8	2
Question 24			5	7	5
Question 25			2	4	11
Totals	**2**	**20**	**105**	**159**	**139**
%	**0.47%**	**4.71%**	**24.71%**	**37.41%**	**32.71%**

Subproblem Three, what is the baseline resilience score among young adults enrolled at a university in the Southern Tier of New York who do not participate in this virtual instruction, was analyzed using a frequency distribution and other descriptive statistics. Although there were only 3 participants, the analysis is included to demonstrate intent. The mean baseline resilience score per person was 71.67 (*SD*±3.79) while the median score was 70 (min=69, max=76). The mean score per question was 2.87 (*SD*±0.61) with a median score of 3 (min=1.33, max=4.00; see Table 2b for more details).

Across the 25 questions for the control group, 64% of participants responded with 3 or 4 (n=48), 34.67% of participants responded with 2 (n=26), and 1.33% of participants responded with 0-1 (n=1; see Table 4 for more details). The top three questions scored at 3-4 were Question 22 (I feel in control of my life; n=3), Question 19 (I am able to handle unpleasant or painful feelings like sadness, fear, and anger; n=3), Question 2 (I have at least one close and secure relationship that helps me when I am stressed; n=3). The top three questions scored at 2 were Question 23 (I like challenges; n=3), Question 20 (In dealing with life's problems, sometimes you have to act on a hunch without knowing why; n=3), and Question 24 (I work to attain my goals no matter what roadblocks I encounter along the way; n=2). The only question scored at 0-1 was Question 3 (When there are no clear solutions to my problems, sometimes fate or God can help; n=1).

Subproblem Four, what is the final resilience score among young adults enrolled at a university in the Southern Tier of New York who do not participate in this virtual instruction, was analyzed using a frequency distribution and other descriptive statistics. Although there were only 3 participants, the analysis is included to demonstrate intent.

The mean final score per person was 72.67 (*SD*±0.58, which suggests scores are grouped together) while the median score was 73 (min=72, max=73). The mean score per question was 2.91 (SD±0.69) with a median score of 3 (min=1.00, max=4.00; see Table 2b for more details).

Across the 25 questions, 73.33% of participants responded with 3 or 4 (n=55), 21.33% of participants responded with 2 (n=16), and 5.33% of participants responded with 0-1 (n=4; see Table 4 for more details). The top three questions scored at 3-4 were Question 1 (I am able to adapt when changes occur; n=3), Question 2 (I have at least one close and secure relationship that helps me when I am stressed; n=3), and Question 22 (I feel in control of my life; n=3). The top three questions scored at 2 were Question 19 (I am able to handle unpleasant or painful feelings like sadness, fear, and anger; n=2), Question 20 (In dealing with life's problems, sometimes you have to act on a hunch without knowing why; n=2), and Question 23 (I like challenges; n=2). The top three questions scored at 0-1 were Question 3 (When there are no clear solutions to my problems, sometimes fate or God can help; n=2), Question 9 (Good or bad, I believe that most things happen for a reason; n=1), and Question 23 (I like challenges; n=1).

Table 4. Connor-Davidson Resilience Scale: Control Group (Spring 2020)	Time 1: Baseline					Time 2: Final				
	not true at all	rarely true	some-times true	often true	true nearly all the time	not true at all	rarely true	some-times true	often true	true nearly all the time
	0	1	2	3	4	0	1	2	3	4
Question 1				3					3	
Question 2					3					3
Question 3	1		2			1	1	1		
Question 4			1	1	1			1	2	
Question 5				1	2				3	
Question 6				2	1				2	1
Question 7			1	1	1				3	
Question 8			1	1	1				1	2
Question 9			1		2		1			2
Question 10				1	2				2	1
Question 11				3					2	1
Question 12			2	1				2	1	
Question 13			1	2					1	2
Question 14			2	1				2	1	
Question 15			1	1	1				2	1
Question 16			2	1				2	1	
Question 17			1	1	1				3	
Question 18			2	1				1	2	
Question 19				3				2	1	
Question 20			3					2	1	
Question 21			1	1	1			1	1	1
Question 22				3					3	
Question 23			3				1	2		
Question 24			2		1				2	1
Question 25				1	2					3
Totals	**1**	**0**	**26**	**29**	**19**	**1**	**3**	**16**	**37**	**18**
%	**1.33%**	**0.00%**	**34.67%**	**38.67%**	**25.33%**	**1.33%**	**4.00%**	**21.33%**	**49.33%**	**24.00%**

Subproblem Five, what are the differences between the final resilience scores of those who do participate in this virtual instruction and those who do not after controlling for baseline score, was originally to be analyzed using an ANCOVA. Despite the smaller sample sizes (17 in the experimental group and 3 in the control group), this analysis was still performed. However, it is worth noting that these results may be questionable and not able to be generalized. Thus, results should be interpreted accordingly, as larger sample sizes would have been ideal.

Scores per question increased an average of 0.12 points, and individual scores increased by an average of 3.00 points for the experimental group. Scores per question increased an average of 0.04 points; individual scores increased by an average of 1.00 point for the control group. Participants reported higher scores for the following questions: Question 2 (I have at least one close and secure relationship that helps me when I am stressed); Question 4 (Past successes give me confidence in dealing with new challenges and difficulties); Question 25 (I take price in my achievements). Participants reported lower scores for the following questions: Question 3 (When there are no clear solutions to my problems, sometimes fate or God can help); Question 18 (I can make unpopular or difficult decisions that affect other people if it is necessary).

After entering the experimental and control group data into SPSS, the following assumptions were tested before running an ANCOVA. First, the DV was confirmed to be normally distributed, first analyzed together and then separately per each group. With experimental and control groups together, data was checked for skewness (0.220) and kurtosis (-0.758), which were both found to be between -1 and 1 (see Appendix E for Descriptive Tables). Tests of Normality were examined and both the Kolmogorov-

Smirnov (0.200) and Shapiro-Wilk (0.644) were significant, indicating normal data. The Normal QQ plot was found to be quite linear. With experimental and control groups separated, the control group's small sample size (n=3) affected the descriptives. Linear relationships were found for both groups using a scatter plot (see Appendix E for Scatterplot). The Levene's Test of Quality of Error Variances did not violate the assumptions (F=1.655, Sig.=0.215).

The one-way between subjects ANCOVA was calculated to examine the effect of the intervention on final scores, covarying out the effect of baseline scores. Baseline scores were significantly related to final scores ($F(1,17) = 14.374$, $p = .001$). The main effect for the intervention was not significant ($F(1,17) = 0.124$, $p > 0.05$), with participants in the experimental group (M=74.29, *SD*=12.28) not being significantly different from participants in the control group (M=72.67, *SD*=0.58), even after covarying out the effect of the baseline score. Thus, there was no significant change from baseline to final scores in either group, nor were groups different from each other.

This supports the null hypothesis that there is no difference among the young adults' resilience scores when participating in the virtual instruction after controlling for baseline resilience scores. However, it is also worth noting that the power was small (0.063), so future research may want to examine this again with more individuals participating so the power increases and there is a greater opportunity to detect a difference.

Supplemental Analysis

A mixed-design repeated measures ANOVA was calculated to examine the effects of the intervention (Groups 1 and 2) and time (baseline and final) on scores without controlling for the initial baseline scores. No significant main effects or interactions were found (see Appendix F). The time x intervention interaction ($F(1,18) = 5.10$, $p > 0.05$), the main effect for time ($F(1,18) = 20.4$, $p > 0.05$), and the main effect for the intervention ($F(1,18) = 0.011$, $p > 0.05$) were not significant. Resilience scores were not influenced by either time or the intervention.

A paired-samples *t* test was calculated to compare the mean baseline score to the mean final score to further examine possible significant changes in either group (see Appendix G). The mean on the baseline score was 71.29 (SD=9.95), and the mean on the final score was 74.29 (SD=12.28). No significant difference from baseline to final score was found ($t(16) = 0.192$, $p > 0.05$).

Chapter 5: Discussion

Summary

This study examined the impact of teaching resilience, goal attainment, and other essential life skills to young adults via virtual instruction. The null hypothesis was supported; there is no difference among the young adults' resilience scores when participating in the virtual instruction after controlling for baseline resilience scores. Although the researcher has anecdotal and qualitative support that the intervention and curriculum make a difference in the lives of students who participate, resilience scores did not change significantly.

Discussion

This research examined the relationships between resilience and a self-designed leadership curriculum with young adults enrolled in a public university. Hartley (2011) examined the relationships between resilience, mental health, and academic persistence in undergraduate college students. This research included the paired-samples *t* test, mixed design ANOVA, and ANCOVA to examine the relationships between baseline and final scores, whereas Hartley utilized sequential regression analyses to examine the relationships between resilience and mental health measures and cumulative GPAs and a sense of belonging. Hartley included substantially more participants compared to this study and found that intrapersonal resilience factors did contribute to variance in cumulative GPAs as well as aptitude and success. Hartley found a strong statistical correlation between resilience factors and mental health. Both studies agree that college can be a time of adversity and more research on resilience and the college population is

beneficial, and the examination of GPAs and resilience scores can both provide early intervention, ongoing monitoring, and measurements of achievement.

This research utilized the Connor-Davidson Resilience Scale in a sample of postsecondary students who did not explicitly disclose disabilities and may or may not have been registered with the university's office which supports students with disabilities. An Australian study by Perera & Ganguly (2018) examined CD-RISC scores in a sample of postsecondary students who disclosed disabilities and were registered with the university's Disability Services Division. Perera & Ganguly included substantially more participants compared to this study, and the mean age was older than this study. The majority of participants in both studies were female. Although the students in this study did not explicitly disclose their disabilities or registration with support services, it is a likely possibility worth consideration for future research. Perera & Ganguly (2018) note the importance of studying resilience generally and especially with this specific population. This also emphasizes the importance of special education strategies and an accessible leadership curriculum, not just when considering the "hidden curriculum" but also ensuring that every learner can obtain these important life strategies.

The participants of this study were primarily white which is dissimilar to the work of Clauss-Ehlers & Wibrowski (2007) who considered resilience, social support, and ethnic identities among first- and second-generation college students enrolled in a summer Educational Opportunity Fund (EOF) program. While the majority were female in both studies, there were substantially more participants, the majority were African American, and the mean age was younger. The time frame of the summer program was similar to the winter semester used in this study, as was the baseline and final CD-RISC

measurements. Clauss-Ehlers & Wibrowski (2007) found a significantly increased mean final score. This study found no significant increase in the mean final score for both the experimental group and for the control group. The participants in the EOF program were considered to already possess resilience and the intervention helped cultivate that, and this study acknowledges students enrolled in the public university, especially in the education program, may already be resilient and hopes future research and larger sample sizes will demonstrate the impact of the added curriculum even with individuals who are already considered resilient.

Similarly, Scott et al. (2018) studied resilience with participants at a Historically Black College or University (HBCU). Most participants were female, and most were between 18-21, but there were more participants. Although the participants from the HBCU were considered to be ‘at risk’ academically, they exhibited an average resilience score higher than the averages found by this study. Future research should consider demographics, perhaps especially race and gender, as they relate to resilience to promote both accessible and individualized strategies as necessary.

The results may not demonstrate statistically significant or measurable impact, but existing research and anecdotes, success stories, and praise from former students of this curriculum do demonstrate an impact and the importance of teaching essential leadership skills to young adults. Perhaps that success cannot be easily replicated by other instructors or outside of this specific university or program. In the spirit of illuminating the hidden curriculum (and providing accessibility especially during a pandemic), these teachings can be recorded and published virtually to provide access to this course online

with synchronous and asynchronous features. This will provide access to those not enrolled at this particular university.

Limitations

The first limitation of this study is that the curriculum has been taught for 11 semesters by the same instructor (the author). New instructors may not have the same results. Because the groups are not randomized, the generalizability of the study is affected. It is worth noting that students enrolled in this particular education program tend to be resilient, high achievers; they must have a minimum GPA of 3.0 to be accepted. This may affect the generalizability of this study. Therefore, it is recommended that this study be replicated with students at other institutions and in other programs.

The second limitation of this study is that the majority of study participants were white women. Critical race theory could and should be applied to acknowledge the relationships between resilience and privilege. This study should be purposefully recreated among other demographics. This further reiterates the mission that leadership skills should be explicitly taught and accessible to all populations.

The third limitation of this study is that the experimental study occurred between December 16, 2019 and January 15, 2020. Due to logistical delays with permissions and REDCap, the control study occurred between April 9, 2020 and May 10, 2020. In future experiments, it would be ideal to have both groups studied simultaneously and to reduce this temporal separation. By the time the control study launched, COVID-19 was in full force. The university transitioned to fully-online classes in mid-March 2020. This may

have influenced participation rates; only three records within the control group were complete and viable.

The final limitation of this study is the lack of participants. Future informed consent letters may benefit from a notation about sending reminders. This was not included for this study, and, therefore, no participation reminders were sent. A lack of reminders combined with quarantine may have affected participation.

Implications for Future Research

In addition to replicating this study at universities and considering race, gender, disability status, and other demographics while recruiting more participants and achieving larger sample sizes, this research has value outside of academia. A similar pilot study was performed at a start-up company in the Southern Tier of New York as part of the researcher's position. After the team completed personality assessments and a resilience scale, half of the team included diplomats, or intuitive and feeling types known for their empathy, diplomatic skills, and passionate idealism. This type of person thrives where they can warmly engage with other people, and that includes sales. However, the other half of the team is not a diplomat, yet they're still very successful. This includes quiet introverts, observant sentinels, intuitive analysts, clever explorers, and more.

Their success must be because of another factor aside from having a personality perfect for sales. Because it's recognized and celebrated at this company that people are coachable, anyone can learn these sales and leadership techniques. People tend to be most successful when they learn quickly and are creative, confident, intuitive, and resilient.

So, is resilience the key factor? Maybe. The team of 65 included a range of resilience scores from 54-99. The mean score was 77.74, and the mode was 71 with seven people earning this score. Again, it's a fairly small sample size, and this particular pilot study has just begun. The company would like to continue to assess candidates with a hiring rubric that selects for diligence, grit, adaptability, collaboration, discipline, and resilience, and continue to analyze whether these factors—perhaps especially resilience—play a role in the success of representatives.

Conclusion

The original purpose of this longitudinal and quantitative survey research was to examine the impact of a regular personal development practice on resilience when delivered via virtual instruction among young adults enrolled at a university in the Southern Tier of New York. The original definition of "impact" was defined as a significant difference in baseline and final resilience scores among those who received the intervention of the curriculum. Due to COVID-19 and other limitations, this particular study did not produce significant results to make the claim of an impact by that definition; there were small and unequal sample sizes for the experimental and control groups. Extraordinary circumstances confounded the results, but this adds depth to the story and suggests that resilience instruction is especially important. Just because there were not significant findings does not mean something important did not happen. There is something important here that may be better captured by qualitative or mixed methods research in the future that wasn't captured quantitatively.

Over the span of eleven semesters teaching this leadership course, the majority of students regularly shared positive feedback about how this curriculum helped or changed them or how the course should be required for all students. This feedback fueled the pursuit of this PhD degree and this particular project. When students were asked to elaborate on why they felt this course changed or helped them or should be required for all students, they often mentioned how the course impacted their confidence, resilience, anxiety levels, sense of purpose, locus of control, and more.

One student wrote that the course "…teaches you how to have higher confidence and get out of your comfort zone daily…it taught me how to push past any obstacles and continue to try my best, and it also taught me how I am in control of my thoughts and actions." Another student referenced the importance of a positive mindset: "I think the class really taught me to maintain a positive mindset no matter the situation. Having the right attitude definitely impacts resilience!" Another student mentioned the initial discomfort of being one of the few students of color in the classroom: "That class changed me in terms of making me realize it's okay to be different. I struggled for a while but that class made me realize I need to be comfortable in myself before I help others do the same. After that class, I felt confident enough to apply to graduate school to be a therapist…and look, I made so many good friends from that class."

Multiple students referenced the "prescription for excusitis" project, which "definitely gave me perspective on resilience in other people" and "helped me learn through real stories that everyone, including myself, is stronger than their most difficult obstacles". Another student shared that "the way the course was set up, especially the different presentations and the activities with the impromptu speeches really just showed

that everyone makes mistakes/struggles and recognizing that it's part of human nature to do that makes it that much easier to overcome a challenge/be resilient". Another elaborated on the connection between confidence and resilience: "I think confidence builds resilience, in that the more confidence I have in myself, the better I will be at managing and withstanding all future seasons in life." Another student referenced her first oral presentation, where she bravely spoke about someone who positively influenced her while fighting back tears: "When I was presenting about my fight song and got emotional and was able to push through that and present anyway, it showed me that I am resilient…I wouldn't have had that opportunity to learn that I was able to do something like that in front of a room of people and that definitely showed me that if I can do that, I can teach to a room of students about something I am passionate about in the future." Lastly, one of the students who started a teaching position in the same year as the pandemic said: "…thinking back to when I started in-person at [a local school district] at the beginning of February, I've often fallen into imposter syndrome since I was so new. But using simple techniques that were discussed in your class helped so much, such as little mantras, power poses, and mindful breathing exercises. I was able to remind myself that I can do it, which contributed to the increased confidence. Even now is a time of a lot of anxiety since I've been rejected from so many teaching jobs and I'm home again, but meditating, journaling, and practicing gratitude really helps to keep me grounded."

In the future, collecting additional data over a series of semesters could be compared to these original findings. There is still much to learn from non-significant results. Adjustments to the conditions, controlling for other variables, or measuring

additional skills beyond resilience may prove to be interesting. Maybe it's resilience that plays a role; maybe it's other factors.

Instructors of leadership and development can and should explicitly teach strategies for goal attainment, habit reinforcement, optimism, success, and resilience. All individuals will face adversity, so all individuals should have access to this preparatory training. These strategies should not be learned the hard way or trapped in the hidden curricula of life or academia. The use of virtual systems, such as apps or online instruction platforms, especially those that include gamification and social collaboration, can increase accessibility of important life lessons and leadership skills. This mission is supported by resilience theory, growth mindset research, positive psychology, trauma-informed practice, and Maslow's hierarchy of needs.

Everyone encounters some degree of adversity in life. All individuals can benefit from foundational instruction and reinforcement, but young adults—those who are preparing for adulthood but who may not yet be ready or equipped—require this instruction. The researcher has seen the tremendous benefits of explicitly teaching these success strategies to undergraduate and graduate students. It would be ideal to begin this instruction even earlier, from elementary throughout secondary school, to equip individuals with sturdy foundations as they continue development. This could lead to less of a shock or struggle as adulthood approaches and, perhaps, decreased levels of stress and an increased likelihood of success. While this study did not find significant differences in baseline and final resilience scores among young adults enrolled in a public university in the Southern Tier of New York due to, at the very least, small sample sizes

and a pandemic, the mission of supporting all humans as they develop *is* significant and the pursuit of the best available strategies and techniques is worthwhile.

Appendix A: Resilience Questionnaire

delivered via REDCap

Connor-Davidson Resilience Scale 25 (CD-RISC-25) ©

*For each item, please mark an "**x**" in the box below that best indicates how much you agree with the following statements as they apply to you over the last **month**. If a particular situation has not occurred recently, answer according to how you think you would have felt.*

		not true at all (0)	rarely true (1)	sometimes true (2)	often true (3)	true nearly all the time (4)
1.	I am able to adapt when changes occur.	☐	☐	☐	☐	☐
2.	I have at least one close and secure relationship that helps me when I am stressed.	☐	☐	☐	☐	☐
3.	When there are no clear solutions to my problems, sometimes fate or God can help.	☐	☐	☐	☐	☐
4.	I can deal with whatever comes my way.	☐	☐	☐	☐	☐
5.	Past successes give me confidence in dealing with new challenges and difficulties.	☐	☐	☐	☐	☐
6.	I try to see the humorous side of things when I am faced with problems.	☐	☐	☐	☐	☐
7.	Having to cope with stress can make me stronger.	☐	☐	☐	☐	☐
8.	I tend to bounce back after illness, injury, or other hardships.	☐	☐	☐	☐	☐
9.	Good or bad, I believe that most things happen for a reason.	☐	☐	☐	☐	☐
10.	I give my best effort no matter what the outcome may be.	☐	☐	☐	☐	☐
11.	I believe I can achieve my goals, even if there are obstacles.	☐	☐	☐	☐	☐
12.	Even when things look hopeless, I don't give up.	☐	☐	☐	☐	☐
13.	During times of stress/crisis, I know where to turn for help.	☐	☐	☐	☐	☐
14.	Under pressure, I stay focused and think clearly.	☐	☐	☐	☐	☐
15.	I prefer to take the lead in solving problems rather than letting others make all the decisions.	☐	☐	☐	☐	☐
16.	I am not easily discouraged by failure.	☐	☐	☐	☐	☐
17.	I think of myself as a strong person when dealing with life's challenges and difficulties.	☐	☐	☐	☐	☐
18.	I can make unpopular or difficult decisions that affect other people, if it is necessary.	☐	☐	☐	☐	☐
19.	I am able to handle unpleasant or painful feelings like sadness, fear, and anger.	☐	☐	☐	☐	☐
20.	In dealing with life's problems, sometimes you have to act on a hunch without knowing why.	☐	☐	☐	☐	☐
21.	I have a strong sense of purpose in life.	☐	☐	☐	☐	☐
22.	I feel in control of my life.	☐	☐	☐	☐	☐
23.	I like challenges.	☐	☐	☐	☐	☐
24.	I work to attain my goals no matter what roadblocks I encounter along the way.	☐	☐	☐	☐	☐
25.	I take pride in my achievements.	☐	☐	☐	☐	☐
Add up your score for each column		0	+ ____	+ ____	+ ____	+ ____

Add each of the column totals to obtain CD-RISC score = _____

Appendix B: Demographic Survey

delivered via REDCap

Demographics:

1. What is your gender?

Female	Male	Non-Binary	Prefer Not To Disclose

2. What is your age?

3. What is your race (select all that apply)?

American Indian or Alaska Native	Asian	Black or African American	Native Hawaiian or Other Pacific Islander	White

4. What is your ethnicity?

Hispanic or Latinx or Spanish Origin	Not Hispanic or Latinx or Spanish Origin

5. What is your annual income level?

Below $20,000	$20,000-$30,000	$30,001-$40,000	$40,001-$50,000	$50,001-$60,000	$60,001-$70,000	Above $70,001

6. What is/are your major(s)?

7. What is/are your minor(s)? You may enter N/A if this does not apply to you.

Appendix C: Informed Consent Form

Help Me Do It Myself: The Impact of Teaching Resilience, Goal Attainment, and Other Essential Life Skills to Young Adults via Virtual Instruction

Introduction

You are invited to participate in a research study about understanding the impact of teaching resilience, goal attainment, and other essential life skills to young adults via virtual instruction. You were chosen as a possible participant because you are 18-23 years of age and have not received credit for EDUC 444/544: Leadership and Communication for the Modern Educator at Binghamton University. Please read this form. Ask any questions you may have before agreeing to take part in this study. This study is being conducted by Caroline Millen, a doctoral student at Marywood University.

Purpose: What the study is about

The purpose of this longitudinal survey study is to test the theories of trauma-informed practice, self-actualization, and the hidden curriculum. It relates the regular personal development practice via virtual instruction to those who accomplish goals and strengthen resilience, controlling for age, gender, race, income, and majors, for young adults at universities in the Southern Tier of New York.

Procedures: What you will be asked to do

If you agree to be in this study, then you will complete an online survey twice during a three-month period: once at the beginning to establish a baseline and again after the instruction is complete. There is a third demographic survey taken once. The total time commitment is one hour or about 20 minutes per survey.

Risks and Benefits

The risk in this study is no greater than the risks experienced in daily life or activities. The benefit in this study may be an increased understanding or score of resilience, goal attainment, and other essential life skills and greater awareness of relevant resources available to young adults.

Resources

This survey addresses resilience. If this content makes you feel uncomfortable in any way, you may cease participation. Resources are available, including Binghamton University's Counseling Center, at 607-777-2772.

Payment/Rewards

No course credit will be awarded for participation in this survey.

Confidentiality

The records of this study will be kept private. Information used in any written or presented report will not make it possible to identify you. Only the investigator will have access to the research records. Records will be kept in a locked file. Records will be kept

for a minimum of five years. Then, after five years, they will be destroyed; all computer records will be deleted.

Taking Part is Voluntary

Your participation is voluntary. Your decision to participate or not participate will not affect your current or future relations with the investigator. It will not affect your relations with Marywood University. You may withdraw at any time without penalty or loss of benefits to which you are entitled. To withdraw, inform the investigator via email. Any data collected before submission will be destroyed.

Contacts and Questions

The investigator conducting this study is Caroline Millen. You may ask questions now or later. If you have questions, you may contact the researcher at cmillen@maryu.marywood.edu or cmillen@binghamton.edu.

If you have questions related to the rights of research participants or research-related injuries (where applicable), please contact Ms. Courene M. Loftus, MPA, CIP, Marywood University's Director of Human Participants Protection and Research Compliance, at 570-961-4782 or cloftus@maryu.marywood.edu.

You may print a copy of this form to keep for your records.

Statement of Consent

I have read the above information. I have asked questions and have received answers. I consent to participate in this study.

Printed Name of Participant

Signature of Participant

Date

Name of Authorized Person Obtaining Informed Consent

Date

Appendix D: Recruitment Letter

Help Me Do It Myself: The Impact of Teaching Resilience, Goal Attainment, and Other Essential Life Skills to Young Adults via Virtual Instruction

Subject: Complete resilience survey

Dear students:

My name is Caroline Millen, and I am a doctoral student at Marywood University. I am conducting a research study. Its purpose is to explore the impact of teaching resilience, goal attainment, and other essential life skills to young adults via virtual instruction.

You are invited to participate in the study if you qualify. To qualify, you must be 18-23 years of age and have not received credit for EDUC 444/544: Leadership and Communication for the Modern Educator at Binghamton University. The research will take place through three online surveys via REDCap. The online surveys will take about one hour to complete or 20 minutes per survey.

Benefits of this research study may be an increased understanding or score of resilience, goal attainment, and other essential life skills and greater awareness of relevant resources available to young adults.

Survey Link A (Demographics)
Survey Link B (Resilience)

This study has been approved by Marywood University's Institutional Review Board.

Sincerely,

Caroline Millen
cmillen@maryu.marywood.edu
cmillen@binghamton.edu

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