An Evaluation of Business Students' Perceptions About Their Personal Everyday Creativity

by

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ABSTRACT

With organizations' rising interest in creativity as one of the most sought out skill sets for graduates, it has become crucial to infuse creativity training in academic programs. This study evaluated freshmen business students' perceptions about their personal, everyday creativity and examined the influence of infusing creativity training in their freshmen seminar course.

This action research study drew upon the intersection of three creative self-belief theories from management and education psychology literature: Jaussi, et al (2007) Creative Identity Theory; Karwowski (2014) Creative Mindset Theory; and Tierney & Farmer (2002) Creative Self-efficacy Theory. These theories arguably stemmed from Burke (1991) Identity Theory; Dweck (2006) Mindset Theory; and Bandura (1977, 1997) Self-efficacy Theory, respectively. This approach was used to understand what factors influenced students' perceptions about their personal, everyday creativity.

Freshmen business students participated in the study. A concurrent mixed methods approach was used to gather data from the students. Quantitative data came from a post- and retrospective pre-intervention survey that assessed four constructs: creative identity, creative self-efficacy, growth mindset, and fixed mindset. The data also came from the quantitative section of a post-workshop feedback survey asking to rate the effectiveness of each workshop. Qualitative data were gathered in several ways. Student interviews focused on asking how they defined creativity, shared reasons that motivated or inhibited them to practice creativity, and explained to what extent the workshops influenced them. Additional qualitative data came from student reflection essays and the qualitative section of a post-workshop feedback survey.

Research results suggested students gained an increased understanding in the importance of adopting a growth mindset, designating ‘creative’ as a critical identity and building confidence in their creative endeavors. The students’ interview and reflection essay data were consistent with the survey data. Finally, research results from the study highlighted the benefit of creativity training as a crucial, complementary, and iterative form of study in an academic setting allowing students to know themselves better and to prioritize their creative performances as part of their program learning outcomes.

DEDICATION

I dedicate this dissertation to my mentor, Molana Salaheddin Ali Nader Shah Angha, whose unwavering commitment and selfless support has made me a better human being.

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I am grateful to Thunderbird's undergraduate program administration for allowing me to innovate. Special thanks to Dr. Roy Nelson and Dr. Anthony Restar for allowing me to re-arrange the curriculum and incorporate my creativity workshops in the freshmen seminar course.

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CHAPTER 1

LARGER AND LOCAL CONTEXT OF THE PROBLEM OF PRACTICE

> Leadership is defined as the creative capacity to evoke the most positive capabilities and potentialities within ourselves, and consequently, within others.
>
> — Angha, 2002, p. viii

From the latter half of the 20th century to the present, creativity has become an object of intense interest and focus across a range of contexts in research, practice, and popular discourse (Runco, 2014). It was frequently noted as one of the most sought-after qualities of thinking (Williams, 2002) and has often been described as essential to the workforce of the present and the future (Florida, 2014). One of the most prevalent areas for heightened interest in and need for creativity in practice has been across the varied contexts of business—as corporations struggled to innovate and keep pace with the demands of the 21st century. As calls for creativity across sectors of industry have grown, so too has business education grown as an area of study. This all signaled a clear need for more attention to creativity in business education—which was the focus of this research.

I began this chapter by defining creativity and followed by providing an overview of the broader context of business which has signaled a need for creativity. I then situated these topics within the local context for this study of creativity in business education.

The Rise of Business Education and Creativity

In the report *All Our Futures* (1999) by the British National Advisory Committee on Creative and Culture Education (NACCCE), Sir Ken Robinson and his colleagues introduced three definitions of creativity. In general, "many people associate creativity

primarily with the arts […] but creativity is not unique to the arts. It is equally fundamental to advances in the sciences, in mathematics, technology, in politics, business and in all areas of everyday life" (NACCCE, 1999, p. 27).

Second, the report suggested there was another type of creativity where certain people with exceptional creative gifts have produced historic theories, inventions, paintings or compositions but they were not very common in society. Finally, the authors wrote about a more democratic definition of creativity that encompassed more people which was the *process* of "imaginative activity fashioned so as to produce outcomes that are both original and of value" (NACCCE, 1999, p. 30). From Robinson's point of view, the idea that all creative people must be artists was a misleading and limiting social construct. Consistent with the third definition, all people could be creative in their work and daily life, even if they did not recognize they were being creative. With respect to management literature, 'creativity' has not always been well defined, but Teresa Amabile's definition that creativity was "the production of novel and appropriate solutions to open-ended problems in any domain of human activity" (Amabile, 1997, p. 18) was often cited.

The definition of creativity in both education and business domains provided the opportunity to understand society's current interpretation from both non-expert and expert lenses. Both domains predominantly leaned towards a democratic definition of everyday creativity where leaders and researchers stated creativity could and should be developed by all and acted on in various domains as a vital driver for change and innovation (Cropley & Cropley, 2009).

To address this need, U.S. business schools have stepped up their game with regard to creative development. In 2018, the National Center for Education Statistics (NCES) released data on the most popular majors for postsecondary students in the United States. According to NCES in 2016–17 academic year, approximately 20% of the 1,956,032 bachelor's degrees conferred were concentrated in one field of study, business (381,353), whereas other fields of study conferred less than 12% each. (Department of Education, 2018). The same data showed the field of business surpassed education in 1980 and has continued to be the most highly sought-after bachelor's degree in the U.S. to date.

The Association to Advance Collegiate Schools of Business, known as AACSB International, has provided quality assurance, business education intelligence, and professional development services to over 1,600-member organizations and nearly 800 accredited business schools worldwide (About Us, n.d.). In their recent research report, AACSB suggested,

> innovation and new business creation are among today's strongest drivers of economic development…. Business schools cannot breed innovation without being innovative themselves. Their own structures and activities—whether approaches to extracurricular or co-curricular learning or to incentivizing multidisciplinary research projects—will need to adapt. (A Collective Vision, 2018, p. 4-5)

This report challenged business schools to become 'co-creators of knowledge' in multiple disciplines to address evolving complex world challenges. Davenport (2005) claimed the rise of 'knowledge work' has been foreseen for years. In 1959, the American

management professor, Peter Drucker in his book *Landmarks of Tomorrow*, coined the term 'knowledge worker' anticipating "a [post-industrial] age when people would generate value with their minds more than with their muscle" (quoted in Wartzman, 2014, para. 3). Although there was no standard definition of 'knowledge work' in the research literature, it was differentiated from other types of work emphasizing "non-routine" problem solving that required non-linear and creative thinking (Reinhardt, Schmidt, Sloep, & Drachsler, 2011, p. 150).

Around the same time that Drucker wrote about 'knowledge worker,' Fritz Machlup (1962), an Austrian-American economist, was one of the first economists to introduce 'knowledge' as an economic resource in the 'knowledge economy' (p. 44) and "stated that knowledge workers comprised almost a third of the U.S. workforce" (Davenport, 2005, p. 4). In recent years, the U.S. Bureau of Labor Statistics (BLS) still did not classify knowledge workers, but it did list occupations that fell into the knowledge worker categories. Based on BLS Household data, the Federal Reserve Bank of St. Louis (2016) created an interactive chart classifying knowledge worker occupations into four major groups:

(a) non-routine cognitive (e.g., managers and computer scientists),

(b) non-routine manual (e.g. service industry occupations),

(c) routine cognitive (e.g., office work—bookkeepers, filing clerks, bank tellers), and

(d) routine manual (e.g., manufacturing and transportation related).

According to the green line in the chart below, knowledge workers, per se, accounted for 60 million people, i.e., 48%, with 'non-routine cognitive' jobs out of 123

million U.S. workers in 2016. Further, the BLS data showed that managers made up 30% of all professional jobs.

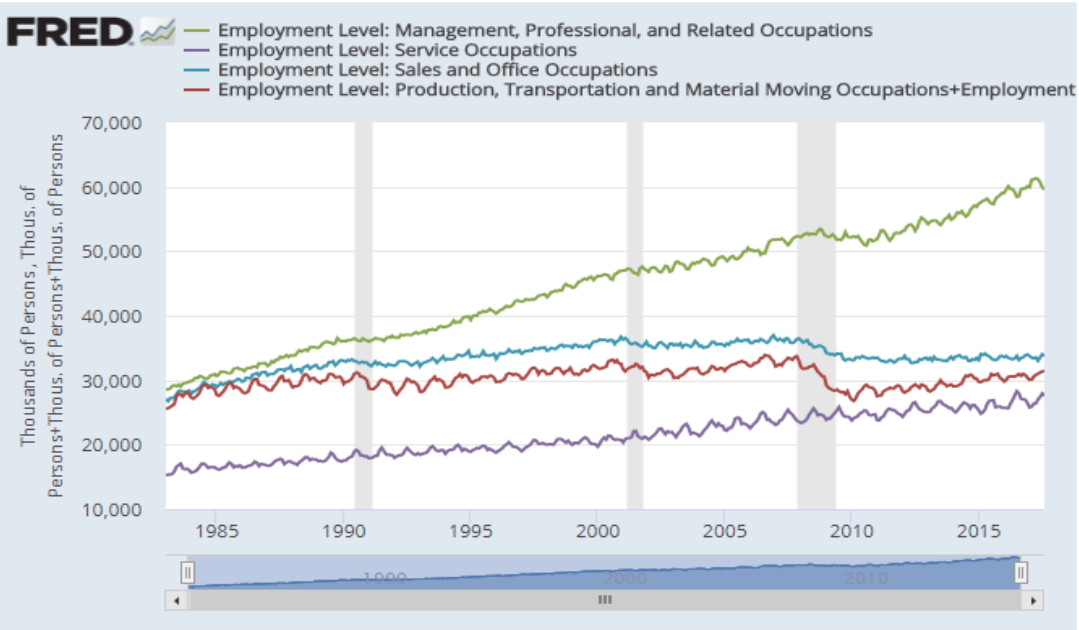

Figure 1. Federal Reserve Bank of St. Louis, FRED Blog: Job Polarization. (28 Apr 2016). [Snapshot of interactive map showing U.S. Bureau of Labor Statistics Table A-13: Number of Employed and unemployed persons by occupation, not seasonally adjusted. Selected years: 1984 through 2016.]

BLS Employment Projects program also released projections for the period 2014-24. During this time, U.S. employment of 602 occupations (mostly knowledge worker jobs) has been expected to increase by 6.5% over this period, adding about 9.8 million new jobs to the U.S. economy (Hogan & Roberts, 2015). This projection indicated that more than 50% of jobs would fall under the category of knowledge work jobs whereas the remaining percentage of the labor market would continue to be made up of lower skilled, lower-pay service class and manufacturing jobs.

Anxiety stemming from technological advancements has not been a new phenomenon. During the industrial revolution, British economist, John Maynard Keynes predicted widespread unemployment “due to our discovery of means of economising the

use of labour outrunning the pace at which we can find new uses for labour" (Keynes, 1933, p. 3). For 21st century employment., University of Oxford researchers warned readers that 47% of U.S. jobs were at risk due to technological advances (Frey & Osborne, 2013, p. 1). However, researchers at the BLS provided opposing arguments, predicting that new knowledge jobs were in fact growing, and would continue to do so, but people had to adapt. Thus, as technological capabilities improved, many researchers and industry leaders predicted that new jobs would require new sets of skills, shifting from cognitive and task driven skills towards an emphasis for employees to have social, emotional, creative, and relational skills (Schwartz, Collins, Stockton, Wagner, & Walsh, 2017).

Even with this prediction, Richard Florida, professor at the University of Toronto, warned not to create artificial class divides – between creative and non-creative knowledge workers – given the emergence of these new trends in the labor force. He wrote, "the only way forward is to make all jobs creative jobs, infusing …every […] form of human endeavor with creativity and human potential" (Florida, 2014, p. xiv). Florida called the new emerging economy the 'Creative Economy' and argued that its potential could only be realized when every worker was "recognized and empowered as a source of creativity - when their talents are nurtured, their passions harnessed, and they are appropriately rewarded for their contributions" (p. xiv). In other words, in the 21st century, workers needed to develop knowledge skills and creativity.

We already have begun to see creativity become a differentiator in international economics. In a global report that assessed productivity and other factors among 137 economies, since 2004, the U.S. Global Competitiveness Index overall ranking oscillated

between 1 and 7 and was currently at #2. The 12th pillar of the Index was about innovation where the U.S. also ranked second for its capacity to innovate. The 5th pillar was about higher education and training where the quality of U.S. management schools ranked 6th (World Economic Forum & Harvard University, 2017).

In the U.S., during the early part of the 21st century, rapid technological innovation disrupted many industries from manufacturing to education. In 2010, many industry leaders identified the need to take a step back to evaluate the global marketplace and figure out how to proceed. In the 2010 IBM CEO study, among other findings, the researchers' concluded that "creativity [was] the single most important leadership competency for enterprises seeking a path through this [marketplace] complexity" (IBM Study, 2010, p. 3).

Similarly, the Adobe's 2016 State of Create report revealed key highlights from U.S. respondents including:

- people who identified as creators reported household income that was 17 percent higher than non-creators in the U.S.
- 77% of U.S. respondents agreed that being creative is valuable to the economy and 82% to society.
- yet only 55% described themselves as creative and 44% said they were living up to their creative potential.
- 71% of respondents believed that creativity was stifled by the education system, and only 41% felt that the government encouraged schools to teach students to be creative.

- 85% wanted schools to do more to foster creativity – by prioritizing "learning by doing" over direct instruction, develop a wide variety of student skills over specialized skills (79%) and teach creativity over memorization (78%).
- U.S. respondents overwhelmingly perceived that a government that invested in creativity was more likely to increase productivity (89 percent), foster innovation (87 percent), have happier citizens (86 percent) and be competitive (85 percent).

Taken together, notable researchers and industry leaders have described the evolution of economies, from knowledge to creative economy, due to technological advancements. Further, they suggested that continued growth was dependent on capitalizing on human creativity, as a differentiating human skill set. According to governmental and non-governmental resources, all data pointed to an increasing number of jobs that required new sets of skill for employees in the U.S. to be more social, creative, and relational. Adobe's survey data suggested a lot of work was still left to be done to bridge the perceived gap U.S. respondents felt with respect to living up to their full creative potential. In the following sections, I have explained the overall benefits of creativity in addition to economic advantages of it.

Overall Benefits of Creativity

Health benefits. In addition to economic improvement, engaging in creative activities also has been shown to reduce stress and anxiety, decrease negative emotions, and improve medical outcomes for youth and adults (Stuckey & Nobel, 2010).

Interventions included but were not limited to art therapy such as drawing, painting, writing (Slayton, D'Archer, & Kaplan, 2010), meditation and mindfulness-based stress reduction (Kabat-Zinn, 2003) as a relaxed mind has been a creative mind, positive task feedback (Hon, Chan, & Lu, 2013), play (Russ, 2010), and divergent thinking tasks (Silvia et al., 2008).

Satisfaction. Regardless of age, creating things has also brought personal satisfaction; however, sometimes there have been barriers and limitations that must be addressed in the creative progress. American business professor, Teresa Amabile (2011) in her book *The progress principle* shared empirical evidence on using 'small wins' as an intervention tool to remove obstacles to progress, including meaningless tasks and toxic relationships, to ignite creativity at work and any setting as a means to maximize performance and engagement. From another angle, voicing one's dissatisfaction regarding a process or event and so on with perceived organizational or community support has also led to creativity and satisfaction (Zhou & George, 2001).

New ways of self-expression. With the advent of social media, individuals have demonstrated their creativity in a variety of online platforms. In business schools, LinkedIn, Facebook, Handshake, and e-portfolios have been the most popular places to display education, work experience, projects, startups, and job inquiries. There have also been websites such as Fivr that have allowed students to generate income with a variety of talents and skills for short term employment.

Even with all these benefits in creative development, 45% of U.S. respondents were still insecure about their creative abilities and defensively described themselves as non-creative types (Adobe, 2016). Cropley and Cropley (2009) noted that some managers

and teachers in higher education were, if not hostile, at least apathetic toward creativity. They were willing, but uncertain what to do in practice to foster creativity. This state of affairs appeared to be largely the result, not of ill will, but of lack of understanding of what creativity was, how it could add value to solve problems, and how to foster it.

In an attempt to determine a solution to foster creativity, some organizations adopted several strategies to maximize their creative potential such as recruiting individuals with more creative qualifications (Ford, 1999), creating corporate cultures that promoted innovation (Amabile, 1998), and establishing teams to exchange and share ideas (Paulus & Yang, 2000). By altering the environment and/or promoting incentives, organizational leaders set out to enhance creativity. Yet in the management literature, there were fewer studies that focused on how individuals' beliefs, attitudes, and expectations about creativity influenced their creativity and whether those beliefs could be changed to maximize creative performance. With the discovery of this gap in literature an effective approach appeared to one that leveraged educational literature because prior research highlighted the integral nature role identity, self-efficacy, and implicit theories played in determining performance (Burke & Reitzes, 1981; Bandura, 1977; Dweck, Chiu, & Hong, 1995).

These theories served as the guiding theoretical frameworks for this study. In the succeeding chapters, I elaborated on how Burke's (1991) identity theory explained the identity formation process, the influence of self on social behavior, and how salient identities permeated different domains particularly the creative identity. Also, I delved into Dweck's (2006) Mindset theory to describe how people gauged their beliefs about

their creative abilities. Finally, I applied Bandura's (1977, 1997) work on sources of self-efficacy to discuss possible ways to increase students' creative confidence.

Situated Context

The setting of the study was within the Thunderbird School of Global Management at Arizona State University (ASU). Thunderbird has been historically recognized for its graduate programs, currently ranked 1st in the U.S. for master's in management specialty ("Top Tier: Masters in Management," 2019). The prestige of the school's reputation has crossed over to its bachelors' degree programs as several of its well-known faculty teach both at the bachelor and master degree levels. In addition, ASU has received several accolades, most notably, ranking number one in the U.S. for the most innovative university from 2016 to 2018 ("Most Innovative School," 2018).

The Thunderbird undergraduate program at ASU's West campus located in Phoenix, Arizona has served as the main hub for Thunderbird undergraduate students seeking specialized undergraduate degrees in global management and international trade. The school launched the Bachelor of Global Management (BGM) in fall 2015 and has 164 students as of spring 2019. Meanwhile, the Bachelor of Science in International Trade (BSIT) began in fall 2016 and has 35 students as of spring 2019.

The First-Year seminar, TGM 191, has served as a 1-credit introduction course to the BGM/BSIT programs and campus resources. The course objectives have also included defining student academic integrity, introducing personal wellness, providing an overview of ASU library resources, as well as, building academic skills such as time management, Microsoft Excel, note-taking, and reading skills that would enhance

academic achievement. Students also created a career profile on LinkedIn and ASU Career Services Handshake websites.

Both bachelor's programs attracted students who aspired to learn how to work in multinational companies, desired to comprehend more than one language, and aimed to study or work abroad during their summer internships. Each bachelor's degree was based on a cohort model that afforded smaller class sizes and decreased student-to-teacher ratios. The majority of existing students came from Generation Z or Post-Millennials, a name given by the Pew Research Center (2018) i.e., individuals who were born after the mid-1990s and the remaining were Millennials who were born between 1981 and 1996.

Identifying a Need in Practice

Prior data illustrated that business degrees were and continued to be the most highly sought-after bachelor's degree. Moreover, the increase of management and professional knowledge work-based jobs has created a competitive marketplace. Data have shown these jobs will need individuals to be more creative, social, and relational. Business schools have been challenged more than ever before to serve as pipelines to produce creative individuals and innovative programs to respond to industry leaders' demands.

As a current Thunderbird graduate program recruiter who also had several years of industry experience, I had witnessed organization's lack of ability to train creativity using an inside-out approach. I had also experienced leaders who had developed their creative side with positive outcomes. These observations served as an inspiration to research and develop a training program that would fill in the gap with respect to teaching and developing creativity among business students.

Problem of Practice and Purpose of the Project

The problem of practice in this study has involved Thunderbird's capitalizing on the momentum of relatively new undergraduate programs by including creativity as a distinct learning outcome in Thunderbird's curriculum to build its competitive advantage relative to other programs. Currently, Thunderbird's undergraduate freshman seminar curriculum neither included any course objective to assess students' creativity levels as a distinct skill set nor to teach creativity to these students.

Therefore, the purpose of this study was to evaluate Thunderbird undergraduate, business students' perceptions about their personal, everyday creativity based on creative belief theories such as creative identity, creative self-efficacy, and creative mindset and then to examine the influence of infusing creativity training into their freshmen seminar course. The goal was that this action research study would set the tone and provide initial steps towards developing students' creative competency as they moved toward becoming global business leaders.

Research Questions

To effectively explore creativity and its development among undergraduate students in a business program, the following research questions guided the study.

1. How did Thunderbird undergraduate students define creativity? What specific reasons inhibited or motivated them to practice their creativity?
2. What were their perceptions about their own creative mindset, creative identity, and creative self-efficacy?

3. How and to what extent did participating in creativity workshops influence Thunderbird students' perceptions of their creative identity, creative self-efficacy, and creative mindsets?

CHAPTER 2

THEORETICAL PERSPECTIVES AND RESEARCH GUIDING THE PROJECT

> The future belongs to a very different kind of person with a very different kind of mind—creators and empathizers, pattern recognizers and meaning makers. These people…will now reap society's richest rewards and share its greatest joys.
>
> ― Pink, 2005, p.1

The main research question addressed by this study was how freshman business students' perceived creativity and its development. The literature review was conducted to evaluate three separate but related theoretical frameworks. The theories came from cognitive processes that played a crucial role in evaluating individuals' belief systems. In the first section, I focused on identity theory, the role identity played in generating behaviors particularly creative behavior, and a brief history on creativity. In the second section, I described implicit theories i.e., the beliefs people held about their intellectual and creative abilities, their directing influence on learning and performance, and a discussion on the malleable or fixed nature of creativity. In the third section, I highlighted self-efficacy theory to explain sources of information that shaped people's efficacy expectations. After each section, there was a discussion regarding related studies that provided empirical evidence for each of the guiding frameworks followed by a short summary with implications that informed the innovation and the action research study.

Identity Theory

In the previous chapter, creativity was defined, and reasons were provided with respect to why creative behavior positively influenced the economy and individuals' overall well-being. In theoretical terms, to be called a creative person, or a student, a

soccer player, a leader, and so on was, in fact, to assume an identity. Therefore, for this study, it became important to understand how identity was formed and shaped and linked to related performance.

Among prominent identity theorists such as Sheldon Stryker and Peter Burke (2000), 'identity' as used in this study referred to "parts of a *self* composed of the meanings attached by persons to the multiple roles they typically play in highly differentiated contemporary societies" (p. 284). 'Identity theory' has developed in two strong, but distinct directions. In the first direction, Stryker (1980) pointed towards explaining how social structures influenced the *self*, whereas in the second direction, Burke (1991) indicated identity was how the *self* affected social behavior. To understand better the internal processes of identity formation, the latter direction was chosen as the orientation that informed the current work.

According to Burke and Stets (2000), the *self* was considered reflexive, that is, it could name itself as if an object. Once the self was identified, an identity was formed; "the core of an identity is the categorization of the self as an occupant of a role, and the incorporation, into the self, of the meanings and expectations associated with that role and its performance" (Burke & Stets, 2000, p. 225).

Thus, the set of meanings established a standard of who one was (Burke, 1991). Once a standard was set, an identity was activated, and a feedback loop was generated "through perceived appearance to self and others, self judgement of that appearance and affect based on that judgement" (Farmer, et. al, 2003, p. 618). The specific role, tied to the individual's sense of identity, then led to meaningful behavior to attain verification of

that identity (Petkus, 1996). In sum, according to Burke (1991), the identity formation process was a control system and the feedback loop had four components:

- A standard or setting (the set of self-meanings);
- An input from the environment or social situation (including one's reflected appraisals, i.e., perceptions of self-relevant meanings);
- A process that compares the input with the standard (a comparator);
- An output to the environment (meaningful behavior) that is result of the comparison. (p. 837).

The output or behavior could be modified to change the input to match the internal standard; "[t]his view gives agency to the individual" (Tsushima & Burke, 1999 cited in Stryker & Burke, 2000, p. 295). This feedback loop process has been demonstrated in Figure 2.

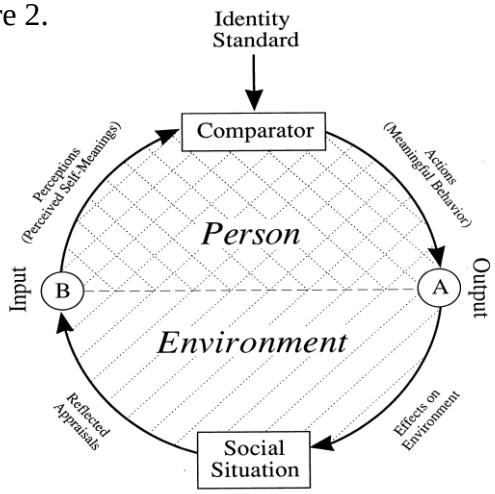

Figure 2. Burke's (1991) Control-System view of the Identity Process: The Cycle of Meaning, p. 838 (re-printed with permission)

With respect to Burke's model, there were two notable points about identity formation. First, individuals were expected to have multiple identities that interacted with

each other based on this system. Second, these identities were initially situation-specific "but over time they are organized into… [a] hierarchy of identities" (Burke & Tully, 1977, p. 883). The most salient identities were at the top of the hierarchy. Identity salience was defined "as the probability that an identity will be invoked across a variety of situations" (Stryker & Burke, 2000, p. 288). Further Stryker and Burke found evidence that higher saliences of identity among other identities resulted in higher behavioral choices connected to that identity.

For example, Serpe and Stryker (1987) found that upon entering college, when students joined organizations that allowed them to act on their highly salient activities associated with their identities, their self-structure remained stable. If students did not attain access to such organizations, the salience in their identities changed. In a longitudinal study, Serpe (1987) followed new students who moved to a small-town university. Serpe demonstrated that when students entered into new social relationships at college, changes with respect to their prior versus new commitments affected the salience of their identities. With respect to Burke's identity process above, Burke and Reitzes (1981) demonstrated when students viewed themselves as sociable, as one dimension of the student identity, that identity did not predict college plans because there was no shared meaning between social identity and academic plans. However, when students viewed themselves as needing to have academic responsibility, as another dimension of the student identity, that identity strongly predicted college plans. They concluded that when there was a shared meaning between identity and behavior, identities predicted behavior.

In this study, the expectation is that the control system of identity formation processes and identity salience can activate individuals' creative identity and sufficient feedback could affect the salience of that identity. In the next section, I have provided a selected literature review on creative personal identity.

Close to seventy years ago, J. P. Guilford (1950), an American psychologist, said, "the psychologist's problem is that of creative personality" (p. 444). Guilford warned a community of psychologists in his presidential address at the American Psychological Association on how little research had been done on the creative aspects of personality and argued the importance of such research for society as creative talent could not be accounted for in terms of high intelligence or I.Q. Guilford's warning did not go unheeded. In the following decades, there has been a substantial increase in creativity studies especially in the last 30 years (Runco, 2004). Nevertheless, creativity has been primarily explored as a system of personality traits and cognitive abilities with less emphasis being given to individuals' creative identity. The scarcity of creative identity research has been attributed in part to "the fact that identities are less stable than personality traits and, by comparison to cognitive abilities, are considered to be a 'background' element in creative production" (Glaveanu & Tanngaard, 2014, p. 13).

In the research literature, creative personal identity (CPI) has been the formal term and was defined as "the belief that creativity is an important element to a person's self-definition; and creative role identity is about how important is being creative in each given position" (Jaussi, Randel, & Dionne, 2007, p. 248). The former definition can be influenced by past experiences and relationships and was the focus of this study, whereas

the latter term has been shown to be influenced by past opportunities in particular domains.

To better understand this definition, Burke's control system view of the identity process was applied to creative identity. The first step was to set a standard or setting (the set of self-meanings). Recall from Chapter 1, when defining creativity, many people associated creativity with the arts or people with exceptional creative gifts and fewer said it was about coming up with original and useful ideas. Arguably, setting such a high or particular standard could dilute any self-meaning set by that individual. That was why in this study it was important to capture how students defined creativity and determined whether this step was a bottleneck in their creative identity activation process.

The second step was an input from the environment or social situation (including one's reflected appraisals, i.e., perceptions of self-relevant meanings). In this step, there were two types of voices providing input: external voice(s) and one's internal voice.

On one hand, external voice(s) could have originated from anyone e.g., parents, siblings, teachers, friends, and even strangers. Initially, such voices could place positive or negative labels on individuals, intentionally or unintentionally. Either label could harm achievement (Dweck, 2016) in that identity. For example, studies by Claude Steele and Joshua Aronson (1995) demonstrated how stereotyping African Americans with having low intelligence significantly impaired their test scores. Even when a person received a positive label, they could have become afraid of losing it, thus, hindering any further learning.

In another example, researchers such as Dweck (2016) also claimed that females have been stereotyped as too trusting of other people's opinions i.e., external voices.

Dweck attributed this feature to males receiving more scolding and punishment in the classroom ultimately becoming numb to people's opinions whereas women were not exposed to that much critical feedback.

On the other hand, each person has generated thousands of thoughts on a daily basis. The internal voice has set out to judge and filter these thoughts. In their research, Michael Ray and Rochelle Myers (1986) named this voice, the Voice of Judgement or VOJ. They claimed that even the slightest decrease in judgement increases individuals' abilities to respond more creatively in various situations. This voice from within is the sum of all voices from past people in one's life.

According to Ray and Myers (1986), Freudian psychology indicated that by age four, children developed a superego which was comprised of learning correct and responsible behavior to distinguish right from wrong. Then, they carried these values into adulthood – unchallenged. These values included "childlike inefficiencies, irrelevant emotions, and distorted impressions of our own capabilities... [along with] conflicting demands" (p. 43) originating from different sources and stages of life. Ultimately, these values set the standard for each person's VOJ. Thus, for an individual's creative voice to come though, one must destroy their VOJ. Even Pablo Picasso said, "every act of creation is first an act of destruction" (p.48).

The third step was a process that compared the input with the standard (a comparator). Ray and Myers (1986) confirmed that one's VOJ could be destroyed with concentrated effort over a period of time. The development of a student's creative identity was a continuing and dynamic process after all. In fact,

> an individual's creativity and personal identity [was] emerging phenomena that [grew] and change[d], dr[ove] one another, and depend[ed] each on the other's development; they appear[ed] to develop at critical points in a child's life, and [were] based on maturity as well as learning experiences. (Albert, 1990 cited in Rostan, 1998, p. 279)

As for comparison tools, on one hand, reflection journals via any medium such as writing, audio recording, or even social media have been used for personal check-ins. On the other hand, 'critical friends' or accountability partners were used to assess individuals' progress from the outside. As the name suggested, a critical friend "was a trusted person who ask[ed] provocative questions, provide[d] data to be examined through another lens, and offer[ed] critique of a person's work as a friend" (Costa & Kallik, 1993, p. 50). This friend i.e., another student, teacher, administrator, and so on was ultimately an advocate for the success of individuals' work.

This leads to the final step which was an output to the environment (meaningful behavior) that was a result of the comparison. Based on the original and varied definitions of creativity, individuals could showcase some form of creative performance from dancing to ideation with minimal judgement and trusted advocates to help their progress. By then, activating the creative identity became an iterative process thus increasing the probability that this identity could be invoked across a variety of situations given the opportunity.

Once the creative identity has been either acknowledged and/or activated, researchers have compared them with other self-concepts. In a literature review focused on the more democratic definition of creativity, studies in the area of creative identity fell

into three categories. First, there was research about the relationship of creative identity and creative performance (Freeman, 1993; Rostan, 1998; Cheng, Sanchez-Burks, & Lee, 2008; Dollinger, Dollinger, & Centeno, 2005). Other studies focused on the antecedents (Karwowski, 2016; Farmer, Tierney, & Kung-Mcintyre, 2003; Karwowski, Lebuda, Wisniewska, & Gralewski, 2013; Hass, Katz-Buonincontro & Reiter-Palmon, 2016) or consequences (Hirst, van Dick, & van Knippenberg, 2009; Jaussi, Randel, & Dionne, 2007) of creative identity or both (Puente-Diaz & Cavazos-Arroyo, 2016). Finally, there were studies that examined the relation between group norms and social creative identity in particular domains (Adarves-Yorno, Postmes, & Haslam, 2006).

Related Studies. Studies related to 'creative personal identity' have only been around for a little over a decade whereas measuring 'artistic identity' has been studied since the 1970s. The review of literature revealed that research on creative identity and related/or concepts has showed up in either the academic domain focused on K-12 or college students particularly in STEM majors or in the workplace domain focused on company employees. In business journals, researchers explored testing or developing creative thinking skills, which correlated with creative behavior not identity. Given that background, related studies that shaped the current study have been discussed in the following section.

In an extension to a study started by Getzels and Csikszenmihali (1976), Freeman (1993) studied the progress of a recently graduated group of art students from the mid-1960s to mid-1980s. He concluded that many individuals did not meet their artistic potential because of mythical and unrealistic expectations about being artistic. Debunking

such myths and differentiating them from the actual creative process actually helped artists to be and continue to feel more creative (Rostan, 1998).

After Freeman, Rostan (1998) conducted a study exploring what children's (ages 8 – 11) perceptions were about being artistic and creative. The children participated in unstructured, open-ended interviews discussing their long-term painting projects and the process of creating art. Albeit a different target audience compared to this study, it's important to note that Rostan's study revealed age-related qualitative changes in skill development and different perceptions based on aspect of the art upon which the children focused.

For example, 8-year-olds focused on color, shape or brushstroke; whereas the 11-year-olds focused on producing detailed replications of the model. Moreover, Rostan's (1998) study illustrated the motivation to work hard at developing a skill, a creative skill in this case, related to their artistic focus and their perception of what it meant to be an artist or creative person. Finally, the children perceived themselves to be artists as they emerged from the act of producing art and not because they thought, they had innate skills. Other studies also arrived at this conclusion that being creative was expressed in terms of incremental learning rather than innate entities (Dweck & Leggett, 1988).

In a 1997 study, Rostan also found that children undergo a "literal" phase during middle school where their art work attempted to mimic reality. If these children have been purposefully doing artistic work before that stage, they became more sensitive to aesthetic properties of art with age (Rostan, 1998).

In more recent studies targeting adults, Jaussi et. al (2007) examined the relationship between creativity at work by exploring creative identity and creative self-

efficacy and problem-solving strategy. Results suggested creative identity explained the variance in creativity at work and operated independently from creative self-efficacy. Also, "the positive relationship between creative personal identity and creativity at work was stronger when individuals applied nonwork experiences in efforts to solve work-related problems" (Jaussi et al., p. 247).

Finally, in a longitudinal study, Karwowski (2016) aimed to test changes and reciprocal relations between creative personal identity and creative self-efficacy after six months and then 20 months in a group of adolescents and adults. In the case of creative personal identity, results over time showed a statistically significant decrease in people aged 25-34, 35-44, and 45-60 and an increase in people aged 15-24 indicating creativity, as an element of self-description declined during late adulthood. The author suggested that this study's outcome could be partially or substantially caused or moderated by the individual's creative achievements; less creative activity may lead to lower creative self-concept. In the next section, I have explained how creative identity theory informed the current study.

Implications for the Study. Three central concepts embedded in identity theory have important implications for this action research project. First, identity theory proponents have been able to describe the creative identity formation process as a means for me, the researcher, to use this information to assist in guiding the project. Moreover, this process has demonstrated the importance of developing one's creative identity and its role in future employment.

Second, identity theory has also revealed barriers and limitations i.e., the external and internal voices that influenced students' creative voice – a step that must be

addressed to ensure growth in creativity occurred. Techniques adapted from Ray & Myers' (1986) empirical studies were introduced into the intervention such as yelling at or ridiculing one's VOJ as if a person or object, so students can remove judgement and rediscover their creative voice. This serves as a means to check their input from the environment with their initial standard. Thus, I dedicated a workshop to explain the identity formation process and its relevant components.

Third, creative personal identity (CPI) theory was an adapted version of identity theory that has informed this study. CPI theory has offered a framework to understand how the identification and activation of creative identity can lead to action, in this case, creative performance. CPI was defined as the belief that creativity was an important element in a person's self-definition. CPI was beneficial in understanding whether students believed creativity was an important part of their self-description or not to identify future training opportunities. One purpose of the innovation was to evaluate the extent CPI was part of their self-description and how CPI workshop training influenced their perceptions about the importance of CPI.

An adapted survey was used that included CPI construct items to evaluate students' perceptions about creativity being an important part of their self-description. Items were adapted from Jaussi's et. al (2007) *creative personal identity* (CPI) scale plus Karwowski's et. al (2013) *self-rated creativity* (SRC) item as part of her *Short Scale of Creative Self* (SSCS).

Mindset Theory

In addition to identity theory, mindset theory contributed to the theoretical foundations for this study. This theory was used as the groundwork to understand the

effects of the beliefs that students held about the nature of their intelligence, but more specifically, their creative abilities.

In the research literature, 'mindset' has been called a type of implicit theory. Sternberg (1985) defined implicit theories as "constructions by people (whether psychologists or laypersons) that reside in the minds of these individuals" (p. 608). He advocated that implicit theories needed to be discovered not invented because they already existed in people's minds. Sternberg was particularly interested in beliefs people held about various traits *other* people possessed including intelligence, creativity, or wisdom. On the other hand, psychologist Carol Dweck was more interested in beliefs people held about *their own* intellectual abilities (Dweck, Chiu, & Hong, 1995). After several years of research on this topic, in 2006, Dweck gave her work a formal name and introduced the term 'mindset' as a type of implicit theory that focused on explaining beliefs about one's own abilities.

Dweck's original research started in the mid-1970s when she challenged the common belief that intelligent people were *born* smart and through empirical studies demonstrated that individuals' perceptions about their intellectual abilities influenced their achievements. In other words, Dweck provided evidence that people who held a *growth mindset* thought intellectual ability was learnable or talents and abilities could be developed with effort and help from others (Dweck, 2016). Mistakes were not viewed as a cause for condemnation, but rather as information to improve, grow, and develop (Hunter, & Scherer, 2009).

On the other hand, people who held *fixed mindsets* believed they had a certain amount of talent and ability with no room to build upon them. Such belief created an

urgency to prove oneself over and over again (Dweck, 2016). Individuals with such mindsets protected an ego identity that did not allow admitting mistakes. Learning, risk-taking, and adapting stopped because perfection ruled (Hunter, & Scherer, 2009).

Dweck's evidence-based research about mindsets changed the learning landscape. Research results showed that mindsets were related to motivational factors, which influenced academic performance and achievement (Dweck & Leggett, 1988). Other research results demonstrated individuals with growth mindsets employed strategies that involved effort and strategy changes, whereas people with fixed mindsets employed more helpless strategies (Robins & Pals, 2002). To understand better mindset theory in the academic domain, I briefly discussed the link between mindsets and academic achievement and the crucial mediating role of effort and failure in the learning process.

Dweck's research on growth and fixed mindsets had been framed as a motivational construct in social psychology (Dweck & Leggett, 1988). It was related to one of the most examined motivational constructs—goal orientation—particularly the development of mastery versus performance goals (Hass, et. al, 2016). Achievement goal theory, which has been focused on goal orientation when individuals were learning a task, served as the reason for competence-relevant activity toward the task (Elliot & Harackiewicz, 1996).

The link between mindset and achievement goal theory was direct and suggested the way a person thought influenced achievement goals, which led to particular behaviors. This behavior was deemed sustainable or unsustainable based on the person's underlying motivation. According to achievement goal theory, there were three types of achievement goals: (a) a learning or task mastery goal to increase competence; (b) a

performance or ego-involved goal to attain positive judgements of competence; and(c) a performance or ego-involved goal to avoid negative judgements of competence.

Thus, the mastery goal approach focused on the *process* of learning, i.e., establishing points that individuals could reach in learning, setting personal stretch targets for further learning, and monitoring individuals' progress over time. Performance goal approaches, however, were point-in-time judgements against standards for their quality with little incentive to exert additional effort.

Merriam-Webster (n.d.) dictionary has defined 'effort' as something produced by exertion or trying. In essence, effort was regarded as a serious attempt to do something – stating no link to intelligence. Dweck's (Dweck & Mueller, 1998) reference to effort in her research pointed to two conclusions. First, people who held a growth mindset improved their ability through effort and changes in strategy(Robins & Pals, 2002). Second, praising students based on effort and not ability demonstrated their continued interest in mastery goals by preferring strategy-related information (Dweck & Mueller, 1998). These conclusions provided a paradigm shift on how students were taught skills. Unsurprisingly, various study results showed growth mindset predicted the development of mastery goals (Burnette, O'Boyle, VanEpps, Pollack, & Finkel, 2013; Dinger & Dickhauser, 2013; Dinger, Dickhauser, Spinath, & Steinmayr, 2013).

Similar to effort, the role of failure played an important part in the link between mindset and goal orientation. Merriam-Webster (n.d.) dictionary defined 'failure' as omission of occurrence or performance. In essence, the definition pointed to 'failure' being when one stopped doing something or did nothing – stating no link to intelligence.

In relation to achievement, Dweck and colleagues posited that for each type of achievement goal mentioned above, individuals produced particular motivational patterns characterized by how they faced failure. People who produced a 'mastery' motivational pattern persisted in the face of failure and attributed success to effort and strategy. Conversely, people who adopted a 'performance' goal orientation withdrew in the face of failure or attributed failure to lack of ability (Elliot & Harackiewicz, 1996).

Each approach demonstrated how people interpreted, evaluated and acted on achievement-related tasks (Dweck, 1986). This also meant that if growth mindsets predicted mastery goals then it could also predict failure approach.

Evidently**,** Dweck's (2016) mindset research served as the foundation for creativity researchers to study the concept of mindsets in relation to creative abilities. Dweck, herself, primed the idea that the theoretical framework of growth/fixed mindsets was transferable to creativity research by referring to a poll of 143 creativity researchers concluding that perseverance and resilience produced by the growth mindset was the top ingredient in creative achievement.

Although the phrase 'creative mindset' had been indiscriminately used in research articles before, creativity researcher Maciej Karwowski (2014) formally defined 'creative mindset' as "beliefs about the stable versus malleable character and nature of creativity" (p. 62). Rooted in Dweck's original work about fixed versus growth mindsets, Karwowski indicated that like intelligence, some people believed creative abilities were fixed and likely to hold the perception that only a few geniuses were truly creative. Other people with growth mindsets believed creative abilities were trainable and could be developed much like other psychological characteristics (Karwowski & Brzeski, 2017).

Related Studies. Dweck, Butterfield, Lamb, & Good (2006) used a neuroscience lab to explore the effects of learning on undergraduates, who through a survey identified themselves as either having a growth or fixed mindset, by measuring waveforms associated with conflict detection and error correction in a test of general knowledge. Results indicated for fixed mindset students as opposed to growth mindset students, particular sections in their brains lit up that were positively correlated with concerns about proving their ability relative to others and suggested a reduced effort to correct themselves in a surprise retest. In other words, they viewed negative feedback as a threat and had little desire to improve where the opposite was true for students holding growth mindsets.

These findings complemented a prior longitudinal study where Dweck, et. al (1995) presented evidence that when people believed that certain human attributes (such as intelligence) were fixed, they tended to comprehend or treat outcomes in terms of fixed traits. For example, "I failed the test because I was dumb" (p, 267). Conversely, when people believed such attributes were malleable, they tended to comprehend or treat outcomes in terms of specific psychological or behavioral mediators. For instance, "I failed the test because of my effort or strategy," or "He stole the bread because he was desperate" (p. 267). Dweck and her colleagues concluded that how individuals chose to think about a task had implications for their personality, motivation, and social perceptions on ultimately achieving their goals.

Consistent with the previous work on implicit theories regarding intelligence, 'mindset' became important to creativity researchers because how people perceived creativity influenced their desire to engage or disengage from creative activities or pursue

careers in creative fields, especially nowadays where there has been an increasingly stronger emphasis in having creativity-related skills (O'Connor, Nemeth, & Akutsu, 2013). Moreover, prior research results showed people with growth mindsets tended to exert more effort and deal better with failure as they saw it as an opportunity to learn and grow, i.e., achieve mastery goals (Burnette, O'Boyle, VanEpps, Pollack, & Finkel, 2013). For others who held a fixed mindset, failure was considered a threat and the risk of failure decreased their motivation with regard to engaging in the activity (Haimovitz, Wormington & Corpus, 2011). Therefore, creativity researchers expected people who held growth mindsets to engage in creative tasks and for fixed-minded people to avoid tasks seen as complex or difficult (Karwowski & Brzeski, 2017).

With respect to identity and mindset, when people did not think that creativity was important in their self-description, they were characterized as having low creative personal identity (CPI) (Karwowski, 2012), and probably would not care whether creativity was malleable or fixed (Karwowski, 2014). Conversely, understanding people with high CPIs became more complex and that was why creative mindsets were tested and measured.

Motivated by previous findings, researchers such as Hass, Katz-Buonincontro, & Reiter-Palmon (2017) examined whether the relation between mindsets and everyday creative behaviors depended on academic domains? The simple answer was, no, but the strength of the relations varied across the five domains selected for his study which included Arts and Humanities, Business, Education, Life Sciences, and Social and Behavioral Sciences. Specifically, results from business student participants demonstrated a negative correlation between fixed mindset and everyday creativity.

Conversely, results from the same students demonstrated a positive correlation between growth mindset and everyday creativity even more so than Art students!

Finally, researchers conceptualized the notion of mindsets as beliefs *related* to creativity, but not *self*-beliefs (Karwowski & Brzeski, 2017). That said, theoretically, mindsets *shape* self-beliefs and, empirically, have been shown to be conceptually related to creative self-efficacy and creative identity in correlational studies (Hass, et. al, 2016; Karwowski, 2014; Pretz & Nelson, 2017).

Implications for the Study. Two central concepts embedded in mindset theory have important implications for this action research project. As discussed above, how individuals perceive the nature of creativity shape their self-beliefs leading them towards having a growth or fixed mindset with regard to learning creative tasks. This issue is critical when training creativity in others. That is why, for this study, I dedicated a workshop illustrating past theory and research about mindset theory to aid student comprehension about their learning approaches.

Additionally, prior studies have demonstrated a correlation between creative identity and creative mindset and creative self-efficacy, which has been discussed in the next section. Thus, particular survey items about creative growth and fixed mindsets, adapted from Dweck (1999) and Karwowski's (2014) research, have been purposefully included in the Creative Perception Survey.

Self-Efficacy Theory

The final theory that informed this study was self-efficacy theory. Much like identity and mindset (implicit) theories, self-efficacy theory has played an integral role in determining performance (Bandura, 1977; Dweck, Chiu, & Hong, 1995).

Psychologist Albert Bandura, defined 'self-efficacy' as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (Bandura & Wessels, 1994, p. 1). In other words, unless people believed they could produce desired outcomes, they had little incentive to act which was important as people guided their lives by their beliefs of personal efficacy (Bandura, 1997). In his seminal paper, Bandura contended the strength of a person's beliefs about their effectiveness in any given task influenced their choice of behavior (Bandura, 1977). Individuals' efficacy expectations or perceived self-efficacy determined how much effort they would exert and how long they would cope with failure or obstacles; stronger perceived self-efficacy led to more effort.

Elaborating on this relation, Bandura (1977, 1997) explained that people feared and avoided threatening situations with which they could not cope; however, if they persisted against these fears, they gained corrective experiences and eliminated defensive behavior, while those who did not persist remained fearful and had self-debilitating expectations for a long time.

Bandura (1977) proposed four main sources of information that influenced efficacy expectations. I briefly explained each source below:

1. *Performance Accomplishments:* This approach was based on personal mastery experiences. More successes in personal experiences led to higher efficacy expectations; conversely, more failures led to lower mastery expectations. Interestingly, enhanced self-efficacy in one setting tended to spread to other settings if feelings of inadequacy existed.

2. *Vicarious Experiences*: This approach was based on the observation of others performing threatening activities with positive outcomes and the resulting belief that the observers could improve performance. Notably, since vicarious experiences relied on social comparison of abilities, this approach tended to result in weaker efficacy expectations than personal mastery experiences and made people more vulnerable to change again.
3. *Verbal Persuasion:* This approach was based on leading people to believe that they could persist through threatening activities which previously overwhelmed them. Like vicarious experiences, this approach resulted in weaker efficacy expectations than personal mastery experiences. However, it was noted that verbal persuasion could enhance self-efficacy during corrective actions. Thus, individuals who were already persuaded they could perform the task, may have needed provisional aids to guide them to success. In other words, the best way to use verbal persuasion was when it was accompanied by some form of initial personal accomplishment or else the persuader could easily be discredited if failure occurred.
4. *Emotional Arousal:* This approach was two-fold. From one angle, emotions such as fear and anxiety debilitated performance. Overexposing the person to the threatening activity assisted in overcoming emotional arousal as well as mastery performances. From another angle, emotional arousal served as an energizing function or motivational tool to cope with fear and anxiety.

Undoubtedly, these sources of information that built self-efficacy depended on contextual factors including social, situational, and temporal circumstances. Moreover,

Bandura (1977) preceded Carol Dweck by claiming that the influence of performance depended on whether individuals attributed their success to ability or to effort. If the task was easy, the person attributed their success to ability, but if their task required a lot of effort, the person attributed their success more so to effort and less to ability. The ideal situation in building self-efficacy would be tackling progressively harder challenges and persisting in them against fear and failure. Nonetheless, these sources outlined potential barriers that could disrupt perceived self-efficacy, which served as a guide in this study.

In the creativity literature, creative self-efficacy was defined "as the self-view that one has the ability to produce creative outcomes" (Tierney & Farmer, 2002, p. 1138). When creativity was being considered, some people perceived creative performance as a threatening and arduous task especially if they had not built prior mastery in a particular line of work. As a result, they were less likely to choose activities or settings that required them to be creative.

Related Studies. Empirically, researchers reached similar conclusions based on Bandura's self-efficacy theory (Tierney & Farmer, 2002) suggesting higher creative self-efficacy was related to greater creative performance. Additional study results demonstrated creative performance was associated with creative self-efficacy at the individual level (Tierney & Farmer, 2004) as well as the team level (Shin & Zhou, 2007) and among diverse industries such as education, operations, manufacturing, financial, and insurance services, as well as, research and development (Beghetto, 2006; Gong, Huang, & Farh, 2009; Carmeli & Schaubroeck, 2007; Jaussi, Randel, & Dionne, 2007; Shin & Zhou, 2007; Choi, 2004; Tierney & Farmer, 2002, 2004).

Finally, creative self-efficacy was considered a malleable trait that fluctuated with changes in self, task, or social context-related factors (Tierney & Farmer, 2011) and was influenced by past performance accomplishments, vicarious experiences, verbal encouragement, and emotional states (Bandura, 1994, 1997). Even with such fluctuations and influences, empirical study results demonstrated that creative personal identity had a positive relationship with creative self-efficacy although they conceptually operated as two distinct constructs (Jaussi et. al, 2007).

Implications for the Study. Three central concepts embedded in self-efficacy theory have important implications for this action research project. First, Bandura's self-efficacy theory has provided an understanding that cognitive processes such as perceived self-efficacy associated with creativity play an important role in the acquisition and retention of behaviors. In the intervention, I dedicate a workshop to perform introductory tasks to explain and rebuild preliminary creative efficacy expectations that emphasizes original thinking and embraces failure in the creative process.

Second, I incorporate survey items in the Creative Perception Survey to capture student's perceptions regarding their beliefs on how good they are in coming up with original ideas, having a good imagination, solving problems, and developing ideas for others.

Last, during the face-to-face student interviews, I uncover prior barriers based on the sources of information outlined by Bandura that have encouraged or discouraged students with respect to engaging in creative behaviors.

CHAPTER 3

METHOD

> There is no doubt that creativity is the most important human resource of all. Without creativity, there would be no progress, and we would be forever repeating the same patterns.
>
> — De Bono, 1992, p. 169

In this chapter, I have explained the methodology used in this action research project. After providing a brief recap of the purpose and source of inspiration of the study, I have provided the following: a description of the setting, participants and role of researcher; a summary of the innovation, a description of the data collection sources and analysis procedures; and a review of efforts taken to enhance the study's validity and trustworthiness.

The purpose of this action research study was to evaluate the perceptions of freshmen business students about creativity and explore the influence of creativity workshops on their personal, everyday creative activities. Recall from Chapter 1, this incoming class was projected to graduate into and enter a workforce with over 50% knowledge work type jobs that would require them to be social, emotional, creative, or relational. Drawing from educational psychology and management literature, the creativity workshops were designed to educate and develop students' creative capacity in business, via interactive exercises, by learning predominant definitions of creativity and

theories related to creative self-beliefs—including creative mindset, creative identity and creative self-efficacy.

The inspiration to frame the workshops around creative belief theories came from an article by Hass et al. (2016) who found that how people perceived their creativity was related to their creative performance. Thus, before anyone can be trained on any skill such as creativity, it was beneficial to investigate their beliefs and knowledge about that subject matter, first. Based on researchers' grouping of creative belief theories, I explored each theory extensively to incorporate interactive exercises that appealed to my target audience. The article also offered a preliminary outline of a creativity survey that served as the basis of my retrospective pre- and post-innovation surveys.

Research Questions

This study was guided by the following research questions.

1. How do Thunderbird undergraduate students define creativity? What are specific reasons that inhibited or motivated them to practice their creativity?
2. What are their perceptions about their own creative mindset, creative identity, and creative self-efficacy?
3. How and to what extent did participating in creativity workshops influence Thunderbird students' perceptions of their creative identity, creative self-efficacy, and creative mindsets?

Setting

The study took place during fall 2018 at Thunderbird School of Global Management at Arizona State University's (ASU) West campus. Thunderbird is a top-ranking management school specializing in international business, which offered

specialized bachelor's and master's degrees in global management and international trade. The main Thunderbird campus in downtown Phoenix served as the hub for graduate students whereas ASU's West campus held classes for bachelor's degree students in far, northwest Phoenix. Thunderbird also has global offices in locations such as Switzerland, U.A.E., Japan, and Russia providing corporate training to global organizations.

Recall from Chapter 1 that Thunderbird's freshmen students have been required to take a 1-credit, first-year seminar course at the beginning of their program. The students in this study were registered in one of two sections of this course in fall 2018. The purpose of the first-year seminar was to introduce all new Thunderbird students to the ASU West campus and Thunderbird program resources, culture, and opportunities.

Adapted from the original ASU freshmen seminar, the class served as a beneficial starting point to infuse creativity inside the bachelor's degree program. Given the fact that ASU has been ranked the most innovative school among national universities for the third year in a row by U.S. News & World Report (2018), it became evident and important to teach creativity earlier on so that students could benefit from ASU's resources to implement their own innovations.

Participants

The participants of this action research study included 10 freshmen students, all 18 years old, and me, the action researcher. Due to the small sample size, all students were invited to participate in the study. Among this sample, eight students identified themselves as Hispanic, one as Caucasian, one as Asian, one as African-American, and one as Middle Eastern. Half of the students were female, and the other half were male

students. Of the 10 students, eight had been accepted in Thunderbird's Bachelor of Global Management (BGM) and two students had been accepted into Thunderbird's Bachelor of Science in International Trade (BSIT) program. Notably, these bachelor's degree programs began in the fall 2015 after the school's merger with ASU. Much like the master's degree students, admitted bachelor's degree students were bilingual or had the desire to pursue a foreign language. These students loved to travel and were eager to learn the nuances of working for multinational companies.

Role of the researcher

As the guest instructor of the course, I acted as both researcher and practitioner. My primary role as a researcher was to collect and analyze qualitative and quantitative data. This included collecting individual post-workshop feedback surveys, as well as, a comprehensive Creative Perception Post-Intervention Survey after all three workshops were completed, administering a Creative Perception Retrospective Pre-Intervention Survey, and conducting semi-structured interviews. The primary role as a practitioner was to facilitate each workshop and provide student support and resources.

At Thunderbird, my role has been to recruit masters' degree students for the past five years. Therefore, I had no familiarity and relationship with these students prior to the study. The program chair and main instructor believed this intervention was important because they saw creativity as a key learning outcome of the bachelor program.

Intervention

The intervention for this action research project was based on all three theoretical perspectives–creative identity, creative mindset, and creative self-efficacy–the C3 innovation. The C3 project was an innovation designed to (a) evaluate students'

perceptions about their personal everyday creativity and (b) empower them with tools to enhance their understanding about being creative. As mentioned, the C3 project was inspired by the study from Haas, et. al (2016) where they measured fixed and growth creative mindsets, and its relation to creative self-efficacy and creative identity to create a model to obtain a more complete picture of people's self-perceived creative competencies. The researchers concluded that these constructs were separate but interrelated constructs and those students with high creative self-efficacy tended to endorse growth mindsets. Their findings served as the basis for the professional development creativity workshops, which were intended to increase students' creative performance over the time of their bachelor's program and beyond. The innovation included three phases: educate, survey, and interview, as detailed below.

Educate phase. During the Educate phase, I facilitated a workshop each Friday for three weeks in September starting with creative mindset, then creative identity, and finally creative self-efficacy. The participants were asked to learn definitions, concepts and tools for each workshop topic, and work on related homework to aid their comprehension. Also, at the end of workshops 1 and 2, participants were asked to provide reflection essays about things they learned from the workshops.

Survey phase. During the Survey phase, the participants were initially asked to submit a feedback survey through Qualtrics software program after each workshop to share how useful and effective the workshop was from their perspective. After the workshops were completed, the participants were asked to respond to two online surveys also through the Qualtrics software program. The first assessment was a Creative Perception Post-Intervention Survey, offered immediately after the third workshop,

capturing to what extent all three workshops helped students understand creativity and its related creative self-belief theories. The second survey offered one week later, was a Creative Perception Retrospective Pre-Intervention Survey capturing their perceptions about the same topics before coming to the workshops.

Interview phase. During the Interview phase, I interviewed all 10 students after the workshops were completed, but between the Creative Perception Post-Intervention survey and Creative Perception Retrospective Pre-Intervention Survey. The initial design was to conduct these interviews after all surveys were completed; however, due to fall break and my work schedule, I had to complete the interviews before the last survey. The semi-structured interviews were conducted in a classroom at ASU West and recorded using my laptop voice recording software program. The purpose of the 30 minutes interviews was for me to qualitatively understand (a) how students defined creativity for themselves, (b) perceived vs. real limitations and/or inhibitors of everyday creativity for students, and (c) examples of students' personal everyday creativity before or during college to inform future work on professional development creativity workshops.

Instruments and Data Sources

For the C3 innovation, I utilized an action research study that employed a convergent parallel mixed method research design. A mixed method research design was "a procedure for collecting, analyzing, and 'mixing' both quantitative and qualitative methods in a single study … to understand a research problem" (Creswell, 2015, p. 537).

In this approach, the qualitative and quantitative data have equal priority during data collection. Then, each data set was analyzed separately, the results of which were brought together to determine convergences, divergences, or a combination of both.

Action research has been defined as "any systematic inquiry conducted by teachers, administrators, counselors, or others with a vested interest in the teaching and learning process and environment for the purpose of gathering information about how their particular schools operate, how they teach, and how their students learn" (Mertler, 2016, p. 4). This approach allowed teachers to study their own students and assessments to improve their quality and effectiveness.

Qualitative data. I gathered four types of qualitative data. First, I asked students to respond to three qualitative questions from each post-workshop feedback survey conducted in class. The following questions were asked: *"*1. List three adjectives that spontaneously come to mind describing X Workshop; 2. What did you like about this workshop? [Open-ended question]; 3. How has this workshop influenced your ideas about creativity? [Open-ended question]*".* See Appendix A for complete list of questions.

Second, I asked each student to email me their reflection essays after the first (Creative Mindset) and second (Creative Identity) workshop. From the first workshop, the students wrote a 1-page essay about the workshop theory/concepts (reasons why creativity is important, growth or fixed mindset, or neuroplasticity) and a letter to their future self and shared snap shots from their Instagram or Facebook posts about three things for which they were grateful in life. From the second workshop, the students wrote a 1-page reflection about the workshop theory/concepts (Voice of Judgement or Voice of Persistence) and continued to share snap shots from their Instagram or Facebook posts about three things for which they were grateful in life.

Third, ten semi-structured student interviews were conducted to help answer the research questions. Two examples of interview questions were: "How do you define

creativity?*"* and "What supported/fostered your creativity in that situation?" See Appendix B for complete list of interview questions. Interviews lasted up to 30 minutes and took place in the school at a time that did not interfere with instruction. The interviews were digitally recorded and then transcribed.

Fourth, a researcher journal was maintained throughout the innovation to capture thoughts, feelings, ideas for improvement, and committee feedback. During her daily commute, the researcher would use iPhone's voice recording app and at work and home, the researcher would type up notes on her personal computer. These tools assisted with research reflection and thought progression.

Quantitative data. The researcher gathered three types of quantitative data in class. First, responses to one quantitative question was gathered from each post-workshop survey. The question was: "On a scale from 1 (not very satisfied) to 5 (totally satisfied), please evaluate your satisfaction having taken part in this (all) creativity seminar(s)." See Appendix A for complete question list.

Second, the Creative Perception Post-Intervention Survey was administered in class immediately after the final workshop. The 29-item survey served as a tool to evaluate students' perceptions about the following constructs (a) creative self-efficacy, (b) creative identity and (c) the degree of growth mindset beliefs and (d) the degree of fixed mindset beliefs. Students provided their responses on a 6-point Likert scale ranging from *Strongly Agree = 6, Agree = 5, Slightly Agree = 4, Slightly Disagree = 3, Disagree = 2,* to *Strongly Disagree = 1*.

Two examples of the first construct assessing creative self-efficacy were, "I am good at coming up with new ideas," and "I have a good imagination." Two examples

representing the second construct assessing creative identity were, “My creativity is an important part of who I am,” and “My ability to be creative is an important reflection of who I am.” Examples of the third construct that assessed growth creative mindset beliefs were, “I can learn to be creative,” and “If I want to be more creative I have to work at it.” The final construct assessed fixed creative mindset beliefs and examples of items included, “My creativity is something about me that I cannot change very much,” and “I have a certain amount of creativity and I really cannot change it.” See Appendix D for the Creative Perception Post-Intervention Survey.

Third, the Creative Perception Retrospective Pre-Intervention Survey was a 24-item survey administered one week after the Creative Perception Post-Intervention Survey to evaluate the same constructs. The point of a retrospective pre-intervention survey was to allow the students to think back about their original notions about creativity and its constructs before the workshop training then respond to similar questions.

Two examples of the first construct assessing creative self-efficacy were, “Prior to the workshops, I believed I was good at coming up with new ideas,” and “Prior to the workshops, I believed I had a knack for further developing the ideas of others.” Two examples representing the second construct assessing creative identity were, “Prior to the workshops, I believed, in general, my creativity was an important part of my self-image,” and “Prior to the workshops, I believed I was a creative person.” Examples of the third construct that assessed growth creative mindset beliefs were “Prior to the workshops, I believed anyone could develop his or her creative abilities,” and “Prior to the workshops, I believed creativity required effort and work.” The final construct assessed fixed creative

mindset beliefs and examples of items included, “Prior to the workshops, I believed I had a certain amount of creativity and I really could not change,” and “Prior to the workshops, I believed some people are creative, others were not—and no amount of practice could change their creativity.” See Appendix E for the Creative Perception Retrospective Pre-Intervention Survey.

With respect to the use of the retrospective pre-intervention assessment process, traditionally, researchers have utilized pre- and post-intervention assessments to measure some knowledge or attitude of participants in study before and after a treatment (Creswell, 2015). However, in a previous cycle of action research, I encountered an issue. I administered a similar version of the Creative Perception Post-Intervention Survey to a sample of graduate level business students. The majority scored themselves as very creative, but had questions on the definition of creativity and the interpretation of some survey items. After further literature review on surveys, I realized that participants may have exhibited response-shift bias resulting in underestimation or overestimation of perceptions of these constructs because they did not have a good understanding of the knowledge or skill that the intervention intended to affect (Lam & Bengo, 2003).

Response-shift bias occurred because participants used different sets of standards or did not have clear criteria by which they were evaluating themselves. Yet, the reality was that after participants were exposed to the activities in the intervention and gained new knowledge, they may re-evaluate their initial viewpoint because they had new or different set of criteria and/or definitions, which may have affected post-test results. Thus, to maximize validity and reduce response-shift bias, a retrospective pre-test was

administered one week after a post-test to gauge the participants' knowledge or attitude based on a consistent standard of measurement (set of criteria).

In Table 1, I summarized the complete list of qualitative and quantitative methods used in this study.

Table 1

Summary of instruments and data sources

Type	Data Tools	Detail
Qualitative	Post-Workshop Feedback Survey	• Week 1, 2, & 3 • In class • 5 questions (3 Qualitative Qs) • 10 students • Matched Participant Responses based on unique identifiers (first 3 letters of mother's name + last 4 digits of telephone number)

Qualitative	Student Reflection Essays	• Week 1 & 2
		• Inside class
		  ○ Wk 1: Letter to Future Self
		• Outside class
		  ○ Wk 1 Topic: Importance of creativity, Growth/Fixed Mindset, Neuroplasticity+3 gratitude posts on Instagram/Facebook
		  ○ Wk 2 Topic: Voice of Judgement/Voice of Persistence+3 gratitude posts on Instagram/Facebook

Qualitative	1:1 Semi-Structured Interviews	• Week 4 • 10 students • 8 questions
Qualitative	Researcher Journal	• Ongoing • Field Observations; Study Reflections; Doctoral Committee Advice
Quantitative	Post-Workshop Feedback Survey	• Week 1, 2, & 3 • In class • 5 questions (1 Quant Question) • 5-point Likert-scale

		• 10 students • Matched Participant Responses based on unique identifiers (first 3 letters of mother's name + last 4 digits of telephone number)
Quantitative	Creative Perception Post-Intervention Survey	• Week 3 • In class • 29 items • 4 constructs • 6-point Likert-scale • Matched Participant Responses based on unique identifiers (first 3 letters of mother's name + last 4 digits of telephone number)
Quantitative	Creative Perception Retrospective Pre-Intervention Survey	• Week 4 • In class • 24 items • 4 constructs • 6-point Likert-scale • Matched Participant Responses based on unique identifiers (first 3 letters of mother's name + last 4 digits of telephone number)

Procedure and Timetable for Implementation

I prepared the workshop materials needed for the intervention during spring 2018 and surveys for data collection in summer 2018. During both times, I had continuous conversations with the main course instructor on how to re-arrange the existing curriculum to incorporate my three workshops. We also had to wait until the beginning of the fall 2018 semester to finalize the intervention dates because we had to coordinate the dates of additional guest speakers with the course instructor of the other class section.

The innovation occurred during the fall 2018 semester. The first-year seminar course was 14 weeks and sessions were only 50 minutes long. To manage time wisely, I received permission from the course instructor to come to class one week prior to kicking

off the workshops to introduce myself and distribute the recruitment and consent letters.

In Table 2, I have presented the timeline and procedures of study.

Table 2

Timeline and Procedures of the Study

Timeframe	Action	Procedures
Jan – Mar	Designed workshops and adapted surveys	▪ Conducted informal feedback sessions with graduate and undergraduate students, staff and faculty about workshop design
Feb & Aug	Contacted main instructors of First-year seminar courses	▪ Asked course instructor on best dates to conduct innovation ▪ Explained doctoral program + innovation ▪ Outlined tentative workshop dates
August	Finalized intervention resources	▪ Purchased finger puppets to represent Voice of Judgement /Voice of Persistence ▪ Purchased fidget toys to help with ideation game
September	Recruited student participants	▪ Introduced myself and the purpose of study ▪ Offered the opportunity to participate in the study ▪ Distributed recruitment and consent letter (Sept 7)
Sept – Oct	Intervention	▪ Facilitated three 50 min workshops ▪ Sessions: Sept 14, 21, 28
September	Data Collection: Post-Workshop Feedback Surveys	▪ Administered post-workshop feedback survey after each session in class
September	Data Collection: Student Reflection Essays	▪ Gathered homework in Week 1 & 2 – students emailed me directly
September	Data collection: Creative Perception Post-Intervention Survey (online)	▪ Administered survey after Week 3 workshop & post-workshop feedback survey in class

October	Data Collection: 1:1 Semi-structured interviews	▪ Conducted 9/10 of interviews face-to-face at on-campus library and 1 via Zoom ▪ Recorded interviews via laptop audio recorder
October	Data Collection: Creative Perception Retrospective Pre-Intervention Survey (online)	▪ Administered survey on Week 4 in the beginning of class
Aug - Dec	Data Collection: Researcher journal entries	▪ Jotted down field notes and situations that occurred
December	Data Analysis	▪ Transcribed audio recordings ▪ Conducted qualitative analysis ▪ Conducted quantitative analysis

Data Analysis Procedures

My quantitative data analysis included reliability analyses of the various constructs prior to conducting a repeated measure analysis of variance (ANOVA) of the post- and retrospective, pre-intervention survey data to determine whether there were any changes in scores after the intervention. I utilized Qualtrics online software to administer the surveys and SPSS for data analysis.

I analyzed qualitative data using Saldaña's (2015) approach. I conducted initial coding on student reflection essays, post-workshop qualitative survey responses and 1-on-1 semi-structured interviews. To come up with initial codes, I read all the qualitative data a few times to become familiar with the material. Then, I employed the questions to map out initial code names. For example, in the interviews I created initial codes such as CR Def for creative definitions or CR BENE for creative benefits. Then I created sub-categories for each code such as CR SUP POS for creative support positive versus CR

SUP NEG to identify quotes that explained who positively or negatively supported the student's creative development. Gathering initial codes and its related sub-codes helped me create categories which where aggregated into themes and from which assertions were developed. I utilized HyperRESEARCH to list and apply recurring initial codes throughout my qualitative data analyses.

Mitigating Threats to Validity and Building Credibility and Trustworthiness

In this action research study, I considered certain threats to validity. First, I considered 'history' i.e., specific events that were not part of the intervention that could have affected my student participants (Smith & Glass, 1987). To mitigate the 'history' threat, I facilitated the workshops and administered the surveys during back–to- back class sessions. Second, I considered 'mortality' i.e., the possibility of having students drop out of the study (Smith & Glass, 1987). To mitigate the 'mortality' threat, I received assistance from the main course instructor who made attendance mandatory during these sessions. Finally, I considered 'response-shift bias' (Lam & Bengo, 2003) as discussed in the prior section. To mitigate it, I administered a retrospective pre-intervention survey to ensure participants understood the definitions and employed the same criteria as they made their responses.

To build validity and trustworthiness, I initially utilized an adapted version of a validated creativity survey instrument from the Hass et al (2016) study. I also used 'triangulation' i.e., the "process of corroborating evidence from different individuals, types of data, or methods of data collection" (Creswell, 2015, p. 259). In my case, I triangulated multiple data sources including surveys, interviews, and student journal entries, and compared the outcomes of these data during my analysis. Additionally, I

incorporated ‘thick, rich descriptions’ i.e., “to describe the setting, the participants, and the themes of the qualitative study in rich detail” (Creswell & Miller, 2000, p. 128). Finally, I constantly checked my codes and memos to ensure clear definitions of the codes (Greene, 2007).

CHAPTER 4

DATA ANALYSIS AND RESULTS

We cannot teach people anything; we can only help them discover it within themselves.

— Galileo Galilei

Results from this study are presented in the following two sections. In the first section, I present the results from quantitative data. Then I share results from the qualitative data in the second section. Quantitative data included post- and retrospective pre-intervention Creative Perception survey as well as results from Q1 from the post-workshop feedback survey. Qualitative data comprised of 10 post-intervention semi-structured student interviews, student reflection essays for Week 1 and 2, and open-ended responses to questions 2 – 4 from the post-workshop feedback survey.

Results for Quantitative Data

Quantitative data results have been presented in three sections: reliabilities for the scales of the survey, (b) ANOVA results for the survey, and (c) results for student responses to the question about their level of satisfaction from the post-workshop feedback surveys.

Reliabilities. First, I conducted Cronbach's reliability analyses for all four constructs. The purpose of conducting a reliability analysis was to ensure the construct(s) yielded consistent scores (Green & Salkind, 2016). In this case, alpha coefficients were utilized to display the assessment of consistency in scores among equivalent items. Retrospective Pre- and Post-test reliabilities for creative self-efficacy, creative identity,

fixed mindset, and growth mindset indicated the reliabilities were all acceptable with a range from .69 to .95. All the reliabilities except Growth Mindset post-test exceeded .70, which indicated the instruments were reliable. See Table 3 for all of the reliabilities.

Table 3

Reliabilities for Freshmen Students' Retrospective Pre- and Post-test Assessments of Creative Self-efficacy, Creative Identity, Fixed Mindset, and Growth Mindset (n = 10)

Cronbach Alpha Assessment		
Variable	Retrospective Pre-test	Post-test
Creative Self-efficacy	0.77	0.90
Creative Identity	0.74	0.83
Fixed Mindset	0.95	0.86
Growth Mindset	0.92*	0.69*

*Note—The same item was deleted from both assessments to increase the reliability.

Repeated measures analysis of variance (ANOVA). Following the reliability analyses, I conducted a multivariate, repeated measures analysis of variance to determine whether there were differences in the retrospective pre-test and post-test scores for creative self-efficacy, creative identity, fixed mindset, and growth mindset. The overall test was significant, multivariate F (4, 6) = 8.80, $p < 0.012$ with partial $\eta^2 = .85$, which was a very large within-subjects effect size based on Cohen's criteria (Olejnik & Algina, 2000).

Subsequently, I conducted individual follow-up repeated measures ANOVAs for each of the dependent variables. The effect for creative self-efficacy was significant, F (1, 9) = 15.31, $p < 0.005$, with a very large within-subjects effect, partial $\eta^2 = 0.63$. Thus, Creative Perception Retrospective Pre-Intervention and Creative Perception Post-

Intervention Survey scores differed significantly for creative self-efficacy. See Table 4 for the means and standard deviations of the retrospective pre-test and post-test scores.

Table 4

*Freshmen Students' Retrospective Pre- and Post-Intervention Mean Scores & Standard Deviations**

Variable	Retrospective Pre-test	Post-test
Creative Self-efficacy	3.37 (1.07)	5.03 (0.87)
Creative Identity	3.70 (1.24)	4.96 (0.81)
Fixed Mindset	3.13 (1.71)	2.25 (1.25)
Growth Mindset	4.10 (1.33)	5.27 (0.48)

*Note—Standard deviations were presented in parentheses.

Similarly, the effect for creative identity was significant, $F(1, 9) = 10.63$, $p < 0.01$, with a very large within-subjects effect, partial $\eta^2 = .54$, which indicated retrospective pre-test and post-test scores differed reliably. Next, the effect for fixed mindset was not significant, $F(1, 9) = 2.32$, $p < 0.17$, which indicated retrospective pre-test and post-test scores did not differ significantly. Finally, the effect for growth mindset was significant, $F(1, 9) = 8.76$, $p < 0.017$, with a large within-subjects effect, partial $\eta^2 = 0.49$. Thus, retrospective pre-test and post-test scores differed significantly for growth mindset.

Means for creative self-efficacy, creative identity, and growth mindset demonstrated substantial increases for the freshmen students as noted in Table 4. Means for these three measures increased between about 1.2 and 1.6 points. These changes represented considerable growth on a 6-point scale. By comparison, the mean for fixed

mindset decreased 0.88 points, which was anticipated because the intervention was developed to increase growth mindset thinking and decrease fixed mindset thinking.

Descriptive statistics for student level of satisfaction of workshops. After each workshop, I conducted a post-workshop feedback survey (see Appendix A). On a scale from 1 (Extremely dissatisfied) to 5 (Extremely satisfied), I asked students how satisfied they were with the overall workshop. I wanted to know if they liked how I had designed each workshop to inform future iterations.

For Workshop 1–Creative Mindset, the mean was 4.3 and standard deviation was 0.82. For Workshop 2–Creative Identity, the mean was 4.9 and standard deviation was 0.32. For Workshop 3–Creative Self-efficacy, the mean was 4.8 and standard deviation was 0.63. Overall, students were satisfied to extremely dissatisfied with the workshops.

Results for Qualitative Data

Qualitative data results have been presented in three main sections**: (**a) student interviews, (b) student reflection essays, and (c) student open-ended responses to questions 2-4 on post-workshop feedback surveys. For each section, a table was used to present the themes, their associated theme-related components, and an assertion. Quotes were used to support the claims.

Student interviews. Following the completion of the workshops, I conducted semi-structured interviews. All 10 interviews were audio recorded, transcribed, and coded. Then, I reviewed the codes and aggregated identified codes into larger categories and then theme-related components from which five final themes emerged. Table 5 displayed the themes from the interviews and their corresponding theme-related components and assertions.

Table 5

Theme-Related Components, Themes, and Assertions Based on Interviews of 10 Freshmen Students Following the Intervention

Theme-related components	Theme	Assertions
1. Acknowledging that creativity was a process 2. Creativity started with oneself 3. Creativity extended beyond current boundaries	Varied, but similar definitions of creativity	1. Freshmen students' definitions of creativity demonstrated an underlying assumption that everyone was creative.
1. Identifying as a creative person 2. Mindset 3. Confidence	Belief system before college	2. Freshmen students affirmed that previous courses and/or extracurricular activities helped them determine whether they were creative or not.
1. Positive support 2. Negative support (Inhibitors)	Support system before college	3. Freshmen students communicated that certain sources of support helped them or inhibited them from being creative.
1. Detecting growth vs. fixed mindset in self and others 2. Building creative confidence 3. Differentiating the voices they listened to (self or others) 4. Expanding the definition of creativity helped students	Benefits of the intervention	4. Freshmen students indicated workshops provided a framework and the vocabulary to identify as a creative person and to articulate their creative side.

	identify themselves as creative in other settings		
1.	Gratitude journal posts on Instagram/ Facebook were not easy	Challenge after the intervention	5. Freshmen students alluded to a challenge after the implementation of the creativity workshops.

Varied, but similar definitions of creativity. Assertion 1 stated, "*Freshmen students' definitions of creativity demonstrated an underlying assumption that everyone was creative.*" Three theme-related components comprised the theme that led to Assertion 1: (a) acknowledging that creativity was a process, (b) creativity started with oneself, and (c) creativity extended beyond current boundaries.

Acknowledging that creativity was a process. During the post-intervention interviews, I asked the freshmen students to define creativity in their own words. Learning that creativity was a process was one of the key learning outcomes of the workshop training. One student said,

> "I feel like creativity is something that can be formed or at least can be learned if [an individual is] put into the correct environment depending on what kind of environment you [are] put into. Sometimes that creativity can't really flourish or can't even really exist in some aspects. So, I do believe creativity is something that is naturally within everyone, but it does take time to reveal."

Another student reiterated the same thought saying, "I think it's something that can certainly be worked on, and it's not something you're born with, but something you just pick up as you go on in life." In other interviews, two students expanded on the

details of creativity as a process by saying, “creativity, I guess I can define it as the way a person can express themselves. It can be either in a big or small way, depending—but, the creativity can progress or change depending on a person willingness to try to do more.” The other student added, “creativity is being open-minded no matter the situation. That’s what it is to me.”

Creativity started with oneself. It was important that students recalled that creativity started at the individual level and not the collective level. One student affirmed that thought and said, “creativity is pretty much anything that creates, making ideas, making new plans, anything that’s your own. Like your own original content of planning, and pretty much can base off of everything.” Much like the other student, this student emphasized ideation and said, “Creativity for myself … just the ability to generate new ideas and express your identity, I guess.” Another student focused on the personal level and stated, “Just doing whatever you think is you, really. Just doing something unique, not following other people.” A fourth student offered, “basically, [creativity is] about something new that people noticed and the things that you created.”

Creativity extended beyond current boundaries. As creativity expert, Sir Ken Robinson (2016) reminded us, creativity was applied imagination. Two students expressed this definition instinctually in their own words. The first student shared, “my definition of creativity is the ability to see beyond what is in front of you, so your imagination.” The second student echoed this thought when she said, “In my own words, I would say it is like the boundaries were … the part where you take the boundaries away from getting out of the box of your imagination and how you would come up with ideas.”

Belief system before college. Assertion 2 suggested, "*Freshmen students affirmed that previous courses and/or extracurricular activities helped them determine whether they were creative or not."* Three theme-related components comprised the theme that led to Assertion 2: (a) identifying as a creative person, (b) mindset, and (c) confidence.

Identifying as a creative person. In this section of the interview, I directly asked each student if they believed they were creative and listened for examples of their personal creative endeavors. Eight of ten students believed that they were creative already in high school yet, notably, several students qualified their statements like this, "Yeah, when I wanna be, I think. When I'm passionate about something" or "Yeah, I feel creative to some extent. It depends on the situation. I can be…sometimes I consider myself not so creative, and that's sometimes it depends on the situation."

These eight students shared their creative endeavors such as being an acrylic painter, writer, graphic designer, and dancer to acting, conducting marketing presentations, finding synergies among multiple courses and giving memorable nicknames to classmates. Despite the amount of creative talent in the class, the two students who did not feel creative provided an important contrast. Notably, both students spoke about having strict parents. When one student for whom English was his second language shared about whether he was creative, he said,

> Not really. When I call my parents, [they] tell me to do whatever they want, I like a little bit did what I told them. So, that's kind of prisoner like and just do whatever they want. And I didn't say anything about my own ideas.

The other student claimed,

> I was raised in a very traditionally strict household where being the daughter of the family, the youngest daughter on top of that, there's always that level of push for what you want but be safe. …. And so, growing up in that family, there was always that high expectations that always did push me to have higher expectations for myself, but there's always those limitations of like oh, you know, we don't really want you to do that or, you know.

Mindset. Some of the students discussed certain setbacks they had in their creative endeavors, yet they did not stop pursuing alternative activities, which demonstrated a growth mindset before the workshop training. One student shared the story how an art teacher gave her a 'C' on an assignment for not sticking to the guidelines when she declared,

> Yeah. So, I was very mad. So, that was like a little … I'm still mad about it, because it was such a good piece, and she gave me a C on it. Are you kidding me? .... She was the only art teacher at the high school. So, I dropped it and I entered ceramics.

One of the students who did not think he was creative before started to learn the guitar in college away from his parents' reach. He related the challenge of adopting a growth mindset while battling with his current fixed mindset when he said,

> Yeah, Yeah. And when I am starting to help stuff I would like to do, and I am trying to tell myself to focus and try not to give up on it. And I start to play guitar, my mind knew, and I started to think about other stuff instead of just work hard, just to study.

***Confidence*.** Because the students were only freshmen, I asked them if they felt creatively confident based on their past high school classes or extracurricular activities. One student introduced the concept of 'build up over time' when she described becoming creatively confident as she said,

> I'm pretty confident in my creative confidence. It's something that I had to develop on my own time. It's not something you can really take one class and suddenly you're like oh my god yes. This is exactly who I am. Freshman year back in high school, I was very shy. I couldn't talk to anyone. I never spoke out in class. And then, I went through experiences where I was like I can't really do this anymore. I have to talk. I have to say something. Then when I entered sophomore year in high school, I completely did a 180. I was like I can't do this anymore, because I had so many thoughts running through my head, but I was just never confident enough to speak it.

Another student brought up situational creative confidence because she felt confident doing art but not confident in other courses or hobbies when she said,

> because I was interested because, again, to me creativity was art, and I've always been very interested in that, I always thought I was creative. In other areas I didn't think [I am] as a creative, I wasn't confident about it.

The most interesting comment from the interviews was when one student said she was more confident when she did not know people around her. She said,

> Probably in classrooms where I don't know anyone. I feel I can be more creative because no one is expecting something. They don't know me. But in classes where I know the people, there's a lot of familiar faces, I feel more intimated

because they have a certain image of me. And I feel if I am too creative, they'll be…they don't expect it. So, that's probably when I see a lot of familiar faces, I don't feel that I can be as creative as I want to.

Support system before college. Assertion 3 stated, "*Freshmen students communicated that certain sources of support helped them or inhibited them from being creative*." Two theme-related components comprised the theme that led to Assertion 3: (a) positive support and (b) negative support (inhibitors).

Positive support. During the interview, I asked students what or who previously motivated them to be creative. This question was related to the voice of persistence exercises, which were conducted to make students aware of the voices/thoughts that were influencing their creative processes. Several students mentioned family, peers, school, and teachers/mentors in their responses. Then, there were outlier responses such as animals and culture, which were not the normative responses.

One student remarked, "Yeah, my parents have supported me, and even, also, my teacher. But, mainly, I would say my family." By comparison, another student claimed her parents never supported her creative side, but influence came from others, "in my creativity I have support from my friends once they judge, in a way, my painting. And also, from teachers about when I first began."

A recurring theme was teachers who allowed students to choose the topics on which they wanted to focus, afforded opportunities for more creativity. For example, one student mentioned,

> Because, with art class, the teacher would allow us to pick whatever project we wanted to do, like the classwork. With the drawings or the sketch that I would do, it would allow me to express what I think or what I feel on it.

Similarly, another student said, “in my high school experience, our teachers are pretty open on what different projects and things we were doing, so we got to usually pick what we wanted to do.” In another scenario, a student suggested a teacher encouraged her creative pursuits when she was struggling with restrictions in art class when she claimed, “Well, my teacher he saw some of my artwork because I didn’t take an art class, but I’d always be drawing in the hallway. He’s like, ‘You should take graphics if you don’t like art class.’ So, I did.” Finally, school curriculum also helped foster creativity for students as illustrated in the following statement,

> I would probably go with … it was a project through … it was like an entrepreneurship project for a marketing class. And that was when I got the most creative because I was out of my comfort zone. And my group I worked with…they were pretty creative as well.

With respect to the outliers, one shy student found comfort in adopting a cat to develop creative confidence when he stated,

> Well, when I was in middle school, I was pretty shy, like I don't have kind of friends. And also, when I’m trying to make some friends, like when I start to like cats, it’s because I feel lonely and want someone to be with me.

Another student spoke about being in a non-judgmental class environment where her teacher encouraged her to put more of herself in the project when she said,

> Oh, probably the comfort I felt with the people because I felt they were creative as well and they wouldn't be judging. Also, my teacher at the time…he was pretty supportive about going out of the box and thinking more into putting your personality into and not just being simple.

She continued, "I felt the most creative because there was nobody [that] expected anything from you and it was just what you thought about that's what you put on paper."

Negative support (inhibitors). I also asked students what or who previously inhibited their creativity. This question was related to the voice of judgement exercises, which were conducted to make students aware of the disconfirming or negative voices/thoughts that were influencing their creative processes. Once again, a number of students mentioned family, peers, school, and teachers/mentors in their responses.

In one case, the family placed strict guidelines on career options for the student when she said,

> That level of strictness that comes into play. It was really a trend. I kinda had to my parents are very Middle Eastern, very orientated, you know, family. You only have four options in life. You can either be an engineer, a doctor, a lawyer, or a disgrace. There's nothing in between.

In another case, the family believed that playing a musical instrument was a waste of time for the student as noted in his response,

> Well, an example with that was when I was younger I tried to learn guitar, and my parents wouldn't really allow me because they thought it was kinda a waste of time. They said you are there to like … it's better for you to just focus on the

classes that you have right now and not anything else, so I couldn't learn at that time I learned, until I'm independent now, on my own.

In another response, a student pinpointed his mother when he said,

> My parents, not both of them, but my mom is a very traditional person. Innovation is just not her thing. She likes to set a world that works, that's been proven, instead of something new. I feel like that kind of hampers or limits creativity because you can come up with an awesome new idea, but in her mind, if she hasn't seen it already be effective, in her mind it's not good because it's not traditional, it's not what she's used to seeing.

In many instances, students complained how teachers had too many restrictions in their art or writing courses that would take the fun out of assignments and unfortunately gave the students lower grades. One student mentioned,

> It's actually kinda ironic. The most I've ever been restricted in creativity was art class. You're always told, 'Be creative. But here are some guidelines.' You can't do this. You can't do that. You have to have a certain concept and rules to follow.

She continued with her response, "Yes, I was in art class. And [my teacher] said, 'Well, your artwork's amazing, but I can't give you an A because you didn't follow the guidelines the specific set of rules.' And that's not being creative."

In another instance, one student related how her teacher criticized her work when she said,

> And she [the teacher] said that there were too many shapes…. She was like, 'the hands didn't follow the requirements I stated for you.' And I'm like how could you call yourself an art teacher and like this creativity, you know, this

> environment that's meant for creativity and yet put a limitation and not only put the limitation but also scold me for it by giving me 70?

To their dismay, some students also had teachers who did not want students to go above and beyond but, rather be basic or simple in their assignments. For instance, one student claimed,

> An example would be in my Spanish class we had a project, we had to explain about cooking, and I thought about actually cooking and making a video, instead of a PowerPoint, and he said 'No, just keep it to the minimum, you don't have to do all that.'

Similarly, another student mentioned, "Sophomore year of English probably. We didn't really have … we just literally got to read books and then had to respond to it. There's nothing creative about it."

Finally, some students admitted to dealing with the infamous negative self-talk as one student said,

> I mean, anything that wasn't writing or acting, I just felt always very restricted because me personally, like before this class at least, I always thought that like new things, I just wouldn't be good at them, instead of trying and like expanding my creativity.

Another simply stated, "Yes, yeah, sometimes I give up pretty easily for some stuff."

Benefits of the intervention. Assertion 4 stated, **"***Freshmen students indicated workshops provided a framework and the vocabulary to identify as a creative person and to articulate their creative side. They also recommended this course be taught again and at the advanced course levels*." Four theme-related components comprised the theme that

led to Assertion 4 including (a) detecting growth vs. fixed mindset in self and others, (b) building creative confidence, (c) differentiating the voices they listened to (self or others), and (d) expanding the definition of creativity helped students identify themselves as creative in other settings.

Detecting growth vs. fixed mindset in self and others. During the interview, I asked students how the creative mindset workshop influenced them. Eight of 10 students mentioned the distinction between growth vs. fixed mindset during the interviews. They offered several applied examples. For instance, one student suggested,

> When I looked around at people and I saw how they handled things, [it] proved to me what mindset they had whether it was fixed or growth ... So, after that workshop and seeing those lessons, I began acknowledging and seeing those perspectives, beforehand that I would never [have] realize[d].

Another student said,

> I think more fixed … yeah, I judge myself all the time. Like in my mind, I say the worst stuff. Saying stuff, you seem impossible to do it. But, I just need to overcome and try to do it and overcome it to say, yes, I could. So, I'm more like a fixed.

Another student identified his mindset as a growth mindset and described it as, "Growth. Always, there's room for improvement, as good or as bad as I can be. There is always room for improvement. I always do better." Although other students also identified themselves as more growth mindset oriented, they also admitted they sometimes caught themselves having a fixed mindset orientation in real-time while in one student's case, there may be a delay in identifying their fixed mindset:

> "Yeah, but it takes me awhile to notice that I would be in a fixed mindset. I would be like, I really thought I couldn't do this. But then after I do it, I look back on it and I think it's silly. But I don't catch myself in the moment like, I don't inspire myself. I would have to go look for another source of motivation or inspiration, or whatever."

Finally, for one student attending this workshop reaffirmed her training in Growth/Fixed mindset from high school: "I'm definitely growth. Back in my freshman/sophomore year freshman year I did really good in school. But sophomore year I kinda went downhill. And it wasn't because I didn't understand the classes. I just wasn't motivated or anything like that. And it felt very limited, and that's when I joined the growth mindset committee at my school."

Building creative confidence. During the interviews, I asked the students how the creative self-efficacy workshop influenced them. One student admitted that she had the courage to be an entrepreneur now when she claimed,

> It showed me exactly how much potential I had. For example, the business pitch you had us do where we had to come up with a product in a minute and then present it to the class. In all honesty, when you were in the middle of telling me that, in my head I was like I can't do that. That's not possible. You're really, you're gonna put me through this little ordeal, but in the process of doing it and then getting up there, half of that little speech was kind of BS to an extent, but it worked …. so, I think that workshop really did prove something to me where now I'm oh my god, I'm not gonna be a lawyer, I'm going to be a marketer. I'm going to be an entrepreneurship. So, it was nice though.

After completing the exercises, another student explained, “If somebody would have proposed that to me in a hypothetical sense, that I could come up with a business idea and a presentation in three minutes, I would have had to disagree.”

In the 1, 2, 3 game presented during a workshop, I emphasized the importance of posture when a mistake was made – not to look sullen but celebratory because mistakes were part of the creative process. During the interview, one student suggested, “So, the 1, 2, 3 game really helped because at the first part, whenever I messed up, I would lean against the desk. I would be like, no, I just messed up. But after you taught us to celebrate, I was thinking less about messing up and more about, it doesn’t matter.”

Another student also shared her change of mindset when celebrating mistakes when she recalled, “When I made a mistake I was the one that was laughing and stuff. And, I saw the big change where I didn’t wanna make the mistakes when we were like, ‘Ta-da.’ That was a big difference how I changed the amount of mistakes I made. So, that’s where I saw the most impact.”

Differentiating the voices they listened to (self or others). During the interviews, I asked them if and how the voice of judgment or voice of persistence exercises helped them. One student claimed,

> I mean, I’m usually positive about my creativity, but it really helped me to just shut out the voice of judgment because I would usually just like let it talk and let it talk, and I guess it would build up by the end. So yeah, it helped me shut that out.

Similarly, another student said,

> It was really helpful because it allowed me to think based on my voice of judgement or my voice of perspective, like how has it come to shape the way I currently am, and it allowed me to think more the choices I make, why I've been making them.

One student who was heavily involved in sports offered a fresh perspective when he stated,

> Not really. Like, I said I've been in football, so ... when somebody says something to me it doesn't really matter to me, since I've been in football because there's a lot of stuff that people just they're kind of negative. So, I'm kind of used to it. Yeah. I don't really listen to it, really.

Another student expanded her response to include other exercises we did i.e., to choose an object and connect it to your identity then sell it.

> The voice of judgment and stuff like that I realized sometimes people don't even say something to me. It's more of my inner thoughts it's my own voice of judgment that restrains me from being creative …, it's me … [anticipating] their outcomes [expectations] not really them actually telling me something. That's what I kind of got out of it. And then I also got to explore a little bit of my identity when I chose the object the specific object I chose. It was really easy to connect it to myself based because I chose it. That was really helpful to me.

Expanding the definition of creativity helped students identify themselves as creative in other settings. In this section, I wanted to know if the expanded and more democratic definition of creativity i.e., as the *process* of imaginative activity fashioned so as to produce outcomes that are both original and of value (NACCCE, 1999) shared in

Workshop 1 influenced their perception about their own creative identity or spaces they deem creative. Here are two students' responses:

First student said, "My perspective changed in a way that to me now creativity is not just paint and doing music, it's more about everyday situations. So, in classes, how do I write my notes, how do I speak with people. Besides that, before I thought it was just like, art, that that was creative, anything else was normal." Another student elaborated, "just because the definition of creativity is so flexible or versatile, that it's not a specific set of, or a specific bullet-point of things that makes you creative. Everybody is creative in their own little ways, you think about it. So, that kind of opened my eyes. It's like, oh, I'm creative."

Challenge after the intervention. Assertion 5 stated, "*Freshmen students alluded to a challenge after the implementation of the creativity workshops.*" One theme-related component comprised the theme that led to Assertion 5 indicating (a) gratitude journal posts on Instagram/Facebook were not easy.

Gratitude journal posts on Instagram/ Facebook were not easy. In the Creative Mindset workshop, the students learned that sharing things for which they were grateful, helped build and maintain a growth mindset. Instead of asking the students to write three posts in a word document, I recommended using a more creative platform - either Instagram or Facebook - to share those things for which they were grateful and even include pictures. During their interviews, I received mixed reactions towards this exercise. The students shared only reactions to the *action* of posting on a social media platform rather than directly giving feedback about how expressing their gratitude

influenced them. For example, one student was worried about how others might think of her at first, when she said,

> I kinda enjoyed it more than the first time I felt kinda silly like, 'Oh, we're gonna have to post this on Instagram. People are gonna text me and stuff and see if I'm okay.' By the second time I felt pretty confident whatever I didn't really care. I kinda enjoyed it more.…. by the second time I feel it was a piece of cake. It was actually nice. I feel more… I could write more in the captions. I felt more normal. It was more not like assignments it was more like, 'Oh, this is fun.'

Conversely, another student said, "Yeah, they're okay. I've done it before in classes before, they're ok."

A third student was eager to do it but also wanted to see and discuss other students' posts, when she said,

> I think the Instagram post was a very good idea. I don't know if this would be you would probably have to go through something to show what other people posted in class, because I was very interested. I posted mine, but I have no idea what other people posted that were taking the same ideas that I was the same workshop. Like is it affecting everybody in the same way? How do they see it? Maybe not show them because I know they could be personal pictures, family and friends, but maybe talk about them, or somehow know how it is affecting others.

Finally, with respect to this matter, I encountered my first 18-year-old who claimed she did not have any social media account. Thus, she did not do the homework. Nevertheless, in her interview, she relayed a story from her high school years and said,

> Well, the Instagram post I did have one back in high school in philosophy of religion where we had to do that. She was like, 'Well, you guys are gonna be leaders someday. You gotta learn how to post things appropriate things and how to be positive about it.' So, for a whole semester in high school we had to post things.

Student Reflection Essays

I asked students to reflect after the workshops for Week 1 & 2 only. Recall in the first week, I covered Dweck's Growth and Fixed Mindset theory using lecture and a YouTube video, and I shared another YouTube video about the brain's neuroplasticity capability. In addition, I facilitated an in-class exercise to write a letter to their future self, and how posting three things for which they were grateful on a weekly basis on Instagram and voicing positive affirmations can develop or maintain a growth mindset. I received nine submissions.

Students shared unique perspectives – on hope, fear, new beginnings away from home, proving others wrong about their assumptions by being persist, being uncomfortable about sharing part of themselves, and being grateful for having too many things to be grateful about. Some excerpts have been provided in the following section.

One student wrote,

> The idea of posting something that you are grateful for was good however, I do that already; not necessary[il]y for me but for the people I care for. I am also very aware of how negative I can be. I like to look at the worst that can happen in any situation but in reality, [that] is the best possible scenario.

A second student scribed, “At times my affirmations were shot down and I was told that ‘you won’t succeed’ and if we’re being perfectly honest, hearing those words distressed me, but it also fueled my drive to prove them wrong.” A third wrote,

> Creativity for me has always stemmed from wanting to be different and not following others who want to tell me what to do and I think this has benefited me in life no matter the scenario because it makes me true to myself.

A fourth student offered, “I haven’t learned much since I am familiar with these and have my own mindsets. But I never bring them or mention these or my gratitude publicly which made some of these challenges a bit odd for me.” A fifth student recorded,

> In […] class you were assigned to post about things you are grateful for and with this assignment, it was hard for you to choose. This tells you right there just how much you should love life and realize that everything is great.

Another wrote, “This letter was a really fun experience in my opinion and I would recommend it to anyone because sometimes you realize as you’re writing your letter, that you are doing something you really don’t want to do.”

This next submission was the most difficult to read. The student demonstrated real courage when she to wrote, “I am currently 18 and want to read this at 22 years old, if I am still alive…. I have no skills or abilities. I am useless and a waste of space.” In the continuation of her letter to her future self, she told her ‘self’, “Do not settle for less in the future. Do not hide your feelings anymore. Have a voice. Be powerful.”

Examples of Instagram gratitude posts following the Week 1 Workshop have been presented in Figure 3 on the next page.

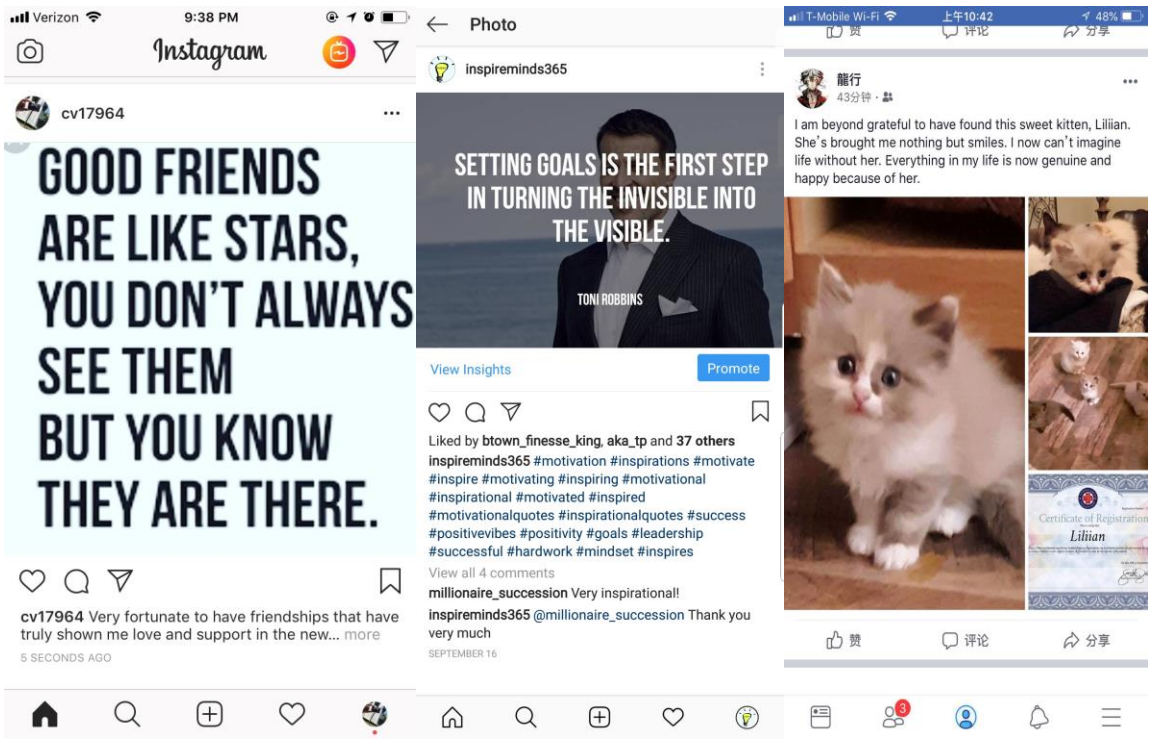

Figure 3. Post-workshop Week 1 Instagram Gratitude Posts Samples

In the following section, I provided information related to students' reflections on the Week 2 Workshop. Recall in the second week, I covered how identity was formed, how identity was used in ideation, how easy it was to make up excuses, and how to differentiate between Voice of Judgement (VOJ) and Voice of Persistence (VOP). The students were asked again to post gratitude statements on Instagram again. I received five submissions.

Once again, students shared unique perspectives – on how there were too many platforms for Voices of Judgement (VOJ) nowadays, the role anger could play in motivation as a result of VOJ, on how the creativity workshops clarified the role positive and negative voices can play to influence motivation, and finally on how simple it can be to shut out VOJ.

One student wrote, “As someone [who is] part of the technological advancing generation, voices of judgment now come in new variations. From social media to societal expectations, you can’t escape judgement, but you most certainly can shut it out.” A second noted the motivational aspect when she wrote,

> My personality is one that has a tough time with forgiving and forgetting, because I just internalize my anger and use it as fuel to be better than the expectations set on me. This is a good thing on one hand I get things done by staying motivated, but in the long run it’s bad because I struggle to forgive…

A third scribed, “[The creativity workshop] also made it easy to discover the type of person and creativity that I have and even what creates motivation based on negativity or positivity types of thinking.” Finally, a fourth student thoughtfully wrote,

> As we conducted the voice of judgment and voice of persistence exercise I realized how there is nothing to lose at all really. The worst thing that can happen is your idea gets rejected, but on the other hand there is always a possibility of people loving it. I felt the exercise was applicable to my life because I realized it is that simple to destroy my negative thoughts and judgements as easy as laughing at them, even though it seems silly.

Examples of Instagram gratitude posts following the Week 2 Workshop have been presented in Figure 4 on the next page.

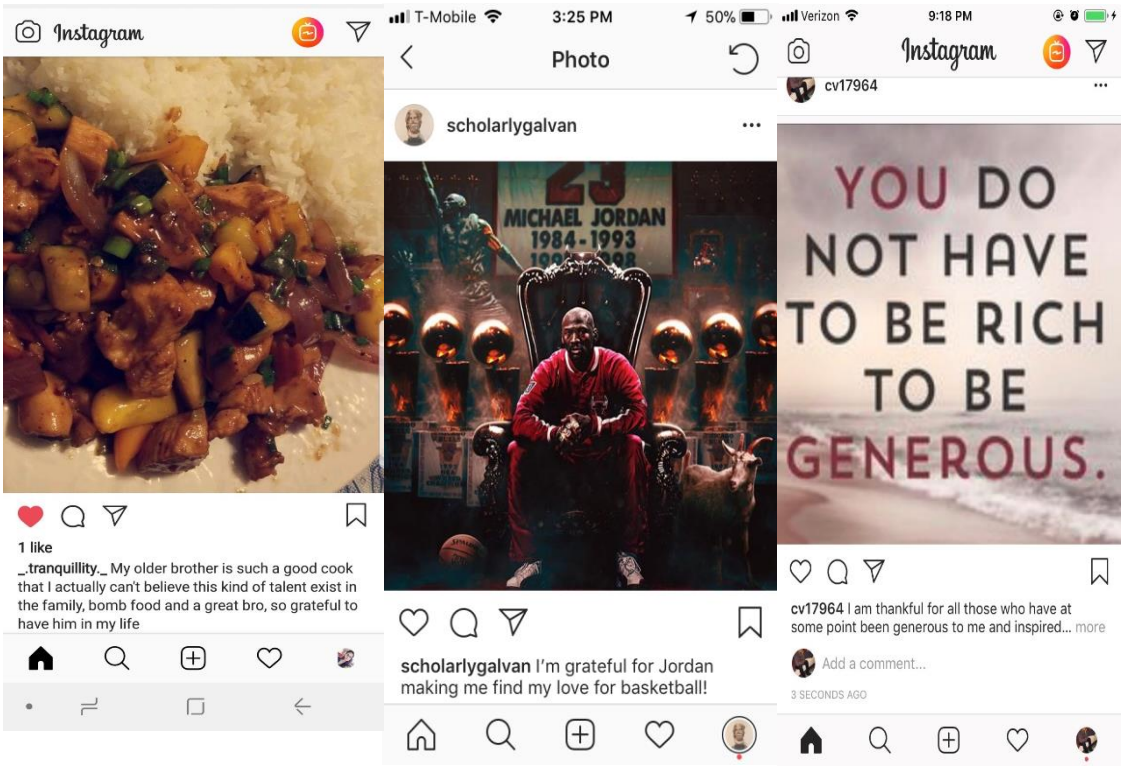

Figure 4. Post-workshop Week 2 Instagram Gratitude Posts Samples

Student Post-Workshop Feedback Survey (Qualitative Portion)

It was important for me to retrieve immediate feedback after each workshop while the information was still fresh in the students' minds to inform my work. I used Qualtrics, an online survey platform, so the students could easily and quickly provide their responses via phone or laptop. The survey was included both quantitative and qualitative responses. Qualitative results have been summarized below.

For Question 2, I asked the students to list three adjectives that spontaneously came to mind describing each workshop. Overall, the students believed that the workshops were fun, creative, interactive, helpful, and entertaining. I summarized the 10 adjectives in Table 6 on the next page.

Table 6

Top 10 Adjectives from All Workshops (aggregate word count of related terms)

#	Top 10 Adjectives	Count
1	Fun	12
2	Creative (creativity, creative, create, creative economy)	9
3	Interactive	5
4	Helpful	4
5	Entertaining	3
6	Interesting	3
7	Innovative (innovative, innovation)	3
8	Eye-opening	2
9	Intriguing	2
10	Cool	2

In Question 3, I asked what they liked about that week's workshop. Overall, there was a consensus that the workshops provided a positive, eye-opening, and interactive experience. For example, for Workshop 1: Creative Mindset, one student wrote, "I was able to understand how I think about myself." Another student scribed, "The tips, that there are about things that we can do and that can help us bring our creative side out." Another recorded, "I liked how interactive she was!!" A final student penned, "Shows how powerful the human brain is and what mindset and positive thinking can do for you."

For Workshop 2: Creative Identity, one student really captured the essence of the workshop lesson by writing, "I like that it made me think of who I am and why I am the way I am." A second student wrote, "It really made us explore a different perspective in terms of identity." Recall that one best way to manage Voice of Judgement or Voice of Persistence was to objectify it. Based on this direction, I passed around finger puppets – one with an ugly face representing VOJ and the other with a pretty face representing

VOP. It was not a surprise when one student penned, “I loved the gifts which made it very visual to understand the concept” and another wrote “I liked the interaction with the objects!” Finally, a fifth student wrote, “Very fun and a new experience.”

During Workshop 3: Creative Self-efficacy, students were totally immersed in hands-on activities, so the following claims reflected that focus. For example, one student scribed, “It was very hands on and showed us specific examples of what the PowerPoint said.” Another offered, “Most of it was composed of the students making their own ideas.” A third wrote, “I liked that I got to learn a new way of being positive.” There were also smaller comments, as well. Various students wrote, “It was fun and engaging,” “Pitching the ideas,” “Everything,” “The small group activities,” and finally, “The passion held by the instructor.”

In Question 4, I inquired how the workshop had influenced their ideas about creativity. The main take-aways that came from student comments across the three Workshops, respectively, were that they learned to (a) consider creativity as an important skill, (b) reflect more about their creative selves especially on the voices to which they listen, and (c) develop more creative confidence. Below are quotes to support the key take-aways:

For example, for Workshop 1: Creative Mindset, one student wrote, “It has inched me forward to having a more creative mindset and acknowledgment of creativity in the real world.” A second scribed, “It's made me more aware that it is a skill and we need to explore our creative side more.” A third wrote, “[It] makes me want to put more effort in creativity.”

For Workshop 2: Creative Identity, one student scribed, “[It] made me realize that I subconsciously chose my identity at as early as 4 years old.” Another student wrote, “This is workshop has helped on ways to deal with the voices and helps realize who the voices of judgement are in my life.” A third student wrote, “[It] made me think about who I am as a person.”

For Workshop 3: Creative Self-efficacy, one student wrote,

“The workshop has helped me learn more about what I am capable of completing [becoming].” A second penned, “It has helped me overcome my fears.” Finally, another wrote, “It showed that you can come up with an idea in 3 minutes. [It] really doesn't take long.”

Taken together, students demonstrated their appreciation for and what they learned in the workshops. It was clear that students appreciated the content of the workshops and that they benefitted from the workshops with respect to becoming more creative.

CHAPTER 5

DISCUSSION

> "The teacher is of course an artist but being an artist does not mean that he or she can make the profile, can shape the students. What the educator does in teaching is to make it possible for the students to become themselves."
>
> — Paulo Freire (Horton, 1990)

The purpose of this action research study is to evaluate business students' perceptions about their personal everyday creativity and to examine the influence of infusing creativity training in their freshmen seminar course. As a practitioner and action researcher in education, I conducted this study as an initial step to elevate the importance of a main part of being a human being–our creativity. Recognizing that there is no explicit creativity training at the bachelor's degree level even though it is a program learning outcome, I re-envisioned a freshmen seminar course by incorporating applied creative self-belief learning components.

This revised curriculum embraced the findings from educational psychology perspectives such as mindset, identity, and self-efficacy that have influenced management theories and applied practice. To better understand students' perceptions and comprehension of creativity, I framed the study with the following questions:

1. How do Thunderbird undergraduate students define creativity? What are specific reasons that inhibited or motivated them to practice their creativity?
2. What are their perceptions about their own creative mindset, creative identity, and creative self-efficacy?

3. How and to what extent did participating in creativity workshops influence Thunderbird students' perceptions of their creative identity, creative self-efficacy, and creative mindsets?

Using these research questions to guide my efforts, I administered, collected and analyzed quantitative and qualitative data from students and me. In this chapter, I examine the study's quantitative and qualitative data in relation to each other. Next, I describe how different theoretical perspectives account for various results. Then, I share limitations of the study, implications for practice and research, and personal lessons learned.

Complementarity and Integration of Quantitative and Qualitative Data

According to Green, Caracelli & Graham (1989), 'complementarity' is an approach in a mixed methods study that allows qualitative and quantitative data "to measure overlapping but also different facets of a phenomenon, yielding an enriched, elaborated understanding of that phenomenon" (p. 258). In this study, both data sets show high levels of complementarity. The intent to obtain complementary data is illustrated by the use of a qualitative interview and student reflection essays and quantitative surveys to measure participants' perception about their personal creativity based on four constructs i.e., creative self-efficacy, creative identity, growth mindset and fixed mindset as well as post-workshop feedback surveys to measure the effectiveness of the intervention.

The Creative Perception Retrospective Pre- and Creative Perception Post-intervention surveys scores indicate an increase in creative self-efficacy for the freshmen students. The qualitative data from the post-intervention interviews confirm this conclusion as well. For example, multiple students echo thoughts similar to this quote,

> I was like, wow, we just did that [business pitch] in three minutes. And that really helped, too. That was a big realization moment. I was like, wow, that's insane. I would have never thought that. If somebody would have proposed that to me in a hypothetical sense, that I could come up with a business idea and a presentation in three minutes, I would have had to disagree.

Similarly, students' sense that creativity is part of their identity increased after the intervention. The average score increased by 1.26 points. The students elaborate during their interviews and share how the expanded definition of creativity helps them feel creative everywhere. One student claimed,

> My perspective changed in a way that to me now creativity is not just paint[ing] and doing music, it's more about everyday situations. So, in classes, how do I write my notes, how do I speak with people. Besides that, before I thought it was just like, art, that that was creative, anything else was normal.

The quantitative data shows a decrease in students' fixed mindset which unlike other constructs is a very positive outcome. By decreasing 0.88 points after the intervention, the students indicate they understand what a fixed mindset is, *and* that learning is a process and there is always room to grow. During their interviews, students got a handle of detecting fixed versus growth mindset as one student reports,

> When I looked around at people and I saw how they handled things, proved to me what mindset they had whether it was fixed or growth…. So, after that workshop and seeing those lessons, I began acknowledging and seeing those perspectives, beforehand that I would never realize.

Much like the first two constructs, students report an increase in their growth mindset conceptually and experientially. The mean score after the intervention increases by 1.17 points. Nine of 10 students identify themselves as having a Growth Mindset during the interviews providing comments such as, “Growth. Always there’s room for improvement, as good or as bad as I can be. There is always room for improvement. I always do better.”

In aggregate, the students report a score of 4.67 out of 5 indicating their overall impression of all three workshops was quite positive. Qualitatively, the students think that the workshops provide a positive, eye-opening, and interactive experience. This student’s quote captures the essence of other statements, “I like that it made me think of who I am and why I am the way I am.”

With respect to the workshops’ influences on their overall personal creativity, the main take-aways from student comments are that they have learned to consider creativity as an important skill, reflect more about their thoughts on creativity, especially on the voices they listen to, and develop more creative confidence.

In sum, the qualitative and quantitative data complement each other quite well. The survey results provide a quick and efficient snapshot of their growth whereas the student interviews and post workshop testimonies provide a richer, more detailed explanation on why and how students find the workshops beneficial. Indirectly, given the small sample size, both data sets also depict the type and level for each student with respect to their tendency to be growth oriented or have a fixed mindset, which has implications for future work with students.

Explanation of Results

The explanation of results is presented in three sections. In the first section, I describe how Burke's identity theoretical framework can be used to explain students' survey and interview results with respect to the increase in creative identity salience for freshmen students. In the second section, I discuss Dweck's mindset theoretical framework and how it accounts for the increase in their comprehension and detection of growth and fixed mindsets in their survey and interview results. Finally, I discuss Bandura's self-efficacy theoretical framework and how it is related to increases of creative self-efficacy observed in the results. To support the discussion, I elaborate on students quotes and interviews from the qualitative and quantitative results explained in the previous sections and chapters.

Increases in creative identity salience for freshmen students. Based on the data, it is clear that freshmen students increased their creative identity salience from the surveys as well as the qualitative interviews. Thus, Stryker & Burke's (2000) identity theory helps us to understand that the most salient identities are at the top of the hierarchy of multiple identities and will be invoked across a variety of situations which leads to more behavioral choices connected to that identity. For example, one student says,

> My perspective changed in a way that to me now creativity is not just paint[ing] and doing music, it's more about everyday situations. So, in classes, how do I write my notes, how do I speak with people. Besides that, before I thought it was just like, art, that that was creative, anything else was normal.

Another student elaborates,

> just because the definition of creativity is so flexible or versatile, that it's not a specific set of, or a specific bullet-point of things that makes you creative. Everybody is creative in their own little ways, you think about it. So, that kind of opened my eyes. It's like, oh, I'm creative.

Although the study focuses on only ten students, during their surveys, students' average scores of creative identity construct increased by 1.26 points, which reflects students increasing acknowledgement of their creativity in survey statements such as "My ability to be creative is an important reflection of who I am," or "My creativity is an important part of who I am." This result serves as a promising start for larger sample populations in future iterations of the study.

Also, recall Burke's (1991) identity formation process helps us to understand that each individual receives input from internal and external sources in a feedback loop process that affects the saliency of a particular identity. Creative identity researchers such as Ray & Meyers (1986) extend this understanding in the creative process. The students demonstrate they acknowledge and distinguish between these voices and are aware of their effects on their creative identity. For example, one student claims,

> I mean, I'm usually positive about my creativity, but it really helped me to just shut out the voice of judgment because I would usually just like let it talk and let it talk, and I guess it would build up by the end. So yeah, it helped me shut that out.

Similarly, another student offers,

> It was really helpful because it allowed me to think based on my voice of judgement or my voice of [persistence], like how has it come to shape the way I

currently am, and it allowed me to think more the choices I make, why I've been making them.

Increases in detecting growth and fixed mindset by freshmen students. Many students allude to their mindset before and after entering college during their interviews. Teachers, peers, family members are among the top list of people that help them adopt a mindset in their educational and extracurricular endeavors. The majority of the students had not heard or knew the difference between growth and fixed mindsets. After the intervention, looking back, they acknowledge that they unknowingly adopt different mindsets depending on the context in which they find themselves. Going forward, the students acknowledge they can better detect between the different mindsets in themselves and others. For example, one student mentions,

> When I looked around at people and I saw how they handled things, [it] proved to me what mindset they had whether it was fixed or growth…. So, after that workshop and seeing those lessons, I began acknowledging and seeing those perspectives, beforehand that I would never realize [before].

Moreover, students acknowledge that adopting a growth mindset takes time. For example, one other student identifies his mindset as a growth mindset and describes it as, "Growth. Always there's room for improvement, as good or as bad as I can be. There is always room for improvement. I [can] always do better."

Dweck's (2006) mindset framework helps us understand this phenomenon because examining the beliefs of one's own abilities leads to specific performance outcomes. Dweck's original research on intellectual abilities offers evidence that people who hold a *growth mindset* think intellectual ability can be learned or talents and abilities

can be developed or grown with one's effort and help from others whereas people who hold *fixed mindsets* believe they have a certain amount of talent and ability with no room to improve upon them.

Given the context of the study is an academic setting, it is important to link mindset theory with Dweck's (1986) previous research on academic achievement. The link between mindset and achievement goal theory indicates that the way a person thinks influences achievement goals, which leads to particular behaviors. This behavior can be sustainable or unsustainable based on the person's underlying motivation. According to achievement goal theory, there are three types of achievement goals: (a) a learning or task mastery goal to increase competence; (b) a performance or ego-involved goal to attain positive judgments of competence; and (c) a performance or ego-involved goal to avoid negative judgements of competence (Elliot & Harackiewicz, 1996, p. 461).

A mastery goal approach focuses on the *process* of learning i.e., establishing points that individuals can reach in learning, setting personal "stretch targets" for further learning, and monitoring their progress over time. Performance goal approaches, however, are point-in-time judgments against standards for their quality with little incentive to exert additional effort.

Based on this foundation, researchers like Karwowski (2014) adapt Dweck's theories in the creative ability realm and find parallel evidence. Creativity is a process with a goal of mastery. Similar to their interviews, the surveys depict students adopting more of a growth mindset after the intervention than a fixed one as the average growth mindset score increased by 1.17 points whereas the average fixed mindset score decreased by 0.88 points. This is another small win given the small sample size.

Increases in creative self-efficacy among freshmen students. Based on the aggregate survey data and sample size, the students' scores on creative self-efficacy increase by 1.66 points. The interview data provides additional insight into this increase. During their interviews, the students share building their creative self-efficacy is not an overnight endeavor. Throughout high school, they had friends, family or peers who serve as sources to motivate or inhibited them with respect to building their creative self-efficacy, which ultimately affects their personal belief system. At the conclusion of the study, the majority of students are confident about their creative self-efficacy. Nevertheless, during each workshop, students claim they are unsure whether they can do the exercises and are surprised when they do them.

Bandura's self-efficacy theory can explain this phenomenon. According to Bandura (1977), individuals' efficacy expectations or perceived self-efficacy determines how much effort they will exhibit and how long they will cope with failure or obstacles; thus, stronger perceived self-efficacy leads to more effort. Adding to this effect, Bandura explains that people fear and avoid threatening situations with which they know they cannot cope. On the other hand, if they persist against these fears, they will gain corrective experiences and eliminate defensive behavior, whereas those who do not persist will remain fearful and have self-debilitating expectations for a long time.

Bandura (1977) also clarifies the various sources of information to which students allude as they report about what helps them build their creative self-efficacy. For many students, projects or class assignments allows them to practice their creative side an attain some degree of success. Bandura calls such activities "performance accomplishments"

that are based on personal mastery experiences which leads to higher self-efficacy expectations.

Moreover, people such as parents, peers, and teachers in the students' lives offered "verbal persuasion" during their endeavors. Bandura mentions that this source of information is weaker than performance accomplishments but can enhance self-efficacy during corrective actions. For example, in one student's response, a teacher encouraged her creative pursuit when she was struggling with the restrictions in art class: "Well, my teacher … he saw some of my artwork because I didn't take an art class, but I'd always be drawing in the hallway. He's like, 'You should take graphics if you don't like art class.' So, I did."

Another student talked about how she got angry with one teacher for rejecting her creative freedom due to restricted course guidelines; yet, that just motivated her to take up another creative class that granted her greater freedom of expression. From Bandura's (1977) viewpoint, this student experiences "emotional arousal" where emotional arousal served as an energizing function or motivational tool to cope with fear and anxiety related to creative acts. Recall one student shared the story how an art teacher gave her a 'C' on an assignment for not following the guidelines:

> Yeah. So, I was very mad. So, that was like a little … I'm still mad about it, because it was such a good piece, and she gave me a C on it. Are you kidding me? She was the only art teacher at the high school. So, I dropped it and I entered ceramics.

During the creativity workshops, the students experience the last form of Bandura's (1977) confidence building approach – "vicarious experiences." This approach

is based on the observation of others performing activities with positive outcomes and the resulting belief that the observers can also improve performance. For example, in one exercise where students are asked to create their own start up in three minutes, one student claims, “If somebody would have proposed that to me in a hypothetical sense, that I could come up with a business idea and a presentation in three minutes, I would have had to disagree.”

Limitations

The four main limitations of this study include (a) experimenter effect, (b) cross-cultural misinterpretation; (c) length of study, and (d) number of student participants. Each limitation is discussed in the following section.

Upon reflection, one limitation in this study may be the experimenter effect. The external validity of a study can be threatened because the researcher’s charm and energy can motivate participants to perform well. In such cases, the study may not be transferable to other settings if another researcher does not possess similar characteristics (Smith & Glass, 1987). Although I did not have any prior relationships with the student participants, by the mere virtue of my own outgoing, energetic nature, I could not (nor would I want to) change my teaching style to minimize this effect. Nevertheless, the focus of this action research study is on changing the freshmen participating in a course at Thunderbird, not on generalizing the outcomes to other settings.

Another potential limitation is that the study does not control for cross-cultural misinterpretations. The constructs used in the surveys, although valid, are mostly used on Western sample populations. Also, the definitions of creativity used in the study stem from a Western perspective. Because the student participants are from various cultures

and backgrounds, there is a possibility that the designated definition can be misunderstood or interpreted differently especially if they come from a more collectivist as compared to an individualistic culture (Halder, Binder, Stiller & Gregson, 2016). Due to the low number of students in my class section, I could not minimize this effect.

Next, length of the study is a limitation. This course was a 14-week course, but I could only teach in three of the sessions. Creativity much like any skill requires time to develop and master. Albert Bandura (1977) affirms that "transitory experiences leave lasting effects by being coded and retained in symbols for memory representation. However, to build self-efficacy people process and synthesize feedback over longer intervals to produce target behaviors so repeated reinforcements have greater influence on behavior" (p. 192). That said, a longitudinal study would provide additional time to examine behavioral outcomes.

The last limitation involved the number of student participants. Because only ten students participated in this study, quantitative data is quite limited. Nevertheless, results show increases in creative identity, creative growth mindset, and creative self-efficacy.

Implications for Practice

The purpose of this action research study is to evaluate business students' perceptions about their personal everyday creativity and to examine the influence of infusing creativity training into their freshmen seminar course. In this section, I suggest two implications for practice from my experience in this study.

The first implication for practice is for a university program to reinforce creative self-beliefs throughout the program. This initiative can begin with faculty members making creativity a main learning pillar and voicing it to faculty colleagues, staff

members, and students. Next, each faculty member can allocate a percentage of the course and of students' assignments to creative outputs as part of the courses' learning objective throughout the program. Moreover, faculty members, career coaches, and/or academic advisors can assist students to creatively express their academic achievements by using social media, creating a website, facilitating a TED talk or encouraging students to take creative classes or join creative/artistic student clubs. Finally, students can be encouraged to establish growth mindset or creative learning clubs even if they so not choose to be entrepreneurs.

The second implication for practice would be to revise and extend the workshops to include additional content to foster greater levels of creativity. In the current study, findings suggest there is significant improvement in student comprehension regarding what creative self-beliefs are and why they are important. Nevertheless, there appears to be potential for increased levels of creativity.

Implications for Research

An action research study is a cyclical process to plan, act, develop, and reflect (Mertler, 2016). As I suggest in my limitations, the first implication for research is developing and implementing longitudinal data collection. Throughout the student interviews, some students express interest in viewing and discussing student reflections and Instagram posts, but time constraints prevented the occurrence of more meaningful, in-depth discussions.

The second implication for research is exploring and trying out more survey instruments. During my literature review, I read a study by Long (2014) on an empirical review of research methodologies and methods in creativity studies. Long claims 83% of

empirical studies on creativity from 2002-2013 are quantitative studies. With such an array of instruments, there appears to be opportunities to consider additional factors with respect to assessing students' creativity.

Personal Lessons Learned

When I decided to transition to education for the purpose of pursuing my doctorate, I did not know what to expect. I came in wanting to test a belief that I can be the architect of my environment and liberate the change agent inside of me. Throughout the past three years, my personal and professional beliefs have been tested, refined, and strengthened. In the following sections, I discuss some lessons I learned.

Change is a process. When I first started the Ed.D. program, my colleague asked me what I expected to achieve in it? Without blinking an eye, I told her I anticipated I would have to re-evaluate my personal beliefs about myself in the first year, my beliefs about others in the second year, and my belief in the feasibility of my study in the third year. That is what happened. The interesting part about this change process is that when I affirmed my intention to succeed in the program, it was as if the whole universe convened to support me in my transformation.

During this time period, I had an excellent manager who allowed flexibility in my work schedule and in turn, I demonstrated the highest career performance in my life to date. My colleagues were forgiving especially on Fridays when I would come in groggy because I had class until 10 pm the night before and a one-hour drive home each Thursday night. My mom would drop me off meals for the week, so I can focus on work and study and not on cooking. My true friends who supported me revealed themselves as I shared my high and low moments. My sister and her family provided so much moral

support and so many dinner invites that I am sure it will take me 10 years to return all their meals.

Professionally, I witnessed how I went from serving myself to serving others because I discovered I have a lot to give. I changed from a deficit mindset to an abundance mindset and it made all the difference. I became more friendly, approachable and authentic – some people even said I was calmer and more comfortable in my own skin. My classmates opened up my eyes to different industries and positions throughout Phoenix and beyond. I also encountered several personality traits among my classmates as well. As a predominant extrovert, one of the best supplemental leadership trainings I took was called equine training when people work with horses to understand how to read energy better because horses do not filter how they feel about you. That's where I learned to manage myself with introverted people by simply waiting and allowing them to initiate first.

Through the program, I also became an educational leader. Due to all the different cycles of literature review and research we had to do, I proactively upgraded my 'industry' knowledge to where people are coming to me for advice now. In this knowledge economy, I am thrilled to find the industry I love researching about every day. Finally, the fact that my problem of practice turned out to be an even larger problem than I thought, actually excites me even more to tackle it head on as a 'tempered radical.'

Community of practice is real. Wenger (1998) was right all along. Once you build it [i.e., the framework of your community], they will come. I have met people from Arizona and Ohio to Denmark and Australia that have informed my work, cheered me on, and revealed potential career pathways. Through my new network, I conducted a

workshop at Mesa Art Center that turned into developing a premiere leadership development program that infuses leadership, creativity, and mindfulness training together for the first time around the valley. Also, through the tireless assistance of my doctoral committee member, I published the majority of my dissertation before my defense. I realized the community of creativity researchers is quite small but eager to assist and I am just at the beginning of my journey.

Conclusion

The structure of society continues to evolve towards a global sharing economy. Although STEM related professions are growing exponentially, social scientists from any discipline have to keep up to help people manage this change. The setting of this social science related action research study is Thunderbird School of Global Management which, as discussed above, much like other business schools is part of a community of practice conferring the highest number of bachelor's degrees in the U.S. So, it made sense to engage in research in such an exploding setting. One of the leading voices inside this community of practice, the Association to Advance Collegiate Schools of Business (AACSB) has challenged the community to step up their game – to innovate their own structures and activities if they truly want to develop additional, innovative leaders of tomorrow.

The research presented in this study validates their concerns. By 2024, the U.S. will witness an unprecedented influx of knowledge workers entering the marketplace. If organizations are not equipped or do not have the capacity to employ all these knowledge workers, civil unrest will continue to increase. To minimize the effects of the unrest, it becomes imperative to empower individuals to develop their personal creativity and help

them stand on their own laurels. It is within the collective empowerment, that society can regain balance and harmony amid chaos.

Prior global surveys revealed that an overwhelming 78% of U.S. respondents voice that they want schools to teach creativity over memorization and only 44% feel schools are living up to their creative potential. A lot of work needs to be done in a limited time. As an educational researcher, I readily understand there are side effects with disrupting the status quo, but it is also evident that providing creativity training may be our best hope for continued progress with respect to dealing with the difficult social and economic issues that face our world.

The qualitative and quantitative data results of the study demonstrated that by expanding the definition of creativity and its psychological frameworks to a more democratic, holistic process that extends well beyond the arts, students' mindsets and perceptions about creativity change. This introductory training helps remove basic psychological/mental barriers and misconceptions and now students understand that they can add value through the creative process in any setting. A quote from Socrates is displayed in the food court at ASU's West campus which says, "Education is the kindling of a flame, not the filling of a vessel." As an action researcher, I witnessed the spark inside ten individuals and now I feel ready to create a wildfire.

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APPENDIX A

POST-WORKSHOP FEEDBACK SURVEY

Feedback Survey

1. On a scale from 1 (Extremely dissatisfied) to 5 (Extremely satisfied), how satisfied are you of this creativity workshop?
    - Extremely satisfied
    - Somewhat satisfied
    - Neither satisfied nor dissatisfied
    - Somewhat dissatisfied
    - Extremely dissatisfied
2. Give three adjectives that spontaneously come to mind describing the X Workshop [Open question]:

    1. 2. 3.

3. What did you like about this workshop? [Open question]
4. How has this workshop influenced your ideas about creativity? [Open question]

APPENDIX B

SEMI-STRUCTURED INTERVIEW PROTOCOL: STUDENTS

Distribute materials	Consent Form
Moderator introduction, thank you and purpose (1 minute)	Hello. My name is Sogol Homayoun. I'd like to begin by thanking you for taking time to come today. We'll be here for about twenty-five minutes. The reason we're here today is to understand your perceptions about your personal, everyday creativity. I would like to record the conversation so that I can examine the data more closely, but your name will not be known. Will you allow me to audio record our conversation? [Wait for response.] Thank you.
Ground rules (1 minute)	I'm going to ask you a few questions related to your personal creativity this semester. Your input will inform a study that seeks to improve teaching and measuring creativity for Thunderbird bachelor's degree programs. In your responses, please do not mention any names.
Introduction of participant (1 minute)	To begin, please tell me which bachelor's degree are you studying/or going to study?
Specific questions (15-20 minutes)	1. How do you define creativity? 2. Tell me about a time when you were creative? a. What supported/fostered your creativity in that situation? 3. Tell me about another time that you were creative? a. What supported/fostered your creativity in that situation? 4. Tell me about a time when you felt inhibited as you tried to be creative? a. What caused you to feel inhibited? 5. Tell me about another time when you felt inhibited as you tried to be creative? a. What caused you to feel inhibited? 6. What are your perceptions about creative identity?

	a. How has your perspective changed based on your participation in the workshops? 7. What are your perceptions about creative self-efficacy? a. How has your perspective changed based on your participation in the workshops? 8. What are your perceptions about creative mindset? a. How has your perspective changed based on your participation in the workshops?
Closing **(1 minute)**	Thanks for coming today and talking about your personal creativity. Your comments have given me lots of different ways to see this concept. I thank you for your time.

APPENDIX C

RECRUITMENT AND CONSENT LETTER

Dear Thunderbird Student:

RESEARCHER

My name is Sogol Homayoun and I am a doctoral student in the Mary Lou Fulton Teachers College (MLFTC) at Arizona State University (ASU). I am working under the direction of Dr. Ray Buss, a faculty member in MLFTC.

STUDY PURPOSE

The purpose of this study is to determine the extent to which an instructional intervention in the Thunderbird freshmen seminar affects students' beliefs about their personal, everyday creativity based on associated variables like creative identity, creative self-efficacy, and creative fixed/growth mindset.

DESCRIPTION OF RESEARCH STUDY

If you decide to participate, then you will join a study involving research on an instructional intervention to help you understand and develop your creative self.

If you say YES, then your participation will last for a total of approximately 30-60 minutes, some of which will be during class time (i.e., the dissemination of surveys), and some of which will be at a time and location that we agree upon (i.e., an interview). You will be asked to:

1. **Participate in the innovation**
   The innovation will consist of three class sessions focused on developing your creative identity, creative self-efficacy, and creative mindset. All students will participate in the innovation whether you choose to participate in the research part of the project or not.
2. **Take three short surveys**
   You will take one survey at the end of each class session (duration 3-5 minutes) and two surveys at the conclusion of the project (duration 6-8 minutes), for a total of 21 to 31 minutes.
3. **Interview with Sogol Homayoun**
   I will also randomly choose 8-10 students to participate in an interview concerning your perceptions about your creativity. The interview may last up to 25 minutes. I would like to audio record this interview. Please let me know if you wish to be interviewed as part of the study and will let me audio record your responses by verbally indicating your consent.

To ensure we can match your retrospective pre- and post-test survey responses to analyze the data, we will ask you to use a unique identifier known only to you and it will be easy to recall. This identifier consists of using the first three letters of your mother's name and the last four digits of your phone number. Thus, "Sar4567" would be the identifier for someone whose mother's name was Sarah and whose phone number were (602) 543-4567.

WITHDRAWAL PRIVILEGE

Your participation in this study is voluntary. If you choose not to participate or withdraw from the study at any time, there will be no penalty whatsoever. Your choice to participate in the surveys and interview will not affect your grade in the course or your standing at ASU. You must be 18 years of age or older to participate.

BENEFITS

The benefit to participation is the opportunity for you to reflect on your perceptions of your personal, everyday creativity. Thus, there is potential to enhance your creative competencies and understand the importance creativity plays in business.

RISKS

There are no foreseeable risks or discomforts to your participation.

CONFIDENTIALITY

Your responses will be anonymous. Results from this study may be used in reports, presentations, or publications but your name will not be used.

VOLUNTARY CONSENT

Completing the surveys and/or agreeing to be interviewed indicates your consent to participate. If you have any questions concerning the research study, please contact the research team – Dr. Ray Buss at ray.buss@asu.edu or (602) 543-6343 or Sogol Homayoun at Sogol.homayoun@thunderbird.asu.edu and 480-213-6162.

Thank you,

Sogol Homayoun, Doctoral Student
Ray Buss, Associate Professor

If you have any questions about your rights as a participant in this research, or if you feel you have been placed at risk, you can contact Ray Buss at (602) 543-6343 or the Chair of Human Subjects Institutional Review Board through the ASU Office of Research Integrity and Assurance at (480) 965-6788.

APPENDIX D

CREATIVE PERCEPTION POST-INTERVENTION SURVEY

Greetings! As part of my doctoral studies, I am going to ask your opinion about concepts related to your creativity.

There are no right or wrong answers, select the one that best matches your beliefs. This is the best way to train you afterward.

This 29-question survey will take 6-8 minutes to complete. Your participation is voluntary, and responses are anonymous. You will just provide a secret code to match your survey with one you will take later. If you have any questions, please contact sogol.homayoun@thunderbird.asu.edu.

1= strongly disagree and 2 = disagree and 3 = slightly disagree and 4= slightly agree with 5 = agree and 6= strongly agree

	Questions	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
	Creative Self-efficacy						
1	I am good at coming up with new ideas	☐	☐	☐	☐	☐	☐
2	I have a lot of good ideas	☐	☐	☐	☐	☐	☐
3	I have a good imagination	☐	☐	☐	☐	☐	☐
4	I feel that I am good at coming up with novel ideas	☐	☐	☐	☐	☐	☐
5	I have confidence in my ability to solve problems carefully	☐	☐	☐	☐	☐	☐
6	I have a knack for further developing the ideas of others	☐	☐	☐	☐	☐	☐
	Creative Identity						
7	In general, my creativity is an important part of my self-image	☐	☐	☐	☐	☐	☐
8	My creativity is an important part of who I am	☐	☐	☐	☐	☐	☐
9	Overall, my creativity has little to do with how I feel about myself	☐	☐	☐	☐	☐	☐

10	My ability to be creative is an important reflection of who I am	☐	☐	☐	☐	☐	☐
11	I think I am a creative person	☐	☐	☐	☐	☐	☐
	Fixed Mindset						
12	My creativity is something about me that I can't change very much	☐	☐	☐	☐	☐	☐
13	I have a certain amount of creativity and I really cannot change it	☐	☐	☐	☐	☐	☐
14	You either are creative or you are not—you cannot change your creativity	☐	☐	☐	☐	☐	☐
15	You have to be born creative—without innate talent you cannot be highly creative	☐	☐	☐	☐	☐	☐
16	Some people are creative, others are not—and no amount of practice can change their creativity	☐	☐	☐	☐	☐	☐
17	I was born with a certain level of creativity, which cannot be changed.	☐	☐	☐	☐	☐	☐
	Growth Mindset						
18	I can learn to be creative	☐	☐	☐	☐	☐	☐
19	I can cultivate my creativity in business school	☐	☐	☐	☐	☐	☐
20	If I want to be more creative I have to work at it	☐	☐	☐	☐	☐	☐

21	Anyone can develop his or her creative abilities	☐	☐	☐	☐	☐	☐
22	Practice, perseverance and trying hard are the best ways to develop and expand one's creativity	☐	☐	☐	☐	☐	☐
23	Creativity requires effort and work	☐	☐	☐	☐	☐	☐
24	It doesn't matter what your creativity level is—you can always increase it	☐	☐	☐	☐	☐	☐

Demographics Survey Questions

Knowing some things about you will help us in our study. The following five questions will help us to get know more about you.

25. What gender describes you?

☐ Male
☐ Female
☐ Other (please specify) _____

26. What is your race/ethnicity? (Check all that apply)

☐ Hispanic or Latino
☐ American Indian or Alaska Native
☐ Asian
☐ Black or African American
☐ Native Hawaiian or Other Pacific Islander
☐ White, Non - Hispanic
☐ Other (please specify) _____

27. What is your age: _____

28. Which Thunderbird Bachelor program are you studying?

☐ Bachelor of Global Management
☐ Bachelor of Global Trade

29. To match your survey with one you will take later, please enter the first 3 letters of your mother's name and last 4 digits of your phone number. Example, gol6162:
_____

Thank you for completing the questionnaire. Now that you have finished, if you have any questions, please contact Sogol Homayoun at sogol.homayoun@thunderbird.asu.edu or (480)213-6162.

APPENDIX E

CREATIVE PERCEPTION RETROSPECTIVE PRE-INTERVENTION SURVEY

Greetings! Similar to last week, I am going to ask your perception about concepts related to your creativity. This time, knowing what you know about creativity, think back to how you perceived your personal creativity before the workshop training sessions. Answer the questions based on those initial beliefs prior to your training.

There are no right or wrong answers, select the one that best matches your beliefs.

This 24-question survey will take 6-8 minutes to complete. Your participation is voluntary, and responses are anonymous. If you have any questions, please contact sogol.homayoun@thunderbird.asu.edu.

Please use the same secret code so we can combine your survey results. See directions below.

Please use the following rating: 6= strongly agree, 5 = agree, 4= slightly agree, 3 = slightly disagree, 2 = disagree and 1= strongly disagree.

	Please use the same secret code from the last survey so we can combine your survey results. Please enter the first 3 letters of your mother's name and last 4 digits of your phone number. Example, gol6162						_____
	Questions	**Strongly Agree**	**Agree**	**Slightly Agree**	**Slightly Disagree**	**Disagree**	**Strongly Disagree**
	Creative Self-efficacy						
1	Prior to the workshops, I believed I was good at coming up with new ideas	☐	☐	☐	☐	☐	☐
2	Prior to the workshops, I believed I had a lot of good ideas	☐	☐	☐	☐	☐	☐
3	Prior to the workshops, I believed I had a good imagination	☐	☐	☐	☐	☐	☐
4	Prior to the workshops, I believed I felt that I was good at coming up with novel ideas	☐	☐	☐	☐	☐	☐

5	Prior to the workshops, I believed I had confidence in my ability to solve problems carefully	☐	☐	☐	☐	☐	☐
6	Prior to the workshops, I believed I had a knack for further developing the ideas of others	☐	☐	☐	☐	☐	☐
	Creative Identity						
7	Prior to the workshops, I believed, in general, my creativity was an important part of my self-image	☐	☐	☐	☐	☐	☐
8	Prior to the workshops, I believed my creativity was an important part of who I was	☐	☐	☐	☐	☐	☐
9	Prior to the workshops, I believed overall, my creativity had little to do with how I feel about myself	☐	☐	☐	☐	☐	☐
10	Prior to the workshops, I believed my ability to be creative was an important reflection of who I was	☐	☐	☐	☐	☐	☐

11	Prior to the workshops, I believed I was a creative person	☐	☐	☐	☐	☐	☐
	Fixed Mindset						
12	Prior to the workshops, I believed my creativity was something about me that I could not change very much	☐	☐	☐	☐	☐	☐
13	Prior to the workshops, I believed I had a certain amount of creativity and I really could not change it	☐	☐	☐	☐	☐	☐
14	Prior to the workshops, I believed you were either creative or you were not—you could not change your creativity	☐	☐	☐	☐	☐	☐
15	Prior to the workshops, I believed you had to be born creative—without innate talent you could not be highly creative	☐	☐	☐	☐	☐	☐
16	Prior to the workshops, I believed some people are creative, others were not—and	☐	☐	☐	☐	☐	☐

	no amount of practice could change their creativity						
17	Prior to the workshops, I believed I was born with a certain level of creativity, which could not be changed.	☐	☐	☐	☐	☐	☐
	Growth Mindset						
18	Prior to the workshops, I believed I could learn to be creative	☐	☐	☐	☐	☐	☐
19	Prior to the workshops, I believed I could cultivate my creativity in business school	☐	☐	☐	☐	☐	☐
20	Prior to the workshops, I believed if I wanted to be more creative I had to work at it	☐	☐	☐	☐	☐	☐
21	Prior to the workshops, I believed anyone could develop his or her creative abilities	☐	☐	☐	☐	☐	☐
22	Prior to the workshops, I believed practice, perseverance and trying hard were the best ways to	☐	☐	☐	☐	☐	☐

	develop and expand one's creativity						
23	Prior to the workshops, I believed creativity required effort and work	☐	☐	☐	☐	☐	☐
24	Prior to the workshops, I believed it did not matter what your creativity level was—you could always increase it	☐	☐	☐	☐	☐	☐

Thank you for completing the survey. Now that you have finished, if you have any questions, please contact Sogol Homayoun at sogol.homayoun@thunderbird.asu.edu or (480)213-6162.
