SUPER GIRL POWER: CAN GIRLS MOVE SWIFTLY THROUGH DELIBERATE PRACTICE TO BECOME SUCCESSFUL ENTREPRENEURS?

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"Little girls who dream become women with vision" Anonymous. This little girl had a dream to do work that would empower those who did not always have a voice to help themselves. This study allowed this woman to make that vision a reality.

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Title of Study: SUPER GIRL POWER: CAN GIRLS MOVE SWIFTLY THROUGH DELIBERATE PRACTICE TO BECOME SUCCESSFUL ENTREPRENEURS?

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The researcher developed a five-day, seven-city entrepreneurship program—Envision Lead Grow—which introduces middle-school girls to entrepreneurship through small groups managed by camp counselors. This program culminates with a business pitch competition in which girls win a monetary prize based on scores from judges. This study adopts Baron and Henry's (2010) deliberate practice model to explain how establishing opportunities for girls to engage in entrepreneurial deliberate practice activities will enhance the performance of tasks that influence new venture performance. Baron and Henry's model provides creative solutions for identifying activities that constitute an entrepreneur's deliberate practice (i.e., experiential learning, vicarious learning, and past experience in other domains). This study examines the mediating role of deliberate practice between antecedents (i.e., self-efficacy, self-control, conscientiousness, and delayed gratification) and desirable outcomes (the resultant cognitive resources and enhanced entrepreneurial task performance). To accomplish this, 414 middle-school girls participating in the Envision Lead Grow entrepreneurship program were assessed on antecedents of deliberate practice at the beginning of the program (T1) and again on the last day of the session (T2). Also, program counselors responded to a daily questionnaire to assess each girl's level of engagement in deliberate practice. Finally, entrepreneur judges completed an instrument based on a pitch competition to capture the enhanced performance of tasks that influence new venture performance. Findings of this study were somewhat surprising, as they were not consistent with the theoretical model regarding the relationship between the antecedents (self-efficacy, self-control, conscientiousness and delayed gratification) and deliberate practice. Moreover, the mediated relationship between entrepreneurial task performance and the cognitive resource of intuition was not present. However, the key relationship—the impact of deliberate practice on performance—was supported.

Keywords: deliberate practice, cognitive resources, intuition, self-efficacy, self-control, conscientiousness, delayed gratification, middle school, girls, entrepreneur.

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CHAPTER I

INTRODUCTION

According to the U.S. Census Bureau, in 2014, 15.5% of the U.S. population lived in poverty (Bishaw & Glassman, 2016). When taking a closer look at the socio-economic factors of the city with the highest-ranking poverty level, Camden, New Jersey and a city with a very low poverty level, Flower Mound, Texas, the pictures are worlds apart. In 2014, Camden reported a 42.6% poverty level, while Flower Mound reported a 2.3% poverty level. To understand some of the drivers for this disparity, it is interesting to compare the demographics (age, gender, and race), education, and crime level. As can be seen in Table 1 below, there is a stark contrast between the two cities regarding gender, race, education, and crime level.

The data show us that in both cities, there is a significant influence of women in the population and where there are lower levels of poverty there is a significantly higher level of education and lower level of criminal activities. Also, there is an imbalance in the racial makeup as the Hispanic and Black population accounts for more than 90% of the population in the higher poverty area of Camden, New Jersey and approximately 13% in the significantly lower poverty area of Flower Mound, Texas.

Table 1

Socio-Economic Factors

Demographics	Camden, NJ	Flower Mound, TX
Gender	52.1% women	50.4% women
Race	47% Hispanic, 44.3% Black, 4.9% White, 2.1% Asian	9.0% Hispanic, 4.6% Black, 73.3% White, 10.3% Asian
Education (populations above 25 years old)	67.5% high school or higher, 9.5% bachelor's degree	97.1% high school or higher, 61.0% bachelor's degree
Crime index (U.S. average 299)	1107.6	51.1

Source: City-Data.com.

Another contributor to the economic outlook of a city is its level of teenage pregnancy. In 2014, there were 342 reported teen births between the ages of 15-17 in Camden (New Jersey State Health Assessment Data, n.d.), while in Flower Mound there were only 27 (County Health Rankings and Roadmaps, n.d.). According to Youth.Gov (n.d.), teenage pregnancies have a negative impact on the economy and the ability to reach an individual's full potential.

In an article published by the World Bank (2016), new ventures are a viable solution to ending poverty in a community by creating economic growth and increasing the number of jobs. For example, in 2014, there were only six new businesses formed in Camden, compared to 121 new businesses in Flower Mound creating 1,600 new jobs.

Based on the factors described thus far, it is imperative that viable programs emerge to encourage entrepreneurship in young girls before they become single parents in an effort to build a pipeline of future entrepreneurs leading to increased job opportunities for their communities. Based upon the expert performance theory (Ericsson & Charness, 1994) and utilizing the deliberate practice framework (Baron & Henry, 2010), young girls can become entrepreneurs. This research focuses on the success of girls who complete the Envision Lead Grow Entrepreneurship (ELG) program, which aims to introduce 1,000 girls from economically under-served communities to entrepreneurship.

In their seminal work, Baron and Henry (2010) addressed the impact of the entrepreneur on the small business, by asking the question: "Why are some entrepreneurs so much more successful in starting and operating new ventures than others?" (p. 49). According to Baumol (1968), the entrepreneur "has long been recognized as the apex of the hierarchy that determines the behavior of a firm" (p. 64). Baron and Henry (2010) submitted strong theoretical evidence which suggested that outstanding performance across many domains is based on deliberate practice. Deliberate practice is defined as highly demanding and focused practice for extended periods that are based on continuous feedback (Ericsson, 2004). Deliberate practice increases domain expertise and increases

basic cognitive skills, such as intuition, allowing increased ability to perform entrepreneurial tasks. Baron and Henry (2010) point out that increased entrepreneurial ability could ultimately increase the overall performance of a firm.

Several other researchers have linked entrepreneurial expertise (i.e., prior experience in start-up organizations and industry) positively to overall firm performance (Cooper, Woo, & Dunkelberg, 1989; Duchesneau & Gartner, 1990; Dyke, Fischer, & Reuber, 1992; Stuart & Abetti, 1990). Thus, the more industry knowledge and experience an entrepreneur has with starting businesses, the higher the likelihood of firm success (Stuart & Abetti, 1990). However, some studies have contradicted these results by demonstrating that prior industry knowledge did not always correlate with a firm's success (Bates, 1990; Van de Ven, Hudson & Schroeder, 1984). A possible explanation for these contradictory findings is that researchers have not fully investigated possible variables that mediate or moderate the relationship between previous entrepreneurial experience and firm success (Baron & Henry, 2010). Researchers have yet to identify mechanisms by which entrepreneurs achieve this expertise specifically; however, Baron and Henry (2010) point out that higher levels of cognitive resources could influence the acquisition of critical entrepreneurial skills. Researchers have argued that cognitive resources can be expanded through experience, experimental learning, and vicarious learning (Baron & Henry, 2010). This current study aims to provide empirical evidence necessary to test the impact of deliberate practice on firm performance when moderated by cognitive resources.

Baron and Henry's (2010) deliberate practice model builds upon Ericsson and Charnesses' (1994) expert performance theory. The deliberate practice model presents evidence suggesting that participation in deliberate practice increases domain expertise and enhances cognitive skills, which are vital to the success of new business ventures. As such, the Envision Lead Grow program has been designed around seven of the eight components of Baron and Henry's (2010) deliberate practice model. The seven components are: 1) highly demanding requiring focused attention, 2) activities designed around strengthening areas of weakness, 3) activities include repetition, 4) continuous feedback provided, 5) establishment of goals, 6) include self-observation during activity, and 7) self-reflection after completion of activity (Baron & Henry, 2010; Ericsson, Krampe, Tesch-Romer & Heizmann, 1993).

The eighth component requires exertion over a long period. While the exact amount of time differs within research, a commonly accepted amount of time has been 10,000 hours over ten years. Thus, compressing the amount of time to move toward expert performance in this circumstance is theoretically and practically supported for the following reasons. Researchers indicate that entrepreneurship is unique regarding what tasks are identified as deliberate practice activities. There are many activities in our daily lives and past experiences that increase an individuals' awareness of opportunities that lend themselves to the development of expert performance as an entrepreneur. The survival mode that most of the young girls in the targeted communities have lived within builds the tenacity, resourcefulness, and self-control that leads to improved deliberate practice performance.

Secondly, when faced with limited options and time is considered a luxury, there is additional motivation to accelerate most processes. According to Meyerson, Weick, and Kramer (1996), the swift trust concept has been established in particular with the development of virtual teams. The time to build trust in traditional teams that are working in a physical space together can be condensed to move to a state of productivity. Action can be substituted for time in these scenarios. Accordingly, when the opportunity to change the trajectory for a young girl, a family, and a community is offered, the participants will push harder and therefore substitute action for time and move towards expert performance sooner.

This current study is important for three reasons. First, this study provides an intervention to inspire impressionable teenage girls to focus their attention on becoming successful entrepreneurs, which may decrease teen pregnancy, increase the number of high school graduates, and increase the number of new ventures in a community while increasing employment rates. Ultimately, this could contribute to decreased poverty levels. Secondly, the results of this study add to the scarce entrepreneur research in deliberate practice by providing empirical evidence that experiential/vicarious learning and deliberate practice in past life experiences can lead to new venture success. Finally, this research introduces the concept of a swift adoption of deliberate practice by demonstrating how expertise for young girls can be established expeditiously to put them on the path to entrepreneurship.

This study took place throughout the summer of 2017 in camp locations across seven cities. Participants were recruited to complete a survey as a condition to participate

in a camp program. The survey was administered to each camp participant at each of the seven camp locations, and was designed to measure self-efficacy, self-control, conscientiousness, and delayed gratification. Next, a Cognitive Skills Index (CSI) Survey was completed by each camper to collect their level of intuition. Both surveys were administered within the first three hours of the first day of camp and again on the last day of camp. A third survey was completed daily by camp counselors. Camp counselors served as camp facilitators for small groups (5-15) of campers and documented the camper's level of engagement with deliberate practice. Finally, the Performance Survey was completed based on videos that captured the camper's passion pitch on the first and final days of the camp program.

The findings of this study were somewhat surprising, as they were not as consistent with the theoretical model regarding the relationship between the antecedents (self-efficacy, self-control, conscientiousness and delayed gratification) and deliberate practice. Moreover, the mediated relationship between entrepreneurial performance and the cognitive resource of intuition was not significant. However, the main relationship studied was the impact of deliberate practice on performance, and this relationship was supported empirically.

While there were several limitations to the study, time had the greatest impact. There was limited time for execution of the study's design, which would have allowed for the formation of a control group for comparative analysis. Another concern was the amount of time allocated to deliberate practice. There was perhaps not enough time to fully measure the relationship of the antecedents on deliberate practice. Antecedents

such as delayed gratification would be measured more effectively if there were more time between the pre-and post-intervention data collection phase. The final concern with time was the inability to measure true examples of entrepreneurship (i.e. establishing a Federal Tax ID and selling products or services). Instead the business pitches were used as a proxy for entrepreneurship.

A successful economy depends on the success of small businesses and entrepreneurs (U.S. Small Business Administration, n.d.). The economic ecosystem must be fed by building a pipeline of future entrepreneurs that understand what it takes to be a successful entrepreneur. This can be gained through vicarious learning or experience. However, there is no better way to learn how to be an entrepreneur than becoming an entrepreneur. In the words of Nike, "Just Do It"! Henry and Baron's (2010) model offered an interesting and practical model that, to my knowledge, had not been tested empirically until now. Although the findings of this research study could not show support for six of the hypotheses, one of the hypotheses supported was the foundation of the entire model. There is a direct path from deliberate practice to success with entrepreneurship. The second hypotheses supported a direct path from deliberate practice to cognitive resource (intuition)

CHAPTER II

LITERATURE REVIEW

There continues to be a fascination with determining what separates those who reach levels of greatness from those who are simply good. Even as we examine the oldest book ever written, the Bible, there are accounts of God bestowing upon a character the ability to perform extraordinary acts. There is a story from the Bible about David and Goliath that reflects a higher power being bestowed upon an individual. David used his God-given extraordinary ability to sleigh the Giant with simple stones instead of requiring a sword. In the literature, Sir Francis Galton (1869) was one of the first scientists to investigate the formula for excellence across various fields (Ericsson, Krampe, Tesch-Romer and Heizmann, 1993). In the early 1960s, Luchins and Luchins (1961) studied the influence of those who were considered exceptional or experts on the judgment of those surrounding them. In 1984, researchers explored methods to develop expertise in education and found that exceptional performers focused on one subject or skill instead of attempting to become a master in a variety of skills (Walberg, Strykowski, Rovai, & Hung, 1984).

During the 1990s, the concept of deliberate practice emerged as an explanation of the extra degree resulting in the elite performances of individuals in music, sports, chess, and visual arts (Ericsson et al., 1993). In the late 1990s, the deliberate practice theory was applied in the work settings to explain high performers in various work domains (Sonnentag & Kleine, 2000; van de Wiel, Van den Bossche, Janssen, & Jossberger, 2011). It was not until fairly recently that deliberate practice was applied to the field of entrepreneurship (Baum & Locke, 2004; Keith, Unger, Rauch, & Frese, 2016).

A search for deliberate practice returned 16,100 results; however, only 1,550 were in the entrepreneurship domain. After further examination, there were fewer than 15 published in journals with a "3" or "4" rating in the 2015 Association of Business Schools Academic Journal Guide and were directly related to deliberate practice. Less than half of those were empirical studies. After reviewing the literature, two themes emerged as explanations for the lack of published research in this area. One theme is that it was not until relatively recently that researchers began to view the entrepreneur as a contributor to overall firm performance. As a result, the majority of the literature focuses on individual characteristics of an entrepreneur, as opposed to how those characteristics could influence overall firm performance (Read & Sarasvathy, 2005). The second theme is the challenge that researchers face when trying to measure the effect that deliberate

practice has on entrepreneurship. To measure deliberate practice, one must identify specific tasks that the entrepreneur must perform. While task identification has been well defined in domains such as music, chess, and sports, task identification has been somewhat ambiguous when studying deliberate practice in entrepreneurship; thus, it is challenging to empirically test (Ericsson et al., 1993).

Deliberate practice requires the identification of well-defined tasks that frequently occur in the domain (Ericsson & Charness, 1994). This presents unique challenges as entrepreneurs' tasks are dynamic and not as easily tracked as individuals in disciplines like music and sports. As an illustration, throughout the expert performance and deliberate practice literature, references are commonly made to sports (e.g., Helsen, Starkes & Hodges, 1998). While a basketball star may practice making winning shots from the free throw line for hours upon hours every day for years, the day-to-day activities for an entrepreneur must remain flexible to meet the demands of the day. Agility is a key characteristic of successful entrepreneurs (Jarillo, 1989), thus making it challenging to apply deliberate practice to this domain. To this point, Baron and Henry (2010) introduced vicarious and experiential learning as a proxy for deliberate practice for entrepreneurs.

This section discusses the origin of the expert performance theory, describes the specific elements of deliberate practice with support throughout various domains, and provides a detailed literature review of studies specific to the application of deliberate practice within the scope of entrepreneurship. Since this research study is specific to

socioeconomic elements, the chapter concludes with a brief discussion of feminist theories as they relate to entrepreneurship, ethnicity, and income level.

Expert Performance

K. Ericsson developed the Expert Performance Theory in response to gaps that existed in the field of psychology in understanding how one advances from an ordinary to extraordinary performer (Ericsson & Faivre, 1988). Driven by his experience as a chess expert, Ericsson was defeated by a novice chess player and wondered how this could be possible (Lebowitz, 2016). This led to his interest in exploring how expert level is achieved by individuals in domains other than chess.

There were several researchers that laid the foundation that Ericsson built upon. For example, de Groot (1946/1978) performed an analysis which determined that the specific task that discriminated the chess master's skill level was judgment. Specifically, judgment applied at two critical points: 1) the first move of the game, and 2) a move taken during the mid-point of the game. Newell and Simon's (1972) human information-processing approach theory attributed expert performance to increased learning through experience, while other theories focused on cognitive differences in individuals that resulted in an expert level of performance. One such theory is that of multiple intelligence (Gardner & Hatch, 1989). The theory of multiple intelligence describes the relationship between the intellectual profile of an individual and exceptional performance. Ericsson challenged the theory of multiple intelligence and the human information-processing approach for two reasons. Either they were too difficult to empirically test—due to the amount of time needed to acquire experience—or they were

not generalizable to the greater population of individuals (i.e., those who do not fit the profile of a child prodigy) (Ericsson & Charness, 1994). This work led Ericsson to the expert performance theory. Expert performance is defined as: "…consistently superior performance on a specified set of representative tasks for the domain that can be administered to any subject" (Ericsson & Charness, 1994, p. 731).

Drawing from several studies (Chase & Simon, 1973; Miller, 1956), Ericsson recognized that cognition was a major factor in expert performance (Ericsson et al., 1993). More specifically, Ericsson (1985) found that achieving expert performance requires the ability to store experiences in the short term, and subsequently, long-term memory banks. In Ericsson's (1985) "Memory Skill" study, math experts and math students were tested to determine if a math experts' memory was more advanced than a math student's. The study revealed that both experts and students can have short-term recall, leading to Ericsson's (1985, 1988) findings that experience and practice can balance the level of expertise on a specific task through short-term recall. Ericsson suggests that the more familiar an individual is with materials, the able they are to quickly match information stored in long-term memory with "chunks" of information stored in short-term memory, thus increasing their overall performance (Ericsson & Kintsch, 1995).

Based on a fundamental belief that a novice does have the potential to become an expert, Ericsson sought to identify a method to bridge that gap and defined three key elements required to obtain expert level performance: (1) measurable outcomes that justify the level of expertise, (2) significant increase in new skills instead of minor

refinement of existing skills, and (3) performance improvement derived from focused, structured, and intentional learning and refinement (Ericsson & Charness, 1994).

Deliberate Practice

Ericsson and Charness (1994) suggested that, through deliberate practice, those with less inherent talent may gain the capacity to perform at expert levels. However, the deliberate practice should not be confused with aimlessly exerting effort through repetitive tasks. Rather, the deliberate practice must be highly demanding, focused, and extended over time. Deliberate practice also requires that the full attention of an individual be directed toward targeted improvement plans designed to identify strengths and weaknesses. Within the deliberate practice, there must be a repetition of effort that includes feedback loops from an observer and self-evaluation regarding improvement. Therefore, goals and strategies must be established for deliberate practice to be effective (Baron & Henry, 2010; Ericsson & Charness, 1994). In sum, the deliberate practice must be "challenging, effortful, and not inherently enjoyable" (Coughlan, Williams, McRobert, & Ford, 2014, p. 449).

The following sections provide a theoretical background on five of the major components of deliberate practice: 1) focused effort, 2) feedback loop, 3) task specification that must be included in the deliberate practice plan, 4) focusing on the areas of weakness, self-evaluation, and repetition of tasks, and 5) the element of time.

The Role of Focused Effort in Deliberate Practice

Coughland, Williams, McRobert, and Ford (2014) sought to identify and explore the underlying structure of deliberate practice in the context of a specific sporting

environment, Gaelic football. Results from their study indicate that more advanced players had greater improvements in their performance after being subjected to a deliberate practice protocol, as compared to more novice players. These results held through the retention test (which was administered six weeks after the post-test), suggesting more permanent changes in their learning. Results also indicated that the advanced players rated their practice sessions as more physical and more effortful compared to less advanced or intermediate players. Essentially, the harder an individual pushes themselves in practice, the better the individual can expect to perform. Coughland et al.'s findings support Galton's (1869) argument that superior performance requires "doing a great deal of very laborious work" (p. 37). Thus, deliberate practice needs to be difficult and tailored to the ability of individuals to get the best results.

Studies of deliberate practice have used "think out loud" techniques to gain a better understanding of how expert performers process information that becomes the basis of their decisions (Ericsson & Simon, 1998). Once the basis of decision making is determined, an individual can practice building the thought process (Ericsson & Simon, 1998). One case study conducted by Horrocks et al. (2016) explored the decision-making process in elite level sports, specifically the performance of an elite level football player from Europe. The data demonstrated that positive thoughts, visualization, and mental rehearsal of contingency plans for different scenarios were unique and critical components to the deliberate practice. The study also presented interesting results regarding the decision-making process. The elite athlete showed that his decision-making process involved the assessment of information, cross-referencing information against previous experience, categorizing information, and taking action. Overall, the

results of this study demonstrate that consistent, deliberate practice does indeed influence performance and that, regardless of the level of activity, the deliberative practice can greatly shape an individual's decision-making process.

Ericsson and Charness (1994) found that a strong linkage exists between intense training and cognitive resources whereas "extended training alters the cognitive and physiological processes of experts to a greater degree than is commonly believed possible" (p. 726). The field of medicine is one field that has benefited greatly from the implementation of deliberate practice. Research has demonstrated the effectiveness of this method for training medical students in developing expert performance. In a 2013 study, Kulasegaram, Grierson, and Norman provided a review of research exploring the relationship between deliberate practice, individual ability, and cognitive factors such as working memory. This review was conclusive in that all the studies reviewed indicated that deliberate practice supports and precedes the development of expert performance. However, their results also suggest that individual cognitive factors and abilities are predictive of expert performance if one controls for deliberate practice. Their finding suggests that, while deliberate practice is effective, there are individual factors that influence expert performance, specifically cognitive factors. This, in turn, indicates that the assessment of individuals regarding cognitive ability, experience, and working memory is critical in the process of implementing deliberate practice to cultivate expert performance.

Vandervert (2007) explored deliberate practice with physicians and found a link between deliberate practice and cognitive resources. Specifically, the author

demonstrates the interplay between the cerebral cortex and the cerebellum, which influences the development of expert performance resulting from deliberate practice. Mitchell, Banaji, and Macrae (2005) also noted a distinct interplay between the prefrontal cortex and the cognitive aspects of the cerebellum. Vandervert (2007) further explained that there is a parallel process, or mirroring effect, that takes place in the repetitive working memory processes in the prefrontal cortex and at the same time, these processes are modeled in the cerebellum. The point of this parallel process or mirroring is that as the cerebellum feeds back information that has been gained through a deliberate process, working memory becomes faster resulting in higher arousal and attention control. This interplay between the prefrontal cortex and working memory and the modeling in the cerebellum provides a neurological explanation for how deliberate practice results in expert performance.

The Role of Feedback in Deliberate Practice

For deliberate practice to be effective, it requires individualized training and consistent feedback from a teacher, mentor, or coach (Ericsson, Krampe, Tesch-Romer, & Heizmann, 1993). Matsuo (2014) conducted an empirical study of Japanese firms to examine the impact of the skills of corporate trainers' instructional skills for on-the-job training and the impact these skills have on experiential learning. The researcher collected data through questionnaires administered to corporate trainers. The results of this study demonstrated that on-the-job trainers are effective at facilitating experiential learning. Furthermore, trainers may more effectively meet learning objectives when the

trainer consistently monitors progress toward goals, provides positive feedback, and promotes positive personal accountability.

Ericsson (2004) stressed that for performance to be measured, the performance needs to be observed while performing representative tasks. However, one problem with obtaining a level of expert performance is time. Specifically, expert performance even amongst prodigies is gradually developed over time, not in an instant (Ericsson, 2004). One example provided by Ericsson (2004) to remediate the issue of time was the study of previous elite performances. The author found that elite chess players spend time studying elite matches for up to four hours daily. This idea suggests that the use of business case studies and the continued study of these case studies could provide a context for business leaders and entrepreneurs to develop mastery through the process of deliberate practice in the context of business decision-making.

The Role of Repetition in Deliberate Practice

Since deliberate practice is based on intense practice and repetition of tasks, it is inherently not enjoyable (Ericsson & Charness, 1994). Therefore, there must be a period of rest to recover physically and mentally. In a study of expert violinists, the analysis determined that practice be limited to a duration of no more than 1.5 hours before resting (Ericsson, Krampe, Tesch-Romer & Heizmann, 1994). One interesting concept applied in a 2016 study was prioritization. Lidor, Tenenbaum, Ziv, and Issurin (2016) sought to specifically explore the literature, which is focused on the impact and implications of periodization of training in the overall process of deliberate practice. Periodization is defined as the process of breaking up training and specific, deliberate practice activities

into smaller easier to manage chunks. Before 2016, no study had explored the relationship between periodization and potential impacts on deliberate practice. However, the literature reviewed indicated that periodization is best broken into three cycles, namely: establish a specific skill, master the skill, and then implement the skill into a greater skill set. The literature also indicated specific benefits associated with the periodization of training. One significant benefit of periodization is the optimal use of time spent training. By following the three-step process described above, the individual is better positioned to experience greater success within each phase; therefore, seeing a return on the investment of time. Another benefit is the development of multiple skills across performance domains, which is particularly important in the business domain as this leads to greater cost efficiencies (Lidor et al., 2016). This article suggests that the benefits of periodization are substantial for deliberate practice and that the benefits of periodization can have an impact on reaching expert performance in the business arena.

The Role of Building Areas of Weakness in Deliberate Practice

It is interesting to note that literature describes the application of deliberate practice across all stages of life. Ericsson, Krampe, Tesch-Romer, and Heizmann (1993) describe three phases of development of expert performance starting from a very young age where there is playful exposure to the domain until talent and interest have been identified. This is followed by formal instruction and increased practice, followed by mastering the skill and increased deliberate practice. During these phases, focused attention is given to strengthening areas of weaknesses.

Pachman, Sweller, and Kalyuga's (2013) study on "Levels of knowledge and deliberate practice" focused on areas of weakness or problem areas for eighth-grade students in geometry. The researchers specifically wanted to know how to best structure deliberate practice activities aimed at improving problem areas or areas of weakness. The most interesting result of this seminal study was regarding the differences observed between more knowledgeable learners and those learners who were less knowledgeable. The more knowledgeable learners had better improvement rates because of the deliberate practice intervention. For less knowledgeable learners, focusing on all the areas identified as weak, through deliberate practice, did not result in drastic improvements after the intervention. These results imply that those who have some skill and capability reap better benefits and results with deliberate practice.

While it is paramount that individuals engage in focused activities designed by a teacher motivated to strengthen areas of weakness, effectiveness is derived when those activities are realistic. Causer, Barach, and Williams (2014) present some worthwhile perspectives on capturing and measuring deliberative practice. The authors stress that scenarios in which deliberative practice is to be measured should be based on real-world contexts, and should tap the perceptual and cognitive processes that are used in the performance of the task. Another novel aspect of this study is that the authors introduced the usage of simulators for the process of measuring deliberate practice. Causer et al. (2014) point out that the introduction of simulation allows deliberate feedback to be provided in a controlled environment. Verbal reports were also identified as a useful mechanism for identifying and exploring the cognitive structures in complex tasks. This

suggests that verbal reports of specific business decisions and tasks could help facilitate the type of feedback needed to reinforce positive aspects of deliberate practice.

The Role of Self Reflection in Deliberate Practice

Deliberate practice requires feedback not only from the instructor but also self-reflection. Duvivier, van Dalen, Muijtjens, Moulaert, van der Vleuten, and Scherpbier (2011) conducted a study of medical school students and used a self-reflection measure designed to measure aspects of deliberate practice. There are some promising aspects for specific scales such as planning and study style/self-reflection. The results from the study demonstrated that there were increases in scores on planning behavior and organization of work among upper-class medical school students compared to the newer students. These results suggest that deliberate practice does have an impact on performance over time, via planning behaviors and a tendency to structure work.

The Role of Time in Deliberate Practice

There is great debate about the length of time required to become an expert (e.g., Schneider, 1993; Ward, Hodges, Williams, & Starkes, 2004). In his book, *Outliers*, Malcolm Gladwell (2008) popularized the concept of 10,000 hours of practice over ten years leading to expert performance across all domains. This was somewhat loosely based on studies performed by Ericsson. One such study by Ericsson et al. (1993) examined the amount of practice required to become an expert violinist among groups of adult violinists with varying levels of current performance (best, good, and music teachers). Through a combination of data collection techniques that included interviews and diaries, the violinist identified the specific tasks exercised to accomplish deliberate

practice and the amount of time spent on those tasks. The results indicated consistent findings that the expert violinist had spent ten years practicing by the age of 23. The amount of time practicing per week was 24.3 hours (Ericsson et al., 1993), which equates to 3.5 hours per day; 12,775 total hours of practice over ten years, which is greater than the 10,000 hours reported by Gladwell (2008).

In another study conducted by Dew, Read, Sarasvathy, and Wiltbank (2009), the same data collection process was used to better understand the use of deliberate practice in a different domain, studying the expert performance of pianists. In this study, the diaries reflected 26.71 hours of practice per week or 18,523 hours over 19.1 years. While deliberate practice takes time, entrepreneurs immerse themselves in deliberate practice at a greater rate than most other domains, which may allow them to reach a level of expert performance in fewer years.

Given that life skills are such a significant component of business skills and Baron and Henry (2010) found that deliberate practice in other domains can lead to entrepreneurial expertise, this begs the question: Can those living in conditions requiring a higher need for survival and navigating resources allow them to move swiftly through the deliberate practice concept? Using the swift trust concept (Meyerson, Weick, & Kramer, 1996) as a theoretical basis of understanding when there are time constraints including the productivity in a virtual team, there is a need to accelerate the process of developing trust which is traditionally based on a cognitive construct; however, swift trust is based on action and accomplishing a task (Meyerson et al., 1996).

Another aspect of time involves the age of introduction to the domain. In the attainment of expert performance, the research shows that age matters (Bloom, 1985). Across domains such as music, chess, and sports, studies show that those reaching the highest levels of expertise as a violinist began practicing at age five (Ericsson et al., 1993), while chess masters who reached the highest level of expertise began practicing at 9.75 years old (Avni, Kipper & Fox, 1987). Runners reaching national levels of recognition as expert performers started practicing at 10.5 years old (Sacks & Sachs, 1981). Research also indicates that performances begin to plateau between age 20 and 40 (Ericsson, Nandagopal, & Roring, 2009). In summary, elite performance is best reached when individuals are exposed to deliberate practice methods in their youth.

The Role of Task Identification in Deliberate Practice

When considering deliberate practice outside of the music and sports domains, and more specifically in the world of work, there must be consideration of different tasks that are based on the core competencies required for optimal performance (Sonnentag & Kleine, 2000). For example, in a multi-method study of 100 insurance agents, Sonnentag and Kleine (2000) identified two categories associated with deliberate practice in the workplace: core and supporting activities. While the average amount of experience in the field was 11.9 years, the results showed that years of experience was not a significant predictor of performance. However, the volume of opened, assessed, and closed insurance claims cases by an individual was a significant predictor of performance. The more time the insurance agent spent managing cases, the higher their performance as rated by their supervisor. The findings suggest that deliberate practice in the workplace

is less about time across multiple years and more about the focused attention and deliberate practices performed currently. Sonnentag and Kleine's (2000) study demonstrates that deliberate practice is performed in the workplace and not always on specific tasks, but rather time spent on building a specific competency needed to reach a professional goal.

Another example of deliberate task identification in the workplace was demonstrated in a clinical setting. After interviewing 50 physicians, Van de Wiel, Van den Bossche, Janssen, and Jossberger (2011) identified the criticality of appropriate diagnosis and treatment of patients. While all physicians recognized the tasks that must be practiced throughout the day to become stronger in this competency (e.g., researching compliance to protocols), only medical residents were motivated to practice this task regularly versus more experienced physicians. The more experienced physicians were primarily focused on tasks related to providing high-quality care to their patients. This study demonstrated the importance of self-regulated learning in the workplace. According to Van de Wiel et al, individuals must be motivated to improve core competencies, and institutional governance must be in place to impose consequences for those who are not becoming stronger in those required core competencies.

Dunn and Shriner (1999) provided another example of core competencies identification driving task level development, but this time in the teaching profession. In their two part-study, teachers identified activities related to planning and evaluation as most relevant to their overall job performance. Dunn and Shriner found that not only were these activities task-relevant, but the teachers reported that these tasks required a

great deal of focused effort, time, and were not highly enjoyable—the three fundamental components of deliberate practice. Dunn and Shriner's study did not discriminate between those that were considered expert versus novices, as the level of experience and expertise varied within the sample. The second part of their study included only those teachers with ten or more years of experience and a high performance rating from supervisors and experienced teachers. The teachers maintained a diary for 14 days and recorded activities in 15-minute increments. Interviews were also conducted with each of the teachers. Interestingly, Dunn and Shriner's (1999) findings were in alignment with Ericsson et al.'s (1993) violinist study whereas the more expert teachers spent on average 3.4 hours per day on those tasks related to improving classroom performance.

In summary, time is an important component of deliberate practice, but should not be measured simply by the days on a calendar or the hands on a clock. Instead, there must be a consideration for the core skills directly related to entrepreneurial success. The earlier an individual is exposed to entrepreneurship and able to practice those skills in their current circumstances the more effective they will be in demonstrating expert performance.

Deliberate Practice in Entrepreneurship

There is scant literature regarding deliberate practice applied in the entrepreneurship domain; however, those published in top-tier journals (e.g., Keith, Unger, Rauch, & Frese, 2016; Ucbasaran, Westhead, & Wright. 2009) offer a solid foundation on which to build.

Bloom (1985) found that most experts who reached exceptional performance, as measured by winning national competitions, were exposed to the domain in a "playful" way at a very early age. Once talent has been demonstrated, more directed coaching is used to become stronger in that area. While no studies were found regarding the appropriate age to introduce entrepreneurship, I offer middle school age as a prime time to begin to provide direct coaching regarding core competencies. Fouad and Smith (1996) provided empirical evidence that linked self-efficacy beliefs to career choice goals for middle school students. By the time students reach middle school age, there have been approximately five years exposure to career options, the value of dollars, and personal interest in work styles. Based on the studies that indicate ten years to peak with expert performance, a 12-year-old (sixth grade) middle school student would be 22, and the 14-year-old (eighth grade) middle school student would be 24 years old.

Another key factor to consider is gender. Wilson, Kickul, Marlino, Barbosa, and Griffiths' (2009) findings from their study of 5,000 middle and high school students show that females demonstrated lower levels of entrepreneurial self-efficacy and entrepreneurial intentions than their male counterparts. However, girls who had been exposed to entrepreneurial education had a higher level of self-efficacy and entrepreneurial intentions than those who were not exposed to entrepreneurial training. This further supports the need to expose girls to entrepreneurial education earlier in their lifetime.

A review of the identified literature with a summary is provided in Table 3. The seminal study used as a basis for this current study is Baron and Henry's (2010) "How

entrepreneurs acquire the capacity to excel: Insights from research on expert performance." The authors proposed a multi-level model, as they presented the entrepreneur (the individual level) having an impact on firm performance (the organization level). The measure of success for firm performance was opportunity recognition and identification and acquisition of essential resources. Baron and Henry's study built upon Ericsson's prior work (Ericsson & Faivre, 1988; Ericsson & Kintsch, 1995) that outlined eight key factors of deliberate practice as shown in Table 2.

Table 2

Key Factors of Deliberate Practice

1	Highly demanding requiring focus.
2	Requires identification of weaknesses and program design to improve weaknesses.
3	Continued for a long period of time.
4	Must include repetition.
5	Requires continuous feedback from others.
6	Goals must be established prior to beginning the practice.

Source: Baron & Henry (2010)

7	Self-reflection and observation during practice.
8	Self-reflection after practice.

Baron and Henry (2010) introduce the antecedents of deliberate practice to explain an individual's ability to engage in deliberate practice. Due to the nature of deliberate practice being exhausting and, more times than not, unenjoyable; an individual must be motivated by achievement, believe that they can accomplish the stated goal, exhibit the ability to self-regulate by committing to the practice, and demonstrate organization and persistence without seeing immediate results. Baron and Henry point out that a significant outcome of deliberate practice is increased cognitive resources in various forms. Entrepreneurs who apply deliberate practice will process incoming information and quickly ascertain what is important and what may be discarded. There is also increased working memory by processing new information in a more organized manner based on domain-related concepts. A third cognitive resource that is increased with deliberate practice is the ability to evaluate alternatives and areas of weakness and intuition increases.

Similar to the studies regarding teachers and insurance agents, it is important to define competencies required to become an expert entrepreneur (Man, Lau, & Chan, 2002). Using research on experiential learning (Bandura, 1977; Corbett, 2005; Kolb & Kolb, 2005) as a framework, Baron and Henry suggest that experiential and vicarious learning is "an important route to building expert performance in situation where time

pressures and other environmental conditions provide little opportunity for hours of overt focused practice is offered by exposure to a large number of pertinent, realistic, and highly relevant examples" (Baron & Henry, 2010, p. 57). They go on to offer an innovative approach to applying deliberate practice to entrepreneurship by introducing the notion of transferring deliberate practice in other domains. The basis of this is that deliberate practice in any domain increases cognitive resources, and those resources ultimately improve the entrepreneur's ability to create and grow a new business.

It is certainly logical to suggest that deliberate practice can lead to firm performance, but how does one explain the entrepreneur's motivation to participate in deliberate practice? In a longitudinal study of 442 CEOS and 202 employees, Baum and Locke (2004) found that passion and tenacity were direct predictors of firm performance. One study introduced a distinction between organizational skills (general management, oral presentations) and new resource skill, "the ability to acquire and systematize the operating resources needed to start and grow an organization" (Baum & Locke, 2004, p. 589). This is important, as the authors argue that organizations suffer from lack of growth due to the failure to acquire new resource skills. This suggests that entrepreneurs may have more success if they identify the new resource skills required and apply deliberate practice to those specific skills. Since the nature of deliberate practice required when developing these new resource skills can be strenuous, understanding the motivation factors are critical. In Baum and Locke's (2004) study, passion was not directly linked to firm performance but there was an indirect relationship. This indicates that passion alone does not explain the attainment of new resources, but will indirectly motivate the action to obtain better skills in a particular area. This may be particularly

true when the activities closely align with their self-identity, e.g., inventor (Cardon, Wincent, Singh, & Drnovsek, 2009). However, Baum and Locke's (2004) study identified a significant and direct line between self-efficacy and firm performance, which supports the notion of self-efficacy as an antecedent to deliberate practice.

In the last decade, there has been increased attention on learning more about how entrepreneurs think (Baron, 1998). Throughout the literature review, there is a shared understanding that a core competency of entrepreneurs is the ability to identify opportunities (Ucbasaran, Westhead, & Wright, 2009). This is often what separates successful entrepreneurs from the general population. As it relates to the cognitive resources that are increased through deliberate practice, drilling down further to understand entrepreneurial cognition makes sense. Literature defines entrepreneurial cognition as "The knowledge structures that people use to make assessments, judgments, and decisions involving opportunity evaluation and venture creation and growth" (Mitchell, Busenitz, Lant, McDougall, Morse & Smith, 2002, p. 97). As entrepreneurs gain experience, they begin to develop different knowledge structures, which guides their ways of thinking and behaving due to the method of which they process information (Kirzner, 1979).

Mitchell et al.'s (2002) study provided an in-depth review of theories leading to a greater understanding of entrepreneurial cognition and provided support for the relationship between entrepreneurial cognition and entrepreneurial performance. This article applies the heuristics-based logic to entrepreneurs in an interesting fashion. That is, entrepreneurs use shortcuts in processing information to inform their decision-making.

To a large extent, these shortcuts are based on personal experiences taken from the entrepreneur's belief system. According to the authors, entrepreneurial expertise theories support the notion that entrepreneurs run scripts that allow them to access information that increases their entrepreneurial abilities and success.

A business owner's ability to learn is critically important to the success of the business (Ucbasaran et al., 2009)—not only with regard to the amount of learning but also the quality of the learning. Ucbasaran, Westhead, and Wright (2009) studied how both quality and quantity of deliberate practice impacted the performance of small business owners in Uganda. The basis for the quantity measure was a sum of activities performed with the purpose of enhancing knowledge and skills. The quality measure was based on the amount of learning that took place when the activity was performed. The combination of the scores formed a deliberate practice overall index. The study confirmed that deliberate practice has a significant effect on entrepreneurial knowledge and mediates the relationship with business growth. The study also indicated that when entrepreneurs were more educated and had higher cognitive abilities, they engaged in more deliberate practice. This further supports Baron and Henry's point regarding the impact that deliberate practice has on cognitive resources. This study suggested that deliberate practice of information processing is a valuable activity for successful entrepreneurs. Also, cognitive resources impact the extent of deliberate practice, as opposed to deliberate practice impacting cognitive resources. According to Keith et al. (2016), entrepreneurs must be intentional about learning to learn.

The Role of Socio-Economic Factors

The present study includes a population of girls primarily living in urban communities; therefore, the researcher explored literature regarding socio-economic factors that would provide further context for this study. Socio-economic factors related to gender, ethnicity, and income level are important factors to consider when exploring characteristics of successful entrepreneurs. The next section provides a summary of literature related to these topics.

Gender

According to the National Association of Women Business Owners (n.d.), businesses owned by women accounted for 9.1 million firms in 2015 which was a significant increase over the 5 million firms in 1997. The rise of female-owned businesses has drawn the attention of researchers, who seek to identify the differences between female and male entrepreneurs (Fischer, Reuber, & Dyke, 1993; Greer & Greene, 2003). While limited, literature available in this area is deeply rooted in feminist theories.

Greer and Greene (2003) examined how three prevailing feminist theories—liberal, Marxist, and radical—offer a unique perspective on advancing the work of building female entrepreneurs. Liberal theories focus on legal or institutional barriers to women and making women and men equal. The Marxist perspective places significance on the household contributions of women and the inequity that exists when those contributions are not calculated and shared equally between men and women. Women

strategize to factor in paid and unpaid labor in structuring their lives, which can sometimes lead to selecting less profitable ventures than male counterparts.

The Marxist perspective could explain why women-owned businesses continue to lag male-owned businesses from an annual revenue perspective. For example, according to the U.S. Small Business Office of Advocacy Issue Brief (McManus, 2017), in 2016, male-owned businesses annual revenue was $9 billion versus $1.4 billion for female-owned businesses. There were two contributing factors: 1) women elect to enter industries that allow them to invest in maintaining their household as well as build their businesses, and 2) women were least likely to employ others in the business (McManus, 2017). Balancing work and home is a major theme for women business owners, in balance was the principal motivator for entrepreneurship identified in a study of 94 women entrepreneurs in Florida (McAtavey, 2002).

Finally, the radical feminism perspective views women and men as different and suggest that men have often used these differences to create the "glass ceiling" that makes it virtually impossible for women to compete in the workplace and as an entrepreneur (Greer & Greene, 2003). Findings from Mattis' (2004) using a sample of 800 U.S. business owners revealed that women business owners had less education than those in corporate America. Therefore, they attempt to shatter the glass ceiling without obtaining additional education by becoming self-employed.

Fischer, Reuber, and Dyke (1993) studied the differences in male and female entrepreneurs on two feminist theories, liberal and social. Liberal feminism focuses on

equality for all humans with an emphasis on every individual having the ability to reach the same goal. The authors concluded that women had not reached their full potential because of the lack of access to the same opportunities as men, such as education. Once legal barriers are removed, and women gain equal access, the psychological gap would close. Fischer et al. (1993) identified three forms of discrimination that existed based on previous studies: 1) unequal lending practices (Belcourt et al., 1991); 2) unrelated education to the business venture (Belcourt et al., 1991); 3) lack of management and relevant enterprise experience (Belcourt et al., 1991). These three elements combined create an unbalanced playing field and place the female entrepreneur in a disadvantaged position. This provides insight into the current research study, as the proposed intervention aims to provide support to close the gap by providing experiential knowledge through discussions with seasoned entrepreneurs.

The second feminist theory is social feminism, which is based on the social learning theory. In this theory, women and men are not fundamentally the same, from birth their experiences are different and based on social experiences (Fisher, Reuber, & Dyke, 1993). Individuals begin to believe they are capable of achieving based on the norms placed on them by society. For example, Smith and Miner (1983) suggest that women may be more crafts focused and not as driven toward business opportunities.

Fischer, Reuber, and Dyke (1993) conducted a study to close the gap in the literature surrounding the impact of the two feminist theories and how the theory shapes the experience for female entrepreneurs. Their study consisted of entrepreneurs in 908 manufacturing firms, 908 retail firms, and 908 service firms and determined there was

little to no difference in access to opportunities such as education, except that men had more production-related education. However, other majors such as general, marketing, finance, personnel, accounting, and strategy were relatively equal. The study revealed that men had more experience managing people and experience in the field of their venture. Additionally, men had more experience helping start other business. One interesting outcome of the study was that women were more motivated to have financial gain than men. The study results revealed that men had larger firms with greater annual sales and income. This study demonstrates that women are driven monetarily, but may select business opportunities in fields that are as lucrative as their male counterparts. Hence, the importance of introducing young girls in their formative years (middle school) to fields that create a higher potential for sales dollars, allowing them to reach desired financial goals in the future. Understanding the feminist theories is essential to the current study as the population is 100% female; therefore, understanding what drives the motivation for women to become entrepreneurs provides a further understanding of how deliberate practice methods in entrepreneurship can be properly applied to this population.

Ethnicity

The feminist theories provide a broad perspective for women in entrepreneurship; however, to fully understand the target population of the present study, recognizing the societal differences that exist within the female population, specifically the African American and non-minority populations, is paramount to the discussion.

According to the Womenable's (2016) "State of Women-Owned Business Report", the number of businesses formed by women of color has increased by 45% over the last nine years. In fact, as of 2016, 1.9 million African American women-owned businesses generated $97 million annually. To better understand the drivers for African American women leaving corporate America and becoming self-employed, the researcher investigated the experiences of African American women in the workforce. Bell and Nikomo (1997) completed a fascinating study of African American and white female leaders in Fortune 500 firms. In the study, three pivotal themes are identified as the basis of the perspective used in navigating through corporate America: 1) childhood experiences including the role of the father in their lives; 2) the early career experiences that exposed them to options to explore their careers by "stumbling" into new roles; and 3) view of themselves and relationship with others. Their findings show that African American women found it difficult to receive credit for their work and often faced demotions and lateral moves more often than their white counterparts. They often are unable to express their identity due to a lack of cultural acceptance by majority groups; this creates a challenge for African American women to commit to the organization fully. Finally, African American women seek organizations that support their communities and causes that are important to them. The combination of these findings could certainly explain the increase in the number of African American talent leaving the workplace to create an environment where they feel accepted.

Smith-Hunter and Boyd (2004) provide further insights on the motivation of African American female entrepreneurs in their study of 60 business owners in upstate

New York. The findings of this study indicate that African American women were motivated by accomplishment, such as more money and independence. This study's findings also suggested that African American women were more prone to seek opportunities than white women.

While the number of African American women business owners has increased, the average income compared to non-minority women business owners is of concern. There is a significant disparity in the average annual revenue generated by non-minority firms—$201,948 compared to African American women-owned firms $26,550 (Womenable, 2016). The industries selected explains the difference in revenue generation. African American women primarily select businesses such as hair salons, child care services, and home health care. This may be explained simply because they are more familiar with these industries compared to fields that command higher revenues from scientific and technical services.

Building upon social learning theories may be one way to promote equality in this area. When African American ethnic groups are exposed to entrepreneurship through mentors in their families or within the overall community, individuals begin to see the possibility of becoming an entrepreneur including the specific industry they will enter (Scherer, Adams, Carley, & Wiebe, 1989). Role models act as a catalyst for individuals becoming entrepreneurs. Scott and Twomey (1988) found that students whose parents were entrepreneurs were significantly more likely to perceive themselves as potential entrepreneurs. A study conducted by Ohio State University (Page,1997) found that girls were more likely to become entrepreneurs 24% of the time compared to

13% of the time if the mother was not an entrepreneur. This directly relates to the present study as the Envision Lead Grow program will introduce entrepreneurship to young girls in communities heavily populated with African American members. The Envision Lead Grow program will connect young girls to women who are members of their community whom they can identify with as they share ethnicity. This connection with another woman in the community may serve as a proxy for their mother or guardian, and therefore increase the number of girls who will become an entrepreneur.

Poverty Level

In 2016, 40.6 million people lived in poverty within the United States (Semega, Fontenot, & Kollar, 2017); yet, there is virtually no coverage in entrepreneurship and management journals regarding entrepreneurship as a method to move individuals from poverty to sustainable living within the United States. The few articles found in entrepreneurship journals included a global population; however, the concepts were generalizable to the United States.

Hayhurst (2014) evaluated the effectiveness of a Nike-sponsored entrepreneurship program in Uganda where girls used sports concepts to become entrepreneurs. The design was interesting in that it employed an ethnography data collection methodology to explore aid relations among various organizations to measure the effectiveness of this program to fight against poverty. The study found that the program was a viable strategy to promote survival and increase innovation and financial awareness. This article provides insight to the present study, as the population represented is similar, girls, and

described the ability of girls to use their passion to bring income to their communities, which is like the proposed Envision Lead Grow program.

Khavul, Chavez, and Bruton (2013) studied the effectiveness of micro-lending using a population from Guatemala. This study was also a qualitative research design, where data was collected by conducting 57 interviews. The study found that institutions were slow to change their views of lending to entrepreneurs living in poverty. While these entrepreneurs are innovative and committed exerting the effort to build businesses that elevates their family out of poverty, the support has not changed through the 15 years explored in this article. This demonstrates the importance of not only educating the entrepreneur, but also the community at-large to ensure the infrastructure exists that will allow entrepreneurs to thrive. Thus, the researcher turned to sociology literature to learn more about how the entrepreneur exists within society.

When searching in the sociology discipline, research described effectuation as a method to take control of uncertainties even in resource-poor circumstances (Bhowmick, 2011). Bhowmick (2011) performed a qualitative analysis using three case studies to test effectual control in the formation of three new ventures. Bhowmick introduces an interesting concept of "dialectic of control" which includes the actions of others as well as the entrepreneur as a theoretical basis to explain how those without financial resources overcome the obstacle to becoming successful entrepreneurs. Sarasvathy's (2001) study on "Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency" used the entrepreneur effectuation theory which include the notion of: 1) considering affordable loss, 2) building strategic alliances, and 3) risk

planning. This applies to the current study in that the girls will have limited resources; however, it will be important that their business-planning process includes not only capitalizing on their personal skills but leveraging the relationships they build with one another as well as the entrepreneurs they meet during the program.

In conclusion, when answering the question regarding what makes an individual an effective entrepreneur, researchers must take into consideration how the individual views themselves as well as how society views the individual. The statistics indicate that African American female business ownership is on the rise; however, the challenge is ensuring the success of these business owners. This present study applies the deliberate practice model (Baron & Henry, 2010) to entrepreneurship in a very specific population, young African American girls living in poverty. This study's goal was to demonstrate that programs such as Envision Lead Grow can serve as a proxy for the influence that an entrepreneurial parent would have on the lives of the young ladies. By exposing the young girls to entrepreneurship while in middle school, they will be able to envision themselves as future business owners and embrace the opportunity to learn how to build a future for themselves that will elevate them out of poverty.

Table 3

Summary of Deliberate Practice in Entrepreneur Journal Articles

Title	Author	Year	Women	Independent Variable	Dependent Variable	Empirical (E) / Conceptual (C)Summary
The relationship of entrepreneurial traits, skill, and motivation to subsequent venture growth.	Baum, J.R., & Locke, E.A.	2004	N	passion, tenacity, new resource skill, vision communication, self-efficacy, goals	venture growth, new resource skill, vision communication New resource skill Communicated Vision	E
This longitudinal study used data collected over a six-year span of founder/CEOs and employees to build upon the personal, organizational, and environmental factor theories as well as the tenacity, passion, and deliberate practice theories. The researcher argued that deliberate practice impacts the level of expertise and the level of passion directly influences the amount of deliberate practice an entrepreneur will engage in thus improving firm performance. However, the data did not support that passion, tenacity, nor new resource skill development has a direct impact on firm performance. However, the data supported increased tenacity leading to increased resource skills. It also supported self-efficacy having a direct impact on venture growth. The data revealed that the						

Title	Author	Year	Women	Independent Variable	Dependent Variable	Empirical (E) / Conceptual (C)Summary
passion and tenacity and new resource skills has an indirect effect on venture performance through higher goal establishment and stronger communicated vision.						
The central question in entrepreneurial cognition research.	Mitchell, R. K., Busenitz, L. W., Bird, B., Gaglio, C.M., McMullen, J. S., Morse, E. A., & Smith, J. B	2007	N	N/A	N/A	C
This article analyzes information obtained from two conferences and three Special Issues on entrepreneurial cognition. The work provides many questions that can be answered through additional research regarding various aspects of entrepreneurial cognition, based on an overall assumption that entrepreneurs develop very different knowledge structures and gain expertise in processing new information based on the entrepreneurial function which is supported by the seminal work of Kirzner (1979), McClelland (1976), and Schumpeter (1934). Foundational theories were discussed including Neisser's (1967) definition of						

Title	Author	Year	Women	Independent Variable	Dependent Variable	Empirical (E) / Conceptual (C)Summary
cognition. The study describes sub-streams of literature including cognitive heuristics, entrepreneurial alertness, expert-based scripts, mental simulations, and cognitive style. Entrepreneurial expertise through deliberate practice is described.						
Deliberate practice among South African small business owners: Relationships with education, cognitive ability, knowledge, and success	Unger, J. M., Keith, N., Hilling, C., Gielnik, M. M., & Frese, M.	2009	Y	Deliberate practice Entrepreneurial knowledge Education Cognitive ability	Entrepreneurial knowledge Success Deliberate practice Business growth	E
This study empirically tested deliberate practice theory using 90 founder/business owners in South Africa. Based on expert performance and resource-based view theories, researchers provided evidence to support the positive direct impact that deliberate practice has on entrepreneurial knowledge leading to greater firm success. There was also evidence that cognitive ability had an effect on firm success indirectly through entrepreneurial knowledge. This model also demonstrated that cognitive ability actually influenced the ability of the entrepreneur to participate in deliberate practice.						

Title	Author	Year	Women	Independent Variable	Dependent Variable	Empirical (E) / Conceptual (C)Summary
The extent and nature of opportunity identification by experienced entrepreneurs.	Ucbasaran, D., Westhead, P., & Wright, M.	2009	Y	Entrepreneur's business ownership experience Entrepreneur's prior business ownership experience Failed businesses relative to the number of businesses owned	Number of opportunities identified Innovativeness of latest opportunity exploited	E
Based on cognitive and motivation theories, this study provides evidence that there are diminishing returns for number of opportunities identified by entrepreneurs and level of innovation for opportunities once an entrepreneur reaches more than 4.5 businesses. The study also supports that the number of failed businesses also creates an inverse U-shape relationship with opportunity identification and innovativeness. This may be explained by overconfidence and decision-making biases that come with experience. The authors point out that deliberate practice may be a mitigation strategy to decrease this risk.						
Effectual versus predictive logics in entrepreneurial	Dew, N., Read, S., Sarasvathy,	2009	N	Experience in business	Logical framing	E

Title	Author	Year	Women	Independent Variable	Dependent Variable	Empirical (E) / Conceptual (C)Summary
decision-making: Differences between experts and novices.	S.D., & Wiltbank, R.					
The theoretical basis for this study was expert performance. Based on a qualitative research methodology using 27 expert entrepreneurs and 37 novices (MBA students), the authors found significant evidence that experts use a different logical framing than novices. Experts are more likely to openly discuss business concepts and identify more new markets than novices. Novices are more likely to accept market research as fact. The authors explain the difference between the expert and novice participants as a factor of deliberate practice.						

Title	Author	Year	Women	Independent Variable	Dependent Variable	Empirical (E) / Conceptual (C)Summary
Effectual versus predictive logics in entrepreneurial decision making: Differences between experts and novices: Does experience in starting new ventures change the way entrepreneurs think? Perhaps, but for now, “caution” is essential.	Baron, R.	2009	N	N/A	N/A	C
How entrepreneurs acquire the capacity to excel: Insights from research on expert performance.	Baron, R.A., & Henry, R.A.	2010	N	N/A	N/A	C

Title	Author	Year	Women	Independent Variable	Dependent Variable	Empirical (E) / Conceptual (C)Summary
The authors provide a model that identifies antecedents that will allow an entrepreneur to engage in deliberate practice to include self-efficacy, self-control, metacognition, and delay of gratification. Due to the dynamic nature of entrepreneurship, traditional methods of determining tasks for deliberate practice are nearly impossible; therefore, the authors offer vicarious and experiential learning as an option and introduces the notion of transferring past experience in performing deliberate practice in other domains. The authors point out that through deliberate practice entrepreneurs may enhance skills related to increased firm performance by increasing skills in opportunity and resource identification and acquisition.						
Drawn to the fire: The role of passion, tenacity and inspirational leadership in angel investing	Murnieks, Cardon, Sudek, White, & Brooks.	2016	N	Entrepreneurial passion of the founder, tenacity of the founder Inspirational leadership ability of the founder	Angel investor's desire to invest in the new venture led by the entrepreneur	E
This article provides a two-part study. The first study uses a qualitative method to define passion from the perspective of angel investors. Of the seven themes that emerged, tenacity was represented by 44% of the responses. This rating was associated with the thought that entrepreneurs who are more passionate will be intrinsically motivated to continue pursuing goals and overcome adversity. The second study asked angel investors to rank their probability of investing						

Title	Author	Year	Women	Independent Variable	Dependent Variable	Empirical (E) / Conceptual (C)Summary
based on passion, tenacity, and inspirational leadership. The results indicated that the level of passion and tenacity increased the probability of the investment. This study argues that while there is a link between passion and tenacity, there are two distinct constructs. For the purpose of the current study, both can explain two characteristics that allow entrepreneurs to participate and achieve greater firm performance with deliberate practice.						
Informal learning and entrepreneurial success: A longitudinal study of deliberate practice among small business owners.	Keith, N., Unger, J. M., Rauch, A., & Frese, M.	2016	Y	Deliberate practice Dynamic environment	Firm performance Entrepreneurs perception of firm performance Interviewer's perception of firm performance Number of employees	E
This article built on the work insurance agent's cognitive ability. The study was the first of its kind to conduct a longitudinal study on deliberate practice in entrepreneurship. The study determined that deliberate practice was not necessarily correlated with all success factors and was most significantly linked to the						

Title	Author	Year	Women	Independent Variable	Dependent Variable	Empirical (E) / Conceptual (C)Summary
interviewer's perception of firm success. The study also indicated that deliberate practice is more likely to increase firm performance in most measures when moderated by a dynamic environment. When there are more stable environments, deliberate practice does not seem to have as strong of an influence.						
Passion and habitual entrepreneurship.	Thorgren, S., & Wincent, J.	2015	Y	Harmonious passion Obsessive passion	Habitual entrepreneurship	E
This study used the Vallerand et al.'s Dualistic Model of Passion (DMP) as a basis to explore the impact of two types of passion on an entrepreneur's pursuit of entrepreneur activity defined as habitual entrepreneurship. 704 Swedish entrepreneurs completed a survey to determine if harmonious passion and obsessive passion influenced the level of habitual entrepreneurship an individual participated in. The findings revealed that obsessive passion was more significantly linked to habitual entrepreneurship. This relates to the current study as both types of passion have a significant influence on the level of deliberate practice that an entrepreneur participates in.						
Knowing what to do and doing what you know: Effectuation as	Read, S., & Sarasvathy, S.D.	2005	N	N/A	N/A	C

Title	Author	Year	Women	Independent Variable	Dependent Variable	Empirical (E) / Conceptual (C)Summary
a form of entrepreneurial expertise.						
Sarasvathy's effectuation theory serves as the foundation of this article. The authors explain four views on the expertise that include the individual differences, knowledge structures, experience, and deliberate practice. The authors provide examples of how the five key elements of deliberate practice should be applied to entrepreneurship as motivation, understandability, feedback, repetition, and fit. This article provides the most specific examples of entrepreneurial tasks that lend themselves to deliberate practice in entrepreneurship with specific repeatable sub-tasks and feedback elements. The article discusses the differences between expert and novice entrepreneurs as it relates to predictive or causal rational versus effectual decision-making. The article also provides examples of effectual principles as they relate to entrepreneurial tasks.						

CHAPTER III

HYPOTHESIS DEVELOPMENT

For decades, researchers have explored the question of whether experts are born or created. Theories range from individual differences through inherited traits such as height, speed, and intelligence (Galton, 1869) to a fundamental understanding of cognition based on how an individual stores and accesses knowledge (de Groot, 1978). Other researchers have explained the level of exceptional performance as a factor of experience (Rabin, 1998); however, within the last three decades, deliberate practice has emerged as a plausible method to explain the acquisition of expertise (Ericsson, Krampe, Tesch-Romer & Heizmann, 1993).

Deliberate practice research has been most prominent in fields such as sports, chess, and music (Ericsson et al., 1993); however, in more recent years, studies have begun to explore how deliberate practice can provide an answer to the challenge of increasing new venture performance (Keith, Unger, Rauch, & Frese, 2016). In 2010, Baron and Henry provided theoretical support for a deliberate practice model in the entrepreneurship domain.

As described throughout Chapter 2, there is theoretical evidence that the antecedents of deliberate practice impact an individual's success with deliberate practice and deliberate practice improves firm performance. This chapter provides further theoretical support for the various constructs in the deliberate practice model leading to the hypotheses proposed in the current study. Figure 1 illustrates the deliberate practice and firm performance model with serial mediators.

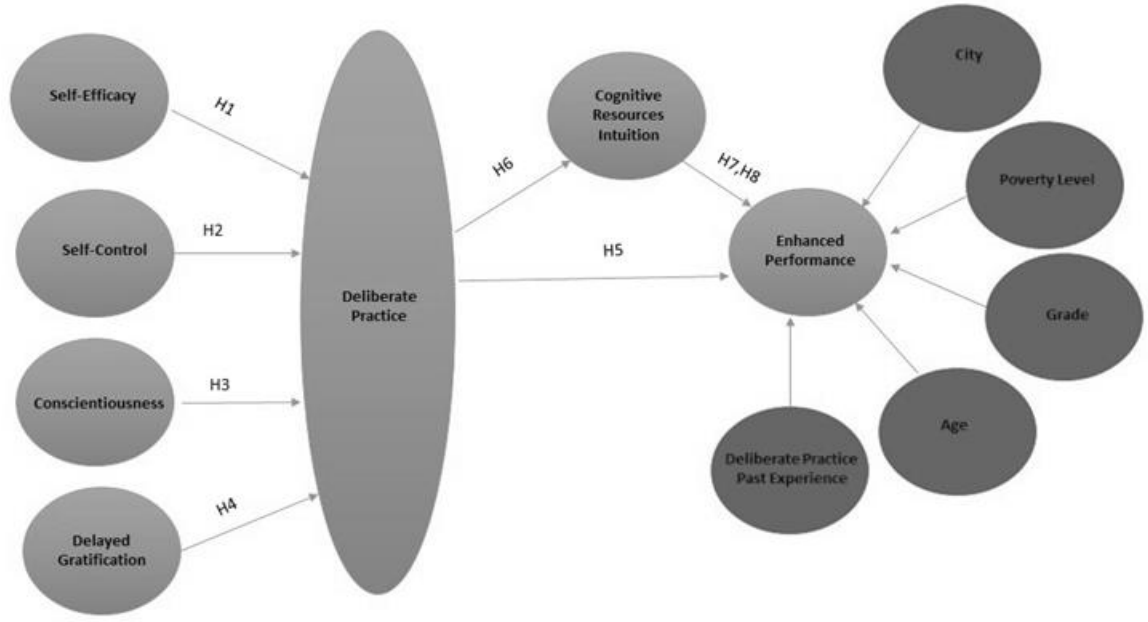

Figure 1. Super girl power deliberate practice model.

Deliberate Practice Antecedents

In their deliberate practice model, Baron and Henry (2010) identified four characteristics that drive the success of deliberate practice: self-control, self-efficacy, conscientiousness, and delay of gratification. Collectively, these are referred to as the antecedents of deliberate practice, which draw from motivation theories (Baron & Henry, 2010). Bloom's (1985) study of international performers found that at a very early age,

students were motivated to participate in deliberate practice based on the approval reaction from their parents. As an individual matures in their discipline, the motivation moves from parental approval to the notion of winning through competition. Ward, Hodges, Williams, and Starkes (2004) determined that expert performers who discontinued competing also discontinued engaging in deliberate practice. Given the nature of the repetition and focus on areas of weakness, deliberate practice is simply not designed to be fun (Dunn & Shriner, 1999). Therefore, an individual must be intrinsically motivated to endure the pain to reach the stated goals.

Self-Efficacy

Based on Bandura's (1995) social cognitive theory, self-efficacy is defined as "the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations" (p. 2). An individual's belief that they can manage and succeed as an entrepreneur influences their decision-making process as it impacts how they think, behave, and feel. Research suggests that individuals with strong self-efficacy view challenges as opportunities and develop a stronger sense of commitment. Additionally, and perhaps most importantly in the context of entrepreneurship, individuals with strong self-efficacy recover quickly from failure (Bandura, 1977).

Bandura (2012) argues that the development of self-efficacy begins in childhood, but is a lifelong process based on daily experiences that include: 1) experiencing small successes along the path of mastering a skill contributes to increased self-efficacy, 2) observing others work through similar challenges and successes creates a belief that it is

possible to conquer the challenge, and 3) receiving encouragement by coaches and mentors fosters an environment that increases self-efficacy.

As an individual considers becoming an entrepreneur, their belief system must be examined. Krueger (2007) defines beliefs as "deeply held strong assumptions that underpin our sense making and our decision making" (p. 123). To that point, in a 2014 study by Murnieks, Mosakowski, and Cardon, data collected from 221 active entrepreneurs of new ventures demonstrated a correlation between self-efficacy and entrepreneur behavior. This study suggests that entrepreneurs who are more confident about their ability to be an entrepreneur are more passionate about entrepreneurship and that passion will motivate them to commit to exerting the level of effort required when participating in deliberate practice. Therefore, I propose the first hypothesis:

H1: Higher levels of self-efficacy results in a higher level of deliberate practice.

Self-Control

According to Bandura's (1991) social cognitive theory of self-regulation, the behavior is based on an individual's cognitive ability to self-regulate based on three cognitive sub-processes: self-monitoring, self-evaluation, and self-reaction (or emotional reaction). These processes directly influence how individuals think, feel, and act. Baumeister, Bratslavsky, Muraven, and Tice's (1998) research indicates that individuals who are unable to self-regulate or demonstrate self-control most often do not follow through with challenging tasks. As a result, individuals with weak self-control are typically not good candidates to participate in deliberate practice.

A fundamental component of deliberate practice is the ability to self-identify goals and provide self-evaluation. These are not only important characteristics necessary as antecedents for deliberate practice, but also for success as an entrepreneur. Bendassolli, Borges-Andrade, and Malvezzi's (2010) study of 596 professionals in Brazil assessed the relationship between self-control and self-management and determined that self-control, and more specifically self-evaluation factors, were higher within the entrepreneur sample than the non-entrepreneur sample.

Baron and Henry's (2010) insight from research on expert performance found that "expert performers in many fields appear to be individuals who have succeeded in strengthening their self-control so that they are able to exert the extremely high levels of effort and concentration required by deliberate practice over long periods of time" (p. 54). Therefore, I propose that strong self-control has an impact on an individual's ability to perform the deliberate practice. Thus, hypothesis two is posited as:

H2: Higher levels of self-control results in a higher level of deliberate practice.

Conscientiousness

McCrae and Costa's (1987) study on the "Validation of the five-factor model of personality across instruments and observers" identified five personality dimensions: extraversion, agreeableness, conscientiousness, neuroticism, and openness; however, Baron and Henry (2010) identified only one of the five as an antecedent to deliberate practice—conscientiousness. McCrae and Costa (1987) defines conscientiousness as a high-level of thoughtfulness directed toward accomplishing a goal, which leads to the ability to be organized and focused on details. According to Baron and Henry (2010),

"Individuals high in conscientiousness are better able to invest the long, tedious hours required by such practice—and, hence, more likely to reap the benefits of such experience" (p. 54).

In a study performed by Zhao, Seibert, and Hills (2005), five main meta-analyses were conducted to determine the differences between entrepreneurs and managers. Their results indicated that entrepreneurs scored significantly higher than managers on conscientiousness. In fact, of all the five personality dimensions, conscientiousness has the strongest relationship to entrepreneur success. Therefore, I propose the following hypothesis:

H3: Higher levels of conscientiousness results in a higher level of deliberate practice.

Delayed Gratification

Delay of gratification was initially studied by Mischel (1974) as he instructed children to forego eating a single cookie until he returned to the room to receive two cookies upon his return. The majority of the children ate the cookie and therefore did not receive the second cookie. These children would later become adults and this study showed that the more impulsive adults are the less likely they are to reach goals, including graduating from high school.

In the context of entrepreneurship, a study conducted by Cardon, Zietsma, Saparito, Matherne, and Davis (2005) used a metaphor of parenthood to explain the relationship between a founder and the ability to delay gratification. The authors suggest that this metaphor could explain some of the more illogical emotions that entrepreneurs

experience. The ability to stay the course even when there are not immediate results is the same emotion that allows a parent to see the beauty in a child who may not have the best behavior. In this study, the authors provided theoretical support that entrepreneurs who were more connected with their ventures were able to demonstrate delayed gratification longer than those less connected.

Solomon, Frese, Friedrich, and Glaub (2013) conducted a longitudinal study on the relationship between long-term training on business success amongst small business owners in South Africa. The business owners indicated that their motivation for enduring the training was to experience long-term and lasting increase in firm performance such as increased sales performance over a two-year timeframe. These business owners demonstrated the willpower to forego immediate gratification that may have come by participating in less strenuous tasks because they valued the long-term rewards. This supports the notion that an entrepreneur's ability to value delayed gratification will allow them to participate in deliberate practice. As a result, I submit the following hypothesis:

H4: Higher levels of delayed gratification results in higher levels of deliberate practice.

Deliberate Practice—Experiential, Vicarious, and Past Experience

Experiential

Starting a business may be one of the most powerful methods of learning for entrepreneurs. The adage of experience being the greatest teacher has been supported in the literature (Kolb, 1984; Kolb, A.Y., & Kolb, D.A., 2005). Entrepreneurs can gain a greater understanding of various aspects of business through experiential learning,

described as "the process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p. 41). Table 4 identifies the six components that comprise experiential learning.

Table 4

Experiential Learning Components

1. Learning is ongoing, and concepts are reconstructed with more experience;
2. Relearning occurs as new beliefs are formed;
3. There is constant balancing and shifting based on the effect of reflection, action, feeling, and thinking;
4. Learning encompasses the total person which includes thinking and feeling;
5. Experiential learning includes the synergy of the person and the environment;
6. Learning is the process of creating knowledge (Kolb, A.Y., & Kolb, D.A., 2005).

Hickcox (1991) performed a meta-analysis of 81 studies and found that 62% of the studies supported the notion that experiential learning was an effective method for business education (Kolb, Boyatzis, & Mainemelis, 2001), which suggests that one method to increase one's effectiveness as an entrepreneur is by simply starting a business. This finding indicates that entrepreneurs can learn and refine the critical skills (e.g., opportunity identification, obtain financing, communicate business concepts) for new venture startups. Entrepreneurs can learn from experience and can learn by modifying behavior through the evaluation of what did not work. Research further indicates that

entrepreneurs are more successful in their second and third ventures (Lamont, 1972; Vesper, 1980; Wright, Westhead, & Sohl, 1998).

Lamont's (1972) study on "What entrepreneurs learn from experience" examined the average sales and profitability of technology firms. Nearly all of the firms (91%) owned by first-time entrepreneurs reported sales under $100,000 and only 25% reported a profit. In the same study, the majority of second-time entrepreneurs (75%) reported sales over $100,000 and 60% reported a profit. Lamont argued that the differences in results could be explained by a better understanding of the product or service, more access to capital, and better management of operations based on experience gained in their first entrepreneurial endeavor.

Another benefit gained through experience is greater confidence during times of uncertainty, specifically the start-up phase (Johannisson, Landström, & Rosenberg, 1998). In a study comparing novice entrepreneurs to habitual entrepreneurs, there were significant differences reported in the comfort with start-ups between the novice and habitual entrepreneurs (Politis, 2008). Additionally, an entrepreneur's attitude toward risk acceptance is positively impacted as they gain experience with start-ups and closures (Cardon & McGrath, 1999). Through data collected from interviews with entrepreneurs who have failed ventures, Coughlan et al.'s (2014) study identified four potential learning outcomes from a failed venture: self-learning, reasons for failure, impact on relationships, and venture management. Their research indicated that establishing learning outcomes is a crucial component of the overall process of deliberate practice.

Based on these results, entrepreneurs should be concerned with the following: (a) how self-learning influences their behaviors and business decision-making, (b) ensuring previous mistakes are not repeated, (c) monitoring relationships involved in business, and (d) the study of previous management failures to better mitigate against failures in the future and to better inform current decision-making (Cope, 2011). When applied, the experiential learning concept provides insight into how an entrepreneur's belief system could change as they are exposed to successes and failures in business. The process of experiential learning provides the necessary insight that leads to making decisions that provide the greatest payoff, based on past experience and discarding the decisions that led to negative results (Bygrave & Minniti, 2000).

Vicarious Learning

There are circumstances where entrepreneurs may not have an opportunity to learn through experience. In addition to learning by doing, social learning theory explains that new thinking and behavior can be acquired by observing others (Bandura, 1991). Individuals assimilate concepts acquired by watching others, and it could be argued that entrepreneurs assimilate concepts by gaining observations through a wider variety of experiences. Observations of a wide variety of behavioral transactions in business could form one's perspective of proper negotiations, presentations, and management (Boyd & Vozikis, 1994).

Research supports the idea that entrepreneurs may learn vicariously through three methods: (a) frequency-based (prevalence of behavior among peer groups), (b) trait-based (identifying behaviors by similar business owners based on size and business type),

and (c) outcome-based learning (identifying behaviors that lead to successes or failures) (Haunschild & Miner, 1997).

Researchers have tested each of these methods individually (Baum, Li, & Usher, 2000; Haunschild & Miner, 1997). However, Srinivasan, Haunschild, and Grewal (2007) examined a combination of these measures for the first time. The researchers explored vicarious learning through new product introductions in converging markets by combining frequency and trait-based measures. The researchers used panel data from 67 firms in the U.S. digital camera market, collected in the 1990's. The results of the study indicated that firms learn by mimicking the actions of other firms competing in the same markets and these observations can influence decision-making by entrepreneurs. This research suggested that vicarious learning is critical to entrepreneurial success in emerging markets and a driving force in opportunity identification. Furthermore, creating opportunities for entrepreneurs to learn by observing other entrepreneurs (vicarious learning) could strengthen entrepreneurial skills (e.g., opportunity identification, diversification, marketing, and operations (Srinivasan et al., 2007).

Further research demonstrated that the value of vicarious learning extends across industries (e.g., technology, clinical, and banking) and emphasized the power of outcome-based vicarious learning (Baum, Li, & Usher, 2000; Ingram & Baum, 1997a). For example, in a study that included 170 acquisitions made by 32 nursing home chains, researchers established that nursing home owners observed and closely monitored the success of other nursing homes when determining acquisition strategies (Baum, Li, & Usher, 2000). These results demonstrated the use of vicarious learning in determining

the chain's next acquisition. Another study demonstrated that leadership at 174 Tokyo-based investment banks made their decision to enter new markets based on observing the experience of larger successful banks in the markets (Greve, 2000). In recent years, attention has been given to the study of the failures of others as a method of gaining knowledge and learning lessons (Ingram, 2002; Ingram & Baum, 1997a). In fact, one method of learning to survive is by watching others fail (Ingram & Baum, 1997b). A study in the banking industry examined over 2,696 banks and found that those who failed or nearly failed reported an increase in their ability to survive in the future. In other words, through what some may perceive as a negative experience, valuable learning takes place that allows for future success in new ventures. Results indicated that near-failures and failures in business resulted in creating a higher survival-enhancing learning value (Kim & Miner, 2007).

Classroom training is an important form of vicarious learning (Schunk, 1984). In a business setting, there are advantages gained by incorporating periodization and breaking up training activities into smaller more manageable chunks into deliberate practice efforts designed to increase performance (Lidor et al., 2016). Indeed, some studies have found that periodization is most effective when a specific skill is established, mastered, and then implemented into a greater skill set (Lidor et al., 2016). One of the major benefits of periodization training in the business arena is time optimization. By following a three-step process (establish a specific skill, master the skill, and then implement the skill into a great skill set), the individual is better positioned to experience greater success within each phase; therefore, seeing a return on the investment of time.

This is particularly important as entrepreneurs must balance the value of their time spent against the financial return on the investment.

In summary, learning through observing other successful entrepreneurs can build cognitive resources that frame how entrepreneurs identify opportunities. I argue that learning through case studies and other forms of vicarious learning can improve the overall performance of tasks that influence new venture performance. Additionally, people learn to perform by performing, so in the context of this current study, entrepreneurs become better entrepreneurs by performing tasks associated with new ventures. Therefore, I propose the following hypothesis:

H5: Higher levels of deliberate practice (experiential and vicarious learning) results in increased performance.

Cognitive Resources

An entrepreneur's ability to make appropriate decisions regarding opportunity identification and business management is paramount to the success of a venture. The knowledge structures and aspects of decision-making that are included in cognition creates a need to understand the cognitive styles unique to entrepreneurs and how these styles influence entrepreneurial decision-making (Mitchell et al., 2007).

Individuals involved in entrepreneurship do not differ greatly regarding their cognitive ability from people who are not entrepreneurs (Mitchell et al., 2007). However, individuals involved in entrepreneurship differ regarding the cognitive organization and structure of content compared to people who are not involved in entrepreneurship (Krueger, 2007). Entrepreneurial decision-making is driven by the cognitive structures

that are deeply influenced and even controlled by deep beliefs (Krueger, 2007). Deep beliefs could very well explain why two individuals can be presented with a problem and an entrepreneur can see the problem as an opportunity, not a threat. The more often an entrepreneur is presented with opportunities, their ability to assess the viability of an opportunity is sharpened. The ability to assess opportunities could be explained by the interplay between the cerebral cortex and the cerebellum. The interplay between these two brain structures likely influences the development of expert performance resulting from deliberate practice (Vandervert, 2007). As this process between the cerebral cortex and cerebellum is exercised, through deliberate practice, the working memory becomes faster resulting in higher arousal and attention control (Vandervert, 2007). The increased speed of the process is likely to enhance critical entrepreneurial skills including creativity and opportunity identification (Gielnik, Frese, Graf, & Kampschulte, 2012). This research (Gielnik et al., 2012; Vandervert, 2007) provides theoretical support for the exploration of deliberate practice and increased cognitive skills.

The implementation of deliberate practice within the medical field provided evidence of the effectiveness of training of medical students to reach a level of expert performance (Kulasegaram, Grierson, & Norman, 2013). Kulasegaram et al. (2013) explored the relationship between deliberate practice, innate individual ability, and cognitive factors such as working memory. Their study concluded that deliberate practice supports and precedes the development of expert performance. However, the authors found that individual cognitive factors and abilities predict expert performance if one controls for deliberate practice. While deliberate practice is effective, there are individual cognitive factors that influence expert performance. Additionally, the

assessment of cognitive ability, experience, and working memory are critical in the process of implementing deliberate practice to cultivate expert performance. Deliberate practice is specifically needed in areas of weaknesses to increase overall effectiveness (Baron & Henry, 2010). Therefore, I submit the following hypothesis.

H6: Higher levels of deliberate practice results in higher level of cognitive resources (intuition).

A study performed with eighth-grade students in geometry revealed that there was a difference observed between learners who are more knowledgeable about geometry and those learners who are less knowledgeable (Pachman, Sweller, & Kalyuga, 2013). Compared to less knowledgeable learners, the more knowledgeable learners had better improvement rates because of the deliberate practice intervention. For less knowledgeable learners, deliberately practicing in all the areas identified as weak did not result in drastic improvements after the intervention. This study's results implied that those who have some skill and capability reap more benefits and display better results with deliberate practice. These findings suggest that entrepreneurs with experience could benefit by focusing on weaknesses through deliberate practice.

Furthermore, researchers have argued that to be truly meaningful, the deliberate practice should be done in "real-world" scenarios and should tap into cognitive processes (Causer, Barach, & Williams, 2014). According to Causer et al., measuring the outcomes of this practice through verbal reports allows for appropriate identification of cognitive resource expansion. Additionally, Ericsson (2004) notes that performance must be observed while performing the representative tasks to increase the accuracy of

measurement. This research further demonstrates Ericsson's argument regarding the important benefits that entrepreneurs gain from sales presentations, financial management, capital building, and the development of teams.

Overall, performance can be affected by deliberate practice through increases in cognitive resources that influence decision-making. The nature of decision-making is a mystery until the decision has been made and the results reaped (Horrocks, McKenna, Whitehead, Taylor, Morley, & Lawrence, 2016). Horrocks et al.'s research demonstrates that positive thoughts, visualization, and mental rehearsal of contingency plans for different scenarios are unique and critical tools used in deliberate practice. Furthermore, their findings reveal that the decision-making process of elite athletes involved the assessment of information, cross-referencing information against previous experience, categorizing information, and taking action. Horrocks et al.'s findings suggest that consistency influences performance and that, regardless of the level of activity, deliberate practice can greatly shape decision-making. Therefore, I submit the following hypothesis:

H7: Higher levels of cognitive resources results in increased performance.

The research on cognitive resources demonstrated how deliberate practice affects the interworking of the brain that allows for increased memory, which ultimately affects expert performance. Entrepreneurs organize their thoughts differently than non-entrepreneurs allowing business opportunities to be more effectively identified. At the heart of effective firm performance is effective decision-making processes.

Regardless of the measure being considered, there is a need for the entrepreneur to exercise cognitive resources (e.g., memory, intuition, initiative, and so forth) when making business decisions (Gielnik et al., 2012). The argument can be made that cognitive resources ultimately affect firm performance and continuing to build cognitive resources provide entrepreneurs with necessary tools to build viable ventures.

Solomon, Frese, Friedrich, and Glaub (2013) examined the relationship between the impact of the personal initiative on business success and the implications for personal initiative training amongst small business owners in South Africa. The results of their study show that training had a positive outcome for business owners. Specifically, the owners reported positive behavioral changes resulting from the training. Most importantly, the training demonstrated a positive impact on overall firm performance from a long-term perspective; sales numbers continued to increase after two years. Additionally, business owners who demonstrated personal initiative in their training were more successful.

Solomon et al.'s (2013) research provided evidence showing that deliberate practice increases cognitive resources, personal performance, and ultimately firm performance. The relationships between these variables were explored in another study where 98 business owners completed a survey regarding the relationship between divergent thinking, business idea generation, and firm growth (Gielnik et al., 2012). The results of the study demonstrated that divergent thinking had an indirect effect on firm growth through the generation of business ideas. The findings from Gielnik et al's study demonstrated that cognitive resources could mediate the impact of deliberate practice on

firm growth, providing exceptional support for the model being tested in the current endeavor. Additionally, Gielnik et al.'s study introduced divergent thinking as a skill that can influence firm growth through business idea generation and demonstrated positive results based on the practice of this skill. The introduction of this skill indirectly suggests that deliberate practice can have an impact on firm growth and the overall success of an entrepreneurial endeavor.

This research demonstrated that decision-making is firmly rooted in cognitive resources. When entrepreneurs make critical decisions—such as determining if they should pursue an opportunity, expand the reach of the organization, or seek the appropriate types of capital—they are creating a pathway to business success or failure. An entrepreneur can make better decisions through increases in cognitive resources by being exposed to opportunities to learn from experience and by observing others in action. I argue that individuals learn to "think" differently by doing, which means that deliberate practice obtained by experiential learning can increase cognitive resources. Additionally, there is a direct and an indirect relationship, through cognitive resources, between vicarious learning and enhanced performance of tasks that influence new venture performance. Therefore, I submit the final hypothesis.

H8: Higher levels of deliberate practice increases performance through increased cognitive resources (intuition).

CHAPTER IV

METHODOLOGY

This chapter describes the research methodology and analysis used in testing the present study's eight hypotheses. First is an outline of the overall method and design of the Supergirl Power Deliberate Practice model. The next section describes the sample and process for data collection as well as the measures. This is followed by a detailed explanation of the data analysis plan.

Overview

This study took place throughout the summer of 2017 in camp locations across seven cities. Participants were recruited to complete a survey as a condition to participate in a camp program. The survey was administered to each camp participant at each of the seven camp locations, and was designed to measure self-efficacy, self-control, conscientiousness, and delayed gratification. Next, a Cognitive Skills Index (CSI) Survey was completed by each camper to collect their level of intuition. Both surveys were administered within the first three hours of the first day of camp and again on the last day of camp. A third survey was completed daily by camp counselors. Camp counselors served as camp facilitators for small groups (5-15) of campers and

documented the camper's level of engagement with deliberate practice. Finally, the Performance Survey was completed based on videos that captured the camper's passion pitch on the first and final days of the camp program.

The surveys were coded to a specific camper using the following protocol. The first two characters of the code linked the survey to a specific city for analysis purposes, followed by the participant's date of birth and a unique sequential identifier.

Sample

The sample used for this study was from the Envision Lead Group Entrepreneurship Camp program for middle school-aged girls in the seven cities as outlined in Table 5.

Table 5

2017 Envision Lead Grow Locations

City	State	Date
Memphis	Tennessee	June 12 – 16
Atlanta	Georgia	June 19 – 23
Greensboro	North Carolina	June 26 – 30
Philadelphia	Pennsylvania	July 10 – 14
Baltimore	Maryland	July 17 – 21
Richmond	Virginia	July 24 – 28
Norfolk	Virginia	July 31 – August 4

These locations were selected based on the 2010 U.S. Census data that identifies as many as 20% of the adult population living below the poverty level. Additionally, four of the seven cities (Memphis, Baltimore, Philadelphia, and Atlanta) were reported by the National Center for Children in Poverty (NCCP) as the top 25 cities with the highest

child poverty rates (NCCP.org). The Envision Lead Grow program offers a free 40-hour entrepreneurship immersion program.

The total population participating in this study was 414 girls. Since there were four instruments included in the study, there were multiple response rates as shown in Table 6. The performance pitch was dependent on the production of a clear video of the pitch presentation. Due to technical challenges, there were several unusable videos; therefore, the response rate for the performance instrument was impacted.

Table 6

Study Response Rate

City	Attendance	Participant Instrument		CSI Instrument		Deliberate Practice Instrument		Performance	
	N	N	%	N	%	N	%	N	%
Memphis	40	36	0.90	36	0.9	32	0.80	35	0.87
Greensboro	53	44	0.83	44	0.83	51	0.96	39	0.73
Atlanta	37	31	0.83	31	0.83	37	100	19	0.51
Baltimore	31	30	0.96	29	0.93	31	100	27	0.87
Philadelphia	29	22	0.75	28	0.96	29	100	21	0.72
Richmond	37	34	0.91	36	0.9	37	100	32	0.86
Norfolk	187	163	0.87	163	0.87	187	100	149	0.79

Data Collection Procedure

The data collection procedure followed the established research protocols and policies of Oklahoma State University and was approved by the Institutional Review Board (Appendix 1). First, the camp participants were recruited to complete the survey as a condition to participate in the camp program. The consent and assent forms were included in the camp's confirmation package, which was signed as a condition to participate in the camp (Appendix 2 and 3). Each camp location had between 10-20 camp counselors allowing for a counselor-to-camper ratio to not exceed 1:10. The Participant Instrument (Appendix 4) was administered to all girls in each city as a large group. To assist the campers with the survey, a study administrator was selected to read the instructions and each question aloud and answer any questions. This ultimately ensured consistency of responses throughout the seven cities. The paper surveys were distributed, and counselors were stationed throughout the room to ensure that all campers were completing the surveys as instructed. If students arrived after the surveys were completed, there was a designated time to have a small group, or when necessary, individual sessions to administer the surveys. The same survey was distributed on Day 5 by the survey administrator and collected at the end of the program. The survey administrator entered the paper survey into a Qualtrics online system within 24-hours of survey completions. The Principal Investigator performed quality control after each city's surveys were completed.

The survey administrator used the process described above for the second survey (Appendix 5) to measure the camper's level of intuition on Day 1 and Day 5 immediately following the completion of the Participant Instrument.

The third survey (Appendix 6) was completed by camp counselors who received training to evaluate the level of engagement for individuals in their group. This was a major component of the job description, and the counselors received training on the survey on Sunday before the first day of camp. At the end of each day, the counselors completed an electronic survey hosted by Qualtrics. The survey administrator compiled the electronic submissions the day after submissions and performed quality control. If there were missing elements, the survey administrator contacted the counselor to ensure complete data were captured.

The fourth survey (Appendix 7) was completed by an established entrepreneur by watching a video of the camper presenting a 3-5 minute-business pitch on Day 1 and Day 5 of the program. The video included the ID assigned during the camp check-in process. The entrepreneur was not involved in any aspect of the program, thus reducing respondent bias as participants completed the Performance Survey.

In accordance with ethical research standards, no identifying information was requested, and all data are kept private and confidential inside the Qualtrics system and on the researcher's password-coded computers. A combination of three identifiers were used to match participant data. First, each survey was coded to the camp city. Next, the camper's date of birth was asked on both the pre- and post-survey, with a reminder to the survey taker that this would be used to link their surveys together. Third, the assigning of

group participants (1-20). Finally, the order of their check-in on Day 1 of the camp (1-125). These four items (location, date of birth, group, and registration sequence) was matched such that a participant's survey pair was one that was at the same location, same date of birth, same group and same registration sequence. In the rare, but possible case of multiple campers with all the same elements, there would be an error, and both data points would be discarded since they could not be matched. As part of the data analysis, any unmatched camper data that violated one of the constraints was discarded. The entire data collection phase was completed in eight weeks.

Measures

The measures used to represent variables in the proposed models and hypotheses are described in this section. The four complete scales of measures used for this study can be found in Appendices 4 through 7.

Antecedents of Deliberate Practice

The antecedents of deliberate practice are defined by Baron and Henry (2010) as self-control, self-efficacy, conscientiousness, and delay of gratification. Each of these was measured using Instrument One, Participant's Survey based on the Likert Scale and modified slightly for the intended audience of this study as outlined in Table 7.

Table 7

Items Measuring Antecedents of Deliberate Practice

Antecedent	Source	Example
Self-Control	*Hwang & Yun (2015)*	13 Items I am good at resisting temptation?
Self-Efficacy	*Zhao, Seibert, & Hills (2005)*	4 Items I am sure that I can own my own business, even if my friends don't believe I can?
Conscientiousness	*Shih & Chen (2011)*	3 Items I regularly arrive to class early prepared to work?
Delay of Gratification	*Karp (2015)*	3 Items I quit when people don't like the idea?

Cognitive Resources (Intuition)

Instrument Two was used to measure the primary cognitive resource within the scope of this study—intuition. Participants were asked to complete the Cognitive Style Index (CSI) (Hayes & Allinson, 1994). The CSI is a 38-item questionnaire which allows

one of three responses regarding the question relating to the individual—True, False, or Uncertain. Based on the question, the respondent receives a two, one, or zero. The final score for the individual is the average of the 38 questions; the nearer the average is to zero, the more "intuitive" the respondent. The entire instrument is included in Appendix 5.

Deliberate Practice

The deliberate practice variable was measured using two different instruments. First, the camp participant's survey described above as Instrument One included three items regarding their prior experience with deliberate practice. An example of the items included was: *Is there an activity that you participate/participated in that requires/required practice?*

Instrument Three, the second with items measuring deliberate practice, was created based on Baron and Henry's (2010) deliberate practice prior experience component. Instrument Three, which was provided to the counselors to evaluate the level of deliberate practice focused on the vicarious and experiential learning components of the deliberate practice model. The questions on the survey simply asked the counselor to rank the level of engagement based on the eight categories listed in Baron and Henry's (2010) article which describes the components that must be present to be considered deliberate practice. Chapter II provides a full description of the deliberate practice model. Using the items identified in Table 8, the counselors rated the level of the camper's engagement in deliberate practice as compared to the camper's peers based on a seven-point Likert scale.

Table 8

Deliberate Practice Measures

Item 1	Participant exhibited high levels of focus and concentration.
Item 2	Participant engaged in discussion with counselor to evaluate progress.
Item 3	Participant engaged in exercises to strengthen areas of weakness.
Item 4	Participant engaged in activity for at least three hours today.
Item 5	Participants repeated the same activity that was initiated on Day 1.
Item 6	Participant received direct feedback from the counselor today.
Item 7	Participant referred to goals today that were established during Day 1 experience.
Item 8	Participants entered self-reflection in journal today.

An exploratory factor analysis (EFA) was performed on the newly developed construct, Deliberate Practice, to determine the factor structure and examine internal

reliability (Child, 1990). During the analysis, the researcher evaluated the Eigenvalues by examining the scree plot as well as apply the Kaiser-Guttman rule (Kline, 2014).

Figure 2 shows that the plot dropped significantly after the first construct. Therefore, the researcher determined this to be a single-factor model.

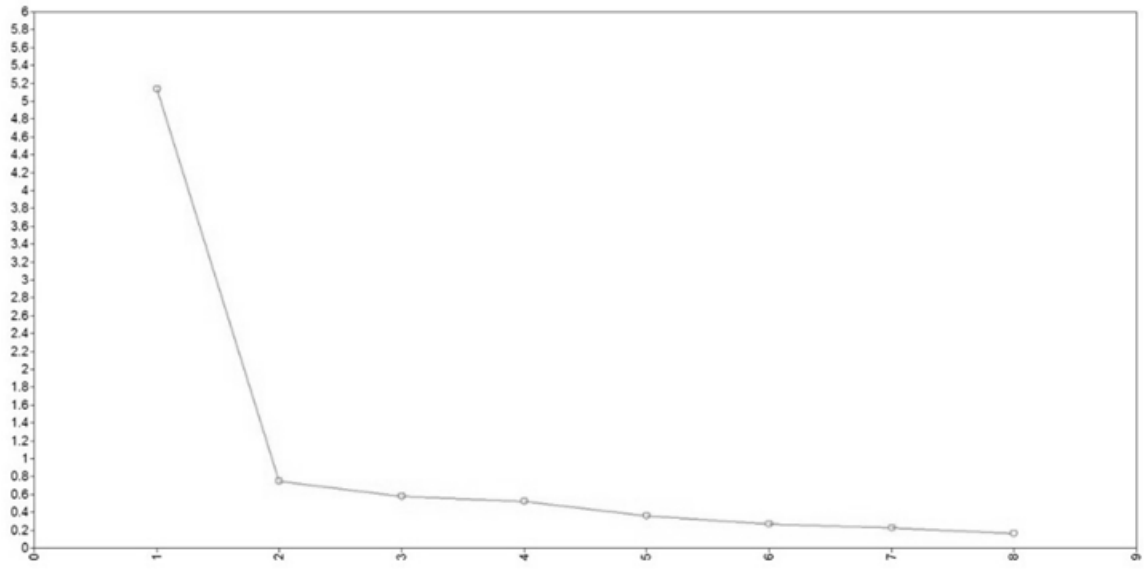

Figure 2. Scree plot.

The Eigenvalue correlations outlined in Table 9 indicate a one-factor model.

Table 9

Eigenvalues for Sample Correlation Matrix

Factor	Correlation
1	5.134
2	0.747
3	0.580
4	0.523
5	0.358
6	0.268
7	0.226
8	0.165

Overall, the model was a good fit for data as shown in Table 10. Based on the Chi-squared test, the researcher cannot reject the null hypothesis of an exact model fit to the data at alpha =0.05. Given that the SRMS value is < 0.10, the overall model fit to data is good. The Chi-square of the current model compared with the Chi-square of the

base model resulted in a CFI value> than 0.9; therefore, there is a good fit of the model to data. However, the RMSEA values indicate that the model is not a good fit. Since all other model fit indicators demonstrated a good fit, and the Eigenvalue results indicated a strong loading on one construct, the researcher did not modify the model.

Table 10

Model Fit Statistics

Parameter	Result
X2	134.823 P-Value 0.000
RMSEA	0.135 90 Percent CI 0.114 0.157 Probability RMSEA <=.05 0.000
Chi-square Test of Model Fit	1733.356
CFI/TFI	CFI 0.933 TLI 0.906
SRMR	0.043

The factor analysis was run to determine the factor loading using the maximum likelihood extraction method. The factor analysis determined the loadings for the factors using the maximum likelihood extraction method and the oblique rotation. As shown in

Table 11, the inter-item correlations were above 0.4, and all were significant; therefore, no items were eliminated (Kim & Mueller, 1978).

Table 11

Geomin Rotated Loadings

Item	Loading
D1	0.852*
D2	0.837*
D3	0.853*
D4	0.904*
D5	0.688*
D6	0.623*
D7	0.695*
D8	0.653*

Note. *significant at the 5% level.

Furthermore, the Cronbach's Alpha is .916 which means this a highly reliable instrument.

Performance

The fourth instrument evaluates the effectiveness of the pitch which was completed by the judges. The instrument was based on Clark (2008) and modified slightly to ensure relevance to the study. The full performance instrument is provided in Appendix 7 and includes items related to the structure of the presentation, the style and delivery of the presentation, company, market, and product issues.

Data Analysis Plan

This section outlines the data analysis techniques that were used in this study. The initial discussion focuses on the CFA process and then the methods used to test the hypotheses. The method chosen to test the eight hypotheses, as discussed in Chapter III, is the advanced structural equation modeling (SEM) of data collected for the Supergirl Power Deliberate Practice Model using Mplus 7.3. Four surveys were used to collect data in seven different cities.

The theoretical model attempts to provide empirical evidence of the deliberate practice model (Baron & Henry, 2010). This model explores the relationship between deliberate practice and entrepreneurial performance. While four antecedents in the model—self-efficacy, self-control, conscientiousness, and delayed gratification—have theoretically shown correlation with entrepreneurial performance, it is theorized that there is a more direct relationship between deliberate practice and entrepreneurial performance through the mediating variable cognitive resource (intuition).

The first step in the analysis process was to clean the data. This was completed by combining the data gathered from each of the cities into a master file and ensuring the

items collected were appropriate for the fields. If there were any blank fields in the file, "999" was entered to ensure that Mplus captured the data accurately. There were two conditions that would create a need to remove the record from the database: (1) an entire missing string of data missing which indicates the camper was not present, and (2) missing performance scores for T1 or T2 as there is no method to determine the outcome of the study.

The second step was to inspect responses to ensure the individual was properly engaged based on the variety of their responses. Specifically looking at the pattern of the responses to determine if, for example, all responses from a camper were "1". This would impact the normality of the data.

The researcher verified the factor structure by performing a CFA for all instruments that were either newly created (Deliberate Practice) or modified from previously validated instruments (Performance and Participants). When analyzing the CFA, several of the values were reviewed. Item reliabilities were evaluated to determine the extent of variability the item contributes to the construct, based on the .7 rule. The researcher then reviewed the model fit. The Chi-square test indicates the amount of difference between the expected and observed variances. A Chi-square value close to zero indicates little difference between expected and observed covariance matrices. Also, the probability level must be greater than 0.05 when Chi-square is close to zero. The researcher reviewed the Comparative Fit Index (CFI), which is equal to the discrepancy function adjusted for sample size with a CFI value of .90 or greater indicating acceptable model fit (Hu & Bentler, 1999). The next indicator of model fit was the Root Mean

Square Error of Approximation (RMSEA), which takes into account the residuals in the model. The acceptable model fit is indicated by an RMSEA value of 0.06 or less (Hu & Bentler, 1999). Finally, a review of the Standardized Root Mean Square Residual was conducted which indicates a value less than .10 as an overall model fit.

The researcher evaluated the discriminant validity of the factors and investigated any factors with a correlation value greater than the correlation between factors to determine if the factors were measuring the same items. Next, the composite and convergent reliability were examined. While individual factor loadings may appear lower, the composite of all items may have a loading of at least .70. If that is the case, these items would remain in the model. When the composite is lower than .70, a determination must be made to eliminate items from the model after examining the individual items and considering theoretical evidence.

After completing the CFA, the researcher tested the hypotheses using Structural Equation Modeling (SEM). This technique was selected to test the causal analysis using parameters in the analysis of latent variables (Kline, 2014). When running the SEM, the researcher validated model fit using the same methods described above. The researcher then tested the hypotheses based on the significance at a .05 and .10 level. The mediator was evaluated factors by analyzing the P-values of the total and the total indirect paths.

There are six control values in the model: race, age, grade, city, poverty level, and prior deliberate practice experience. The researcher ran the SEM a second time including these variables to analyze whether there was a difference in the p-values when these variables were included. The results are discussed in the next chapter.

CHAPTER V

RESULTS

This chapter presents a review of the statistical analyses completed to test the research question and the proposed eight hypotheses in this dissertation. This section begins by providing a summary of data collected. Next is a review of the confirmatory factor analysis and structural equation modeling results used to test and evaluate the measurement and structural models. The chapter concludes with a discussion on the hypothesized relationships that were introduced in Chapter III.

Data

The data collection process began in June and continued through August 2017. The data collection process took place during a one-week camp program hosted for local middle-school girls in seven cities throughout the Eastern region of the United States. The participants included 414 girls entering the fifth grade through ninth grade as of the 2017/2018 school year. For this research study, 393 surveys were determined to have complete and usable data for at least one of the four instruments in this study. While all instruments are valuable to the current study, the pitch score is essential; therefore, the 77 records that did not include both pre-and post-intervention pitch scores were dropped

from the database; 316 records were determined to be usable in the measurement model assessment. Figure 3 illustrates the percent of data used in the analyses collected from each city's camp site.

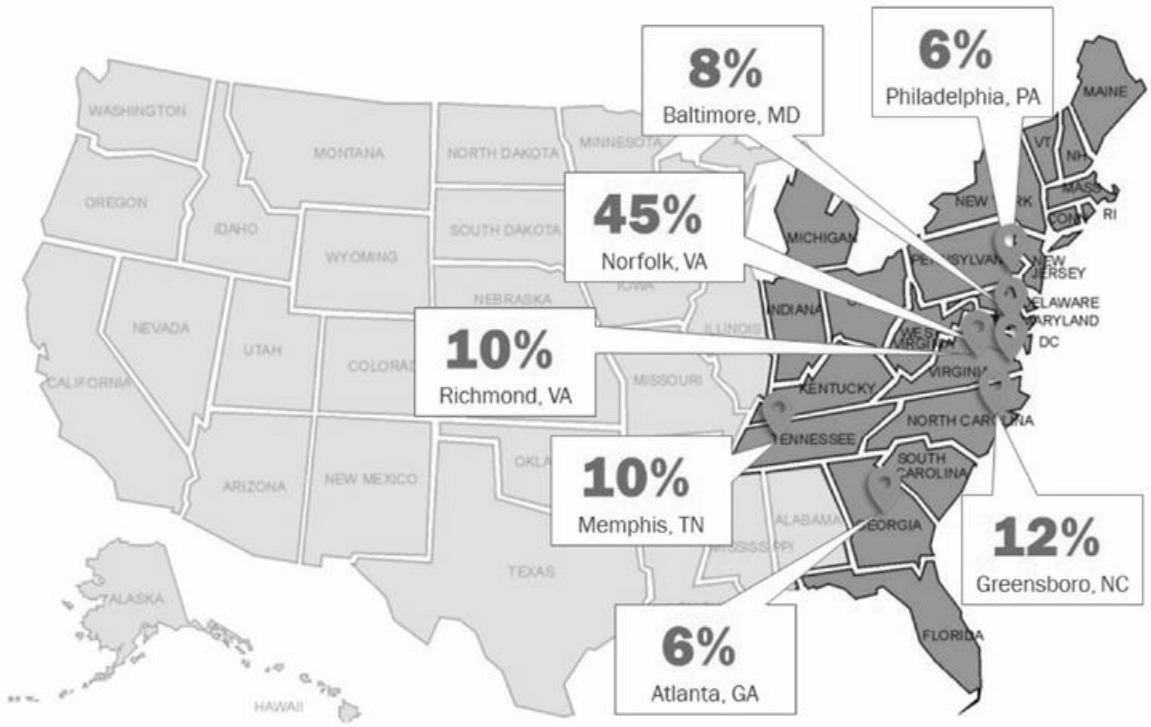

Figure 3. Geographic distribution.

Most of the locations represented 19 to 39 participants; however, the Norfolk, Virginia location represented 145 of the completed records as described in Table 12. The participants resided in seven cities throughout much of the East Coast. As indicated in Figure 4, of the 319 girls included in the analysis, 45.8% of the data were collected from the seventh city of the program, Norfolk, Virginia.

Table 12

Participant City Frequency Distribution

City	N	% of Total
Atlanta	19	0.060127
Baltimore	27	0.085443
Greensboro	39	0.123418
Memphis	33	0.10443
Norfolk	145	0.458861
Philadelphia	21	0.066456
Richmond	32	0.101266

The target participants for this study were girls entering the fifth grade through ninth grade as of the 2017/2018 school year. As indicated in Figure 4, the number of sixth graders was most represented in the data.

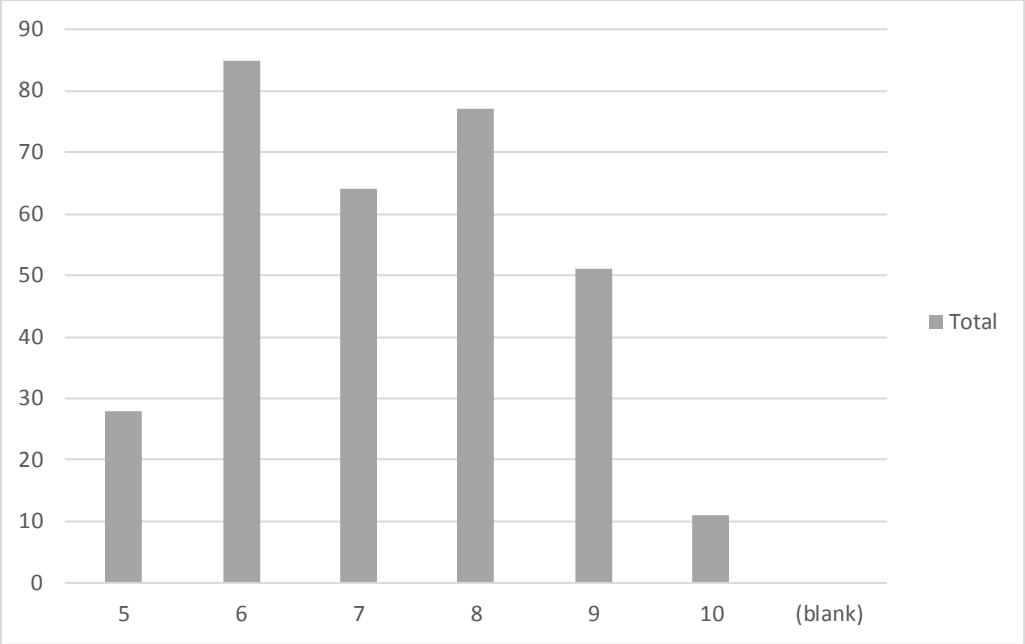

Figure 4. Participant grade frequency distribution.

The number of girls aged 11-13 years old was most represented in the data as indicated in Figure 5.

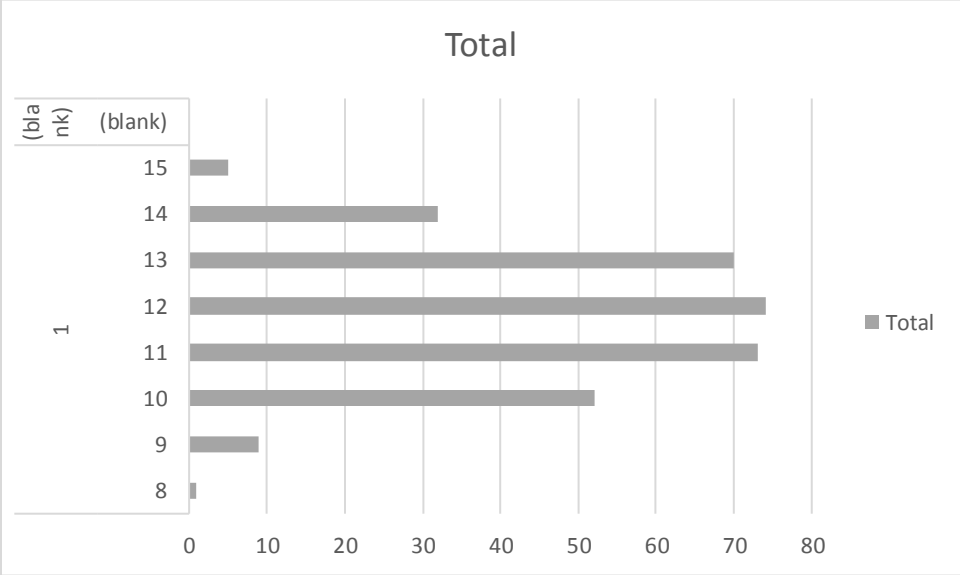

Figure 5. Age frequency distribution.

The primary race represented in the program was African American as illustrated in Figure 6.

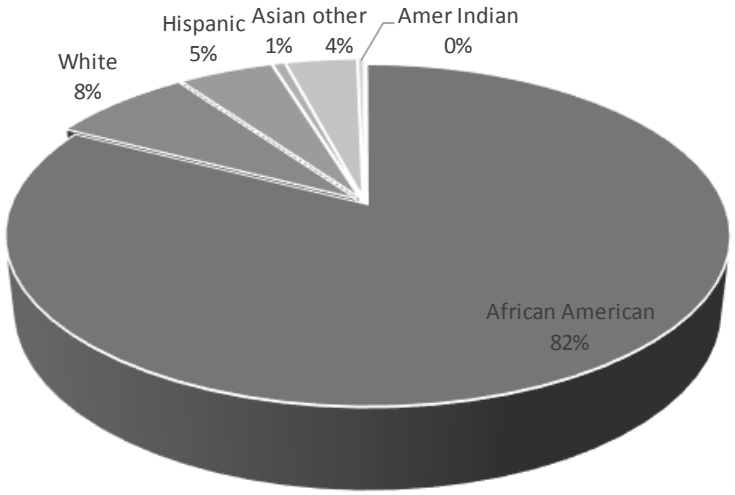

Figure 6. Age frequency distribution.

Based on data from the National Center for Children in Poverty (n.d.), four of the cities selected ranked in the top twenty for childhood poverty. However, as illustrated in Figure 7, the zip codes provided by those represented in the study indicate that more of the research participants lived above the national poverty level (15%).

Figure 7. Poverty distribution.

Variables	N	M	SD
SLF_EFF	316	4.12	0.73
CONTE	316	3.73	0.88
DEL_GRAT	316	1.03	0.17
PIT_DIFF	316	13.81	14.85
CSI_D	316	-0.73	21.66
DEL_PRAC	316	208.72	48.24
CITY	316	5.02	2.24
AGE	316	11.81	1.39
GRADE	316	7.22	1.33
RACE	316	2.23	1.03
POVERTY	316	15.73	9.78
PREV_DP	316	0.96	0.17

Variables	SLF_EFF	CONTE	DEL_GRAT	PIT_DIFF	CSI_D	DEL_PRAC	CITY	AGE	GRADE	RACE	POV	Prev_DP
SLF_EFF	1	0.19	-0.06	0.04	-0.01	0.06	-0.01	0.05	0.02	-0.14	-0.10	-0.17
CONTE	0.19	1	-0.05	0.03	-0.02	0.09	-0.00	-0.07	-0.03	0.04	-0.05	0.02
DEL_GRAT	-0.06	-0.05	1	-0.07	-0.02	-0.06	-0.17	-0.09	-0.06	-0.01	0.08	0.18
PIT_DIFF	0.04	0.03	-0.07	1	-0.03	0.13	-0.20	-0.11	-0.15	-0.03	0.06	-0.15
CSI_D	-0.01	-0.02	-0.02	-0.03	1	-0.19	0.00	0.03	0.06	-0.02	0.07	0.02
DEL_PRAC	0.06	0.09	-0.06	0.13	-0.19	1	-0.01	-0.01	-0.04	0.07	0.04	0.01
CITY	-0.01	-0.00	-0.17	-0.20	0.00	-0.01	1	-0.01	0.06	0.04	-0.19	-0.01
AGE	0.05	-0.07	-0.09	-0.11	0.03	-0.01	-0.01	1	0.91	-0.05	0.04	0.02
GRADE	0.02	-0.03	-0.06	-0.15	0.06	-0.04	0.06	0.91	1	-0.04	0.03	0.01
RACE	-0.14	-0.04	-0.01	-0.03	-0.02	0.07	0.04	-0.05	-0.04	1	0.00	0.13
POVERTY	-0.10	-0.05	0.08	0.06	0.07	0.04	-0.19	0.04	0.03	0.00	1	0.01
PREV_DP	-0.17	0.02	0.18	-0.15	0.02	0.01	-0.01	0.02	0.01	0.13	0.01	1

Figure 8. Descriptive and correlations among variables.

There were four instruments used in this study measuring a total of seven constructs. Three of the instruments (Participants, Deliberate Practice, and Performance) were either created specifically for this study, or were modifications from a previously validated study to measure six constructs (Self-Efficacy, Self-Control, Conscientiousness, Delayed Gratification, Deliberate Practice, and Entrepreneurial Performance). The fourth instrument, which was used to measure cognitive resources, was not tailored since it included proven cognition measures. Therefore, using the confirmatory factor analysis (Kline, 2016), the researcher evaluated the measurement model for the six new or modified constructs (Self-Efficacy, Self-Control, Conscientiousness, Delayed Gratification, Deliberate Practice, and Entrepreneurial Performance). Based on the outcomes of the analysis, the researcher removed several items from one of the three instruments. Table 13 provides an overview of the number of initial items per instrument and construct, and number of items retained based on CFA results. The list of items remaining from the surveys is included in Appendix 8.

Table 13

Final Items per Instrument

Instrument	Construct	Number of Items Pre-CFA	Number of Items Post-CFA
Participant	Self-Efficacy	4	3
	Self-Control	13	0
	Conscientiousness	3	2
	Delayed Gratification	3	2
	Intention	Not used in this study.	
Deliberate Practice	Deliberate Practice	8	8
Pitch	Entrepreneurial Performance	12	12
CSI	Intuition	No CFA performed.	

The Participant Survey was scored by averaging the response for the participant for each construct: Self-Efficacy (3 items), Self-Control (0), Conscientiousness (2), and Delayed Gratification (2). Entrepreneurial Intention was collected on the Participant Survey, but was not used in this study; however, this construct will be included in future studies.

The Deliberate Practice evaluation provided by the camp counselors was scored by summing the eight items collected daily and then multiplying that score by five to

derive the total Deliberate Practice score. The Performance Instrument captured the score provided by the judge for each of the 12 elements with a maximum score of 84 points per girl. The Cognitive Resource was computed by summing of the numerical values for each of the 51 items to create the CSI score.

Three of the instruments (Participant, CSI, and Performance) were administered twice during the study (T1 and T2). When running the CFA for the Participant and Performance data, T1 data was used; however, when running the Structural Equation Model, the change between T1 and T2 was used for both the CSI and Performance as there was a statistically significant difference between T1 and T2 as illustrated in Tables 14 and 15.

Table 14

t-Test: Paired Two Sample for Means Pitch

	PT2	*PT1*
Mean	55.24367089	41.4335443
Variance	191.6261503	69.6050934
Observations	316	316
Pearson Correlation	0.175142368	
Hypothesized Mean Difference	0	
Df	315	
t Stat	16.522081	
P(T<=t) one-tail	6.6968E-45	

Table 15

t-Test: Paired Two Sample for Means CSI

	CSI2	*CSI1*
Mean	42.85070423	43.5662
Variance	101.873128	77.24631
Observations	355	355
Pearson Correlation	0.724069851	
Hypothesized Mean Difference	0	
df	354	
t Stat	-1.894103033	
P(T<=t) one-tail	0.029513139	

The following sections describe the CFA analysis organized by instrument and then constructs.

Participants Instrument

By testing the CFA, I was able to assess if there is a proper relationship between the observed variables and the latent constructs. There is more than one construct in this model, and each construct has at least two indicators; therefore, the model is identified. In fact, in the original model, there are four constructs with the number of indicators ranging from three and fifteen.

As indicated in Table 16, all factor loadings are significant because the P-values are less than .05; therefore, I reject the null hypothesis that the unstandardized loading is different from 0.

Table 16

Significance Test for Factor Loadings Unstandardized

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
SLF_EFF BY				
P4T1	1	0	999	999
P5T1	1.032	0.115	8.966	0
P6T1	0.780	0.102	7.629	0
P7T1	0.616	0.087	7.098	0
SLF_CONT BY				
P8T1	1	0	999	999
P9T1	-0.847	0.173	-4.906	0.000
P10T1	-1.019	0.179	-5.685	0.000
P11T1	-0.819	0.140	-5.849	0.000
P12T1	-1.126	0.172	-6.557	0.000
P13T1	0.804	0.171	4.706	0.000
P14T1	-1.207	0.206	-5.846	0.000
P15T1	1.429	0.206	6.942	0.000
P16T1	-1.287	0.206	-6.942	0.000
P17T1	-1.333	0.211	-6.328	0.000
P18T1	0.591	0.136	4.339	0.000
P19T1	-1.186	0.185	-6.412	0.000
P20T1	-1.119	0.184	-6.081	0.000
CONTE BY				
P21T1	1	0	999	999
P22T1	0.868	0.045	19.4	0

P23T1	0.67	0.05	13.442	0
DELGRAT BY				
P24T1	1	0	999	999
P25T1	0.68	0.115	5.297	0
P26T1	0.984	0.175	5.636	0

Item Reliabilities

As I examined the individual item reliabilities, the majority appear to have a low-reliability score as shown in Table 17, with one item, P5T1, appearing above .7. As a result, I eliminated items until the reliability score increased. Table 18 identifies the standardized scores of the final model. As I examined individual item reliabilities, there were three items (P4T1, P15T1, and P22T1) that were close to .7, so they were kept in the model. While there are five items (P6T1, P12T1, P19T1, P21T1, P23T1, P25T1) with a value <.7 but greater > .3, they remained in the model until composite reliability was determined.

Table 17

Significance Test for Factor Loadings Standardized

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
SLF_EFF BY				
P4T1	0.695	0.045	15.477	999
P5T1	0.711	0.044	16.268	0
P6T1	0.590	0.049	11.994	0
P7T1	0.520	0.052	9.912	0
SLF_CONT BY				
P8T1	0.480	0.050	9.619	999
P9T1	-0.348	0.056	-6.228	0.000
P10T1	-0.428	0.052	-6.228	0.000
P11T1	-0. 440	0.052	-8.526	0.000
P12T1	-0.544	0.047	-11.605	0.000
P13T1	0.325	0.056	5.763	0.000
P14T1	-0.452	0.051	-8.780	0.000
P15T1	0.601	0.043	13.905	0.000
P16T1	-0.514	0.048	-10.704	0.000
P17T1	-0.518	0.047	-10.914	0.000
P18T1	0.306	0.058	5.295	0.000
P19T1	-0.515	0.048	-10.639	0.000
P20T1	-0.470	0.050	-9.359	0.000
CONTE BY				0.000
P21T1	0.594	0.048	12.422	0.000
P22T1	0.642	0.046	13.831	0.000
P23T1	0.594	0.048	12.486	0.000
DELGRAT BY				0.000
P24T1	0.595	0.060	9.973	0.000
P25T1	0.434	0.063	6.939	0.000
P26T1	0.573	0.061	9.374	0.000

Table 18

Reduced Model Significance Test for Factor Loadings Standardized

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
SLF_EFF BY				
P4T1	0.667	0.052	12.799	999
P5T1	0.777	0.052	14.909	0.000
P6T1	0.560	0.051	11.016	0.000
SLF_CONT BY				
P12T1	0.491	0.058	8.473	0.000
P15T1	-0.644	0.052	-12.374	0.000
P19T1	0.501	0.059	8.513	0.000
CONTE BY				0.000
P21T1	0.583	0.049	11.878	0.000
P22T1	0.655	0.047	13.952	0.000
P23T1	0.591	0.049	12.072	0.000
DELGRAT BY				0.000
P25T1	0.370	0.080	4.622	0.000
P26T1	0.752	0.132	5.705	0.000

Model Fit

The model fit was examined based on data in Table 19 below. It was concluded that the overall model was a reasonable fit to the data.

Table 19

Model Fit Information

Chi-square	
Value	113.032
Degrees of Freedom	38
P-Value	0.000
RMSEA (Root Mean Square Error of Approximation)	
Estimate	0.079
90 Percent C.I.	0.062-0.096
Probability RMSEA <= .05	0.003
CFI/TLI	
CFI	0.880
TLI	0.827
SRMR (Standardized Root Mean Square Residual)	
Value	0.055

Chi-squared = 113.032 with p-value 0.00; therefore, I reject the null hypothesis of exact model fit to the data. The SRMR =0.055 < .10; therefore, I cannot reject the null hypothesis that the overall model fit to the data is good. The CFI = .880 < .9; therefore, I reject the null hypothesis of a good fit of the model to the data. The RMSEA = .079; this value suggests a reasonable approximate model fit to the data. With a Lower CI

=.062 > .050; therefore, I reject the null hypothesis of close fit of the model to the data. The Upper CI = .096 < .1; therefore, I cannot reject the null hypothesis model because it is not a poor fit to the data. Overall, the model fits the data reasonably well.

Correlation between Factors (Constructs)

After evaluating the correlation between the factors (constructs), there was one construct that was of concern based on data included in Table 20. That construct is CONTE WITH SLF_CONT which has a value of .899. This means I may consider eliminating SLF_CONT because it may not be distinct from CONTE.

Table 20

Correlation between Constructs

	Estimate	S.E.	Est./S.E.	P-Value
SLF_CONT WITH				
SLF_EFF	-0.245	0.089	-2.743	0
CONTE WITH				
SLF_EFF	0.302	0.077	3.905	0
SLF_CONT	-0.899	0.063	-14.174	0
DELGRAT WITH				
SLF_EFF	0.257	0.111	-2.307	0
SLF_CONT	-0.433	0.106	4.093	0
CONTE	-0.570	0.101	-5.637	0

Composite and Convergent Reliability

When assessing the individual indicators, there are several that have a lower than 0.7 reliability; and when examining the entire group, only SLF_EFF has a composite score greater than 0.7 as indicated in Table 21. CONTE is slightly < 0.7; however, SLF_CONT and DELGRAT both have a composite score significantly < 0.7. I also determined that the factors were not measuring the same construct as there was sufficient

convergent validity. Table 22 illustrates that the majority of the factors were less than .5, which was a great concern.

Table 21

Composite Reliability of the Indicators

Factor	COMPOSITE for factor
SLF_EFF	0.710
SLF_CONT	0.561
CONTE	0.639
DELGRAT	0.492

Table 22

Convergent Validity

Factor	AVE for factor
SLF_EFF	0.454
SLF_CONT	0.682
CONTE	0.372
DELGRAT	0.351

Discriminant Validity

Using Fornell and Larcker's (1981) requirements, I determined discriminant validity based on the average variance extracted (AVE) being greater than the square of

the construct's correlations with the other factors. Based on Table 23, there appears to be discriminate validity among all constructs. Table 24 illustrates notes from the tests.

Table 23

Discriminant Validity

	SLF_EFF	SLF_CONT	CONTE	DELGRAT
SLF_EFF	**0.454**			
SLF_CONT	-0.245	**0.682**		
CONTE	0.302	-0.899	**0.372**	
DELGRAT	-0.257	0.433	-0.570	**0.351**

Table 24

Discriminant Validity Test Results

SLF_EFF & SLF_CONT = $(-.245)^2$ = 0.0600; .454 & .682 are greater than .245.
Discriminant Validity Satisfied
SLF_EFF & CONTE = $(.302)^2$ = 0.0912; .454 & .372 are greater than .091
Discriminant. Validity Satisfied
SLF_EFF & DELGRAT = $(-.257)^2$ = 0.066; .454 & .351 are greater than .066.
Discriminant Validity Satisfied
CONTE&SLF_CONT = $(-0.899)^2$ = 0.808; .682 & .372 are less than .047
Discriminant. Validity Not Satisfied
DELGRAT & SLF_CONT = $(.433)^2$ = 0.187; .351 and .682 are greater than .187.
Discriminant Validity Satisfied.
DELGRAT & CONTE = $(-.570)^2$ = 0.324; .351 and .372 are greater than .324.
Discriminant Validity Satisfied.

Assessing the discriminant validity of the CFA model on the basis of structure coefficients, all of the paths examined satisfy discriminant validity except CONTE & SLF_CONT.

Based on the overall analysis of the model, I determined that CONTE & SLF_CONT were fundamentally measuring the same constructs; therefore, I removed SLF_CONT from the model. Table 25 identifies the Participant Instrument Factor Loadings before and after final reduction. In almost all cases, the factor loadings

decreased slightly; however, the Self_CONT loadings were too low to include in the model.

Table 25

Final Model Significance Test for Factor Loadings Standardized Comparison

	Before Final Reduction				After Final Reduction			
	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
SLF_EFF BY								
P4T1	0.667	0.052	12.799	999	0.662	0.052	12.806	999
P5T1	0.777	0.052	14.909	0.000	0.784	0.052	15.096	0.000
P6T1	0.560	0.051	11.016	0.000	0.559	0.052	10.950	0.000
SELF_CONT BY								
P12T1	0.491	0.058	8.473	0.000				
P15T1	-0.644	0.052	-12.374	0.000				
P19T1	0.501	0.059	8.513	0.000				
CONTE BY								
P21T1	0.583	0.049	11.878	0.000	0.532	0.058	9.224	0.000
P22T1	0.655	0.047	13.952	0.000	0.759	0.056	13.443	0.000
P23T1	0.591	0.049	12.072	0.000	0.521	0.058	8.941	0.000
DELGRAT BY								
P25T1	0.370	0.080	4.622	0.000	0.359	0.077	4.634	0.000
P26T1	0.752	0.132	5.705	0.000	0.776	0.132	5.885	0.000

Model Fit

As identified in Table 26, the overall model fit improved based on the final reduction. Chi-squared = 44.471 with p-value 0.003; therefore, I reject the null hypothesis of exact model fit to the data. The SRMR =0.048 < .10; therefore, I cannot reject the null hypothesis that the overall model fit to the data is good. The CFI = .0931 > .9; therefore, I accept the null hypothesis of a good fit of the model to the data. The RMSEA = .072; this value suggests a reasonable model fit to the data. With a Lower CI =.046 < .050; therefore, I accept the null hypothesis of close fit of the model to the data. The Upper CI = .098 < .1; therefore, I cannot reject the null hypothesis that the is not a poor fit to the data. Overall, the model is a good fit for data.

Table 26

Model Fit Information

Chi-square	
Value	44.471
Degrees of Freedom	17
P-Value	0.0003
RMSEA (Root Mean Square Error of Approximation)	
Estimate	0.072
90 Percent C.I.	0.046-0.098
Probability RMSEA <= .05	0.078
CFI/TLI	
CFI	0.931
TLI	0.887
SRMR (Standardized Root Mean Square Residual)	
Value	0.048

The final model has no issues regarding construct correlations, composite reliability, convergent, or discriminant reliability as indicated in Tables 27 to 33.

Table 27

Correlation between Constructs

	Estimate	S.E.	Est./S.E.	P-Value	Estimate	S.E.	Est./S.E.	P-Value
CONTE WITH								
SLF_EFF	0.294	0.076	3.880	0.000	0.128	0.039	3.261	0.001
DELGRAT WITH								
SLF_EFF	-0.242	0.107	-2.258	0.024				
CONTE	-0.581	0.101	-5.752	0.000				

Table 28

Composite Reliability of the Indicators

Factor	COMPOSITE for factor	Factor	COMPOSITE for factor
SLF_EFF	0.710	SLF_EFF	0.710
CONTE	0.639	CONTE	0.640
DELGRAT	0.503	DELGRAT	

Table 29

Convergent Validity

Factor	AVE for factor	Factor	AVE for factor
SLF_EFF	0.455	SLF_EFF	0.456
CONTE	0.376	CONTE	0.373
DELGRAT	0.365	DELGRAT	

Table 30

Discriminant Validity

	SLF_EFF	CONTE	DELGRAT
SLF_EFF	**0.455**		
CONTE	0.294	**0.376**	
DELGRAT	-.242	-0.581	**0.365**

Table 31

Discriminant Validity Test Results

SLF_EFF & CONTE = $(.294)^2$ = 0.0864; .455& .376 are greater than .086
Discriminant. Validity Satisfied
SLF_EFF & DELGRAT = $(-.242)^2$ = 0.058; .455 & .365 are greater than .058.
Discriminant Validity Satisfied
DELGRAT & CONTE = $(-.581)^2$ = 0.337; .376 and .365 are greater than .337.
Discriminant Validity Satisfied

Table 32

Discriminant Validity

	SLF_EFF	CONTE
SLF_EFF	**0.456**	
CONTE	0.128	**0.373**

Table 33

Discriminant Validity Test Results

SLF_EFF & CONTE = $(.128)^2$ = 0.0163; .456 & .373 are greater than .128
Discriminant. Validity Satisfied

Overall, the final model appears to demonstrate validity; therefore, no test was performed to test the relationship between self-control and deliberate practice.

Deliberate Practice

This instrument was designed based on the Deliberate Practice theory (Baron & Henry, 2010). Based on the CFA results, no items were eliminated. As indicated in Table 34, all factor loadings are significant because the P-values are less than .05, therefore, I reject the null hypothesis that the unstandardized loading is different from 0.

Table 34

Significance Test for Factor Loadings Unstandardized

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
SLF_CONT BY				
D1	1	0	999	999
D2	0.923	0.049	18.769	0.000
D3	0.933	0.048	19.406	0.000
D4	0.922	0.042	22.062	0.000
D5	0.771	0.056	13.839	0.000
D6	0.624	0.051	12.130	0.000
D7	0.820	0.059	13.992	0.000
D8	0.870	0.067	13.080	0.000

Item Reliabilities

As I examined the individual item reliabilities, they appear to have a high-reliability score as shown in Table 35.

Table 35

Significance Test for Factor Loadings Standardized

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
DEL_PRAC BY				
D1	0.852	0.018	47.554	999
D2	0.837	0.019	43.591	0.000
D3	0.853	0.018	47.716	0.000
D4	0.904	0.013	67.120	0.000
D5	0.688	0.032	21.641	0.000
D6	0.623	0.036	17.120	0.000
D7	0.695	0.031	22.144	0.000
D8	0.653	0.034	19.025	0.000

Model Fit

The model fit was examined based on data in Table 36 below and it was concluded that the overall model was a reasonable fit to the data.

Table 36

Model Fit Information

Chi-square	
Value	134.823
Degrees of Freedom	20
P-Value	0.000
RMSEA (Root Mean Square Error of Approximation)	
Estimate	0.135
90 Percent C.I.	0.114-0.157
Probability RMSEA <= .05	0.000
CFI/TLI	
CFI	0.933
TLI	0.906
SRMR (Standardized Root Mean Square Residual)	
Value	0.043

Chi-squared = 134.823 with p-value 0.00; therefore, I reject the null hypothesis of exact model fit to the data. The SRMR =0.043 < .10; therefore, I cannot reject the null hypothesis that the overall model fit to the data is good. The CFI = .933 > .9; therefore, I accept the null hypothesis of a good fit of the model to the data. The RMSEA = .135; this value suggests a poor model fit to the data. With a Lower CI =.114 > .050 which suggests the model is not a close fit to the data. The Upper CI = .090 < .1; therefore, I

cannot reject the null hypothesis that the model is not a poor fit to the data. Overall, the model is an acceptable fit to the data.

The composite reliability and convergent validity of the indicators are high based on information in Tables 37 and 38.

Table 37

Composite Reliability of the Indicators

Factor	COMPOSITE for factor
Deliberate Practice	0.919

Table 38

Convergent Validity

Factor	AVE for factor
Del_Prac	0.592

Performance

The Performance Instrument measured entrepreneurial performance using a 12-item instrument. As indicated in Table 39, all factor loadings are significant because the P-values are less than .05; therefore, I reject the null hypothesis that the unstandardized loading is different from 0.

Table 39

Significance Test for Factor Loadings

Performance BY	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
P1	1	0	999	999
P2	1.197	0.062	19.410	0.000
P3	1.222	0.062	19.689	0.000
P4	0.333	0.036	9.189	0.000
P5	1.116	0.062	17.864	0.000
P6	1.160	0.061	18.961	0.000
P7	0.637	0.054	11.764	0.000
P8	1.041	0.071	14.661	0.000
P9	0.769	0.056	13.703	0.000
P10	0.086	0.026	3.261	0.001
P11	1.137	0.065	17.606	0.000
P12	1.142	0.079	14.391	0.000

Item Reliabilities

When examining the individual item reliabilities, the majority appear to have high-reliability scores as shown in Table 40. There were two of great concern (P4 and P10). P4: Rapport with judges (ability to hold judges' attention and respond to questions) and P10: Competitors (existing and potential) are both important aspects of the entrepreneur's ability to pitch a business concept (site). Therefore, those items were left

in the model as the composite reliability would be sufficient given the high scores of the other 10 items.

Table 40

Significance Test for Factor Loadings Standardized

Performance BY	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
P1	0.817	0.020	40.108	999
P2	0.879	0.015	60.224	0.000
P3	0.886	0.014	63.438	0.000
P4	0.498	0.044	11.336	0.000
P5	0.839	0.018	45.720	0.000
P6	0.871	0.015	56.608	0.000
P7	0.616	0.037	16.866	0.000
P8	0.731	0.028	26.288	0.000
P9	0.697	0.031	22.780	0.000
P10	0.187	0.056	3.350	0.001
P11	0.834	0.019	44.087	0.000
P12	0.723	0.029	25.280	0.000

Model Fit

The model fit was examined based on data in Table 41 below and it was concluded that the overall model was a reasonable fit to the data.

Table 41

Model Fit Information

Chi-square	
Value	233.251
Degrees of Freedom	54
P-Value	0.000
RMSEA (Root Mean Square Error of Approximation)	
Estimate	0.103
90 Percent C.I.	0.090-0.117
Probability RMSEA <= .05	0.000
CFI/TLI	
CFI	0.931
TLI	0.916
SRMR (Standardized Root Mean Square Residual)	
Value	0.040

Chi-squared = 233.251 with p-value 0.00; therefore, I reject the null hypothesis of exact model fit to the data. The SRMR =0.040 < .10; therefore, I cannot reject the null hypothesis that the overall model fit to the data is good. The CFI = .931 > .9; therefore, I accept the null hypothesis of a good fit of the model to the data. The RMSEA = .103; this value suggests a poor fit to the data. With a Lower CI =.090 > .050; therefore, I

reject the null hypothesis of close fit of the model to the data. The Upper CI = .117 < .1; therefore, I cannot reject the null hypothesis that the model is not a poor fit to the data. Overall, this is an acceptable model fit to data.

Composite and Convergent Reliability

There is acceptable composite reliability and convergent validity based on factors identified in Tables 42 and 43.

Table 42

Composite Reliability of the Indicators

Factor	COMPOSITE for factor
Deliberate Practice	0.914

Table 43

Convergent Validity

Factor	AVE for factor
Del_Prac	0.537

Summary of Measurement Model Assessment

Overall, the measurement models were found to be acceptable. The Participant Instrument required major item reductions and the complete elimination of one construct

(self-control). The deliberate practice and performance constructs required no modifications.

Structural Equation Model: Hypothesis Testing

Using Mplus software, I used structural equation modeling to estimate the standardized path values and their significance for the proposed model. The Supergirl Power Deliberate Practice Model is illustrated in Figure 9.

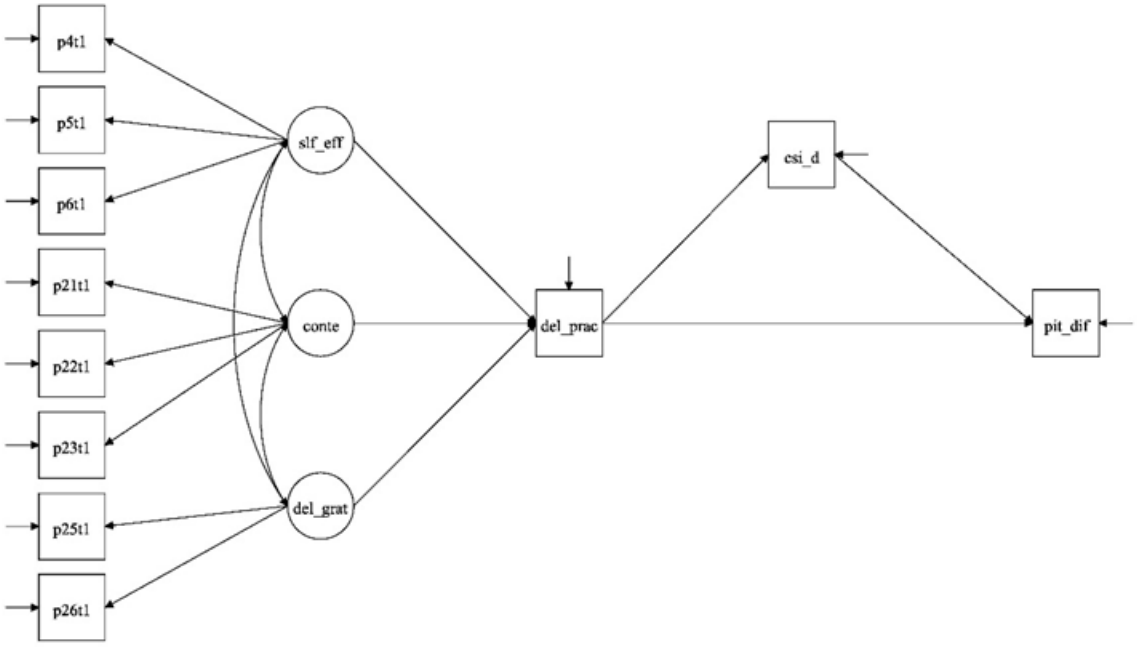

Figure 9. Supergirl Power Deliberate Practice Model structural model.

The model includes three exogenous variables: Self-Efficacy, Conscientiousness, Delayed Gratification and three endogenous variables, Deliberate Practice, Cognitive Resources, and Enhanced Performance. Based on Figures 10, 11, and 12, the SR model is recursive, as the arrows are not correlated, and all factors have units assigned; therefore, this model is identified. Given that the CFA model and the SR model are both identified, the overall model is also identified.

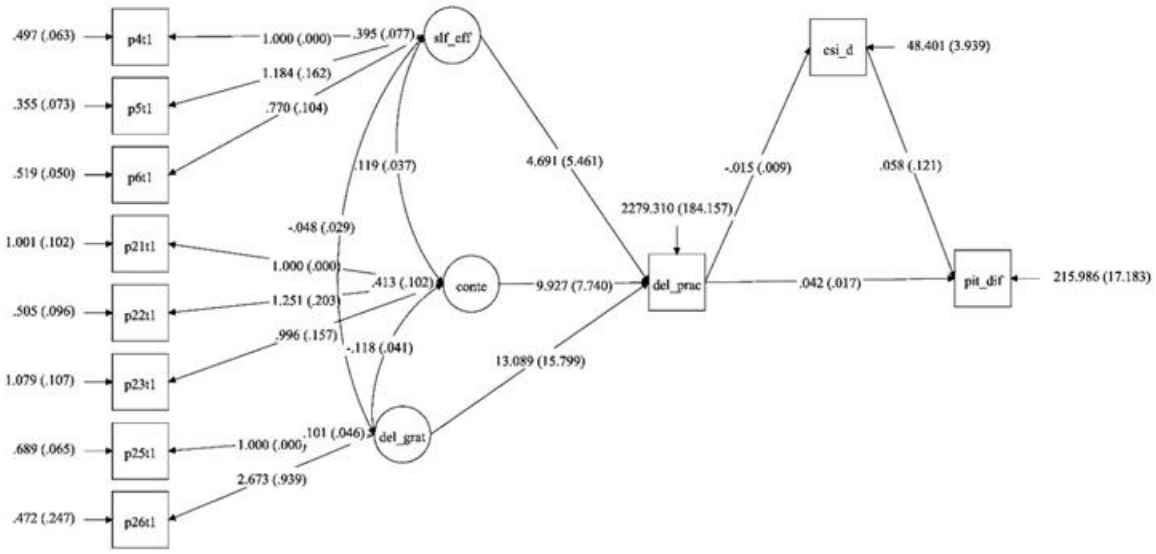

Figure 10. Unstandardized estimates.

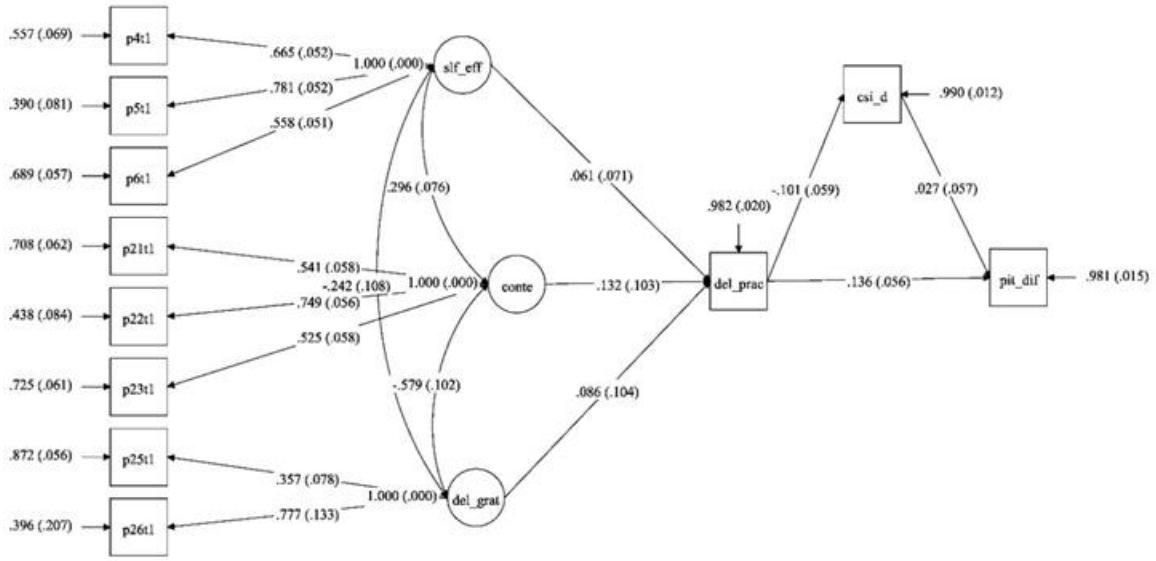

Figure 11. Structural model—standardized estimates.

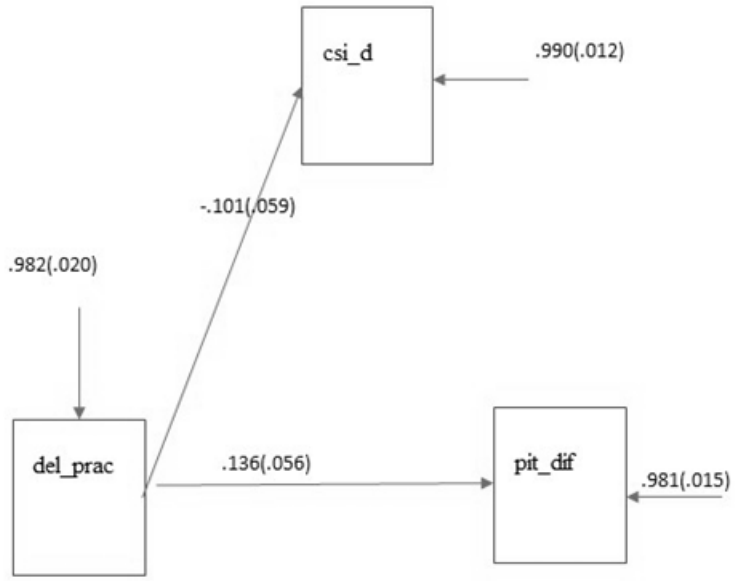

Figure 12. Structural model—standardized estimates with only significant paths.

Model Fit

Based on the fit statistics included in Table 44, the model is a good fit to the data. As indicated in Table 44, the Chi-squared = 68.493 with p-value 0.0018; therefore, I reject the null hypothesis of exact model fit to the data. The SRMR = 0.044 < .10; therefore, I cannot reject the null hypothesis that the overall model fit to the data is good. The CFI = 0.925 > .9; therefore, I cannot reject the null hypothesis of a good fit of the model to the data. RMSEA = 0.050; this value suggests a close approximate model fit to the data. Lower CI =.031 < .050; therefore, I accept the null hypothesis of close fit of the model to the data. The Upper CI = .069 < .1; therefore, I cannot reject the null hypothesis model that it is not a poor fit to the data

Table 44

Model Fit

Chi-square	
Value	68.493
Degrees of Freedom	38
P-Value	0.0018
RMSEA (Root Mean Square Error of Approximation)	
Estimate	0.050
90 Percent C.I.	0.031-0.069
Probability RMSEA <= .05	0.462
CFI/TLI	
CFI	0.925
TLI	0.892
SRMR (Standardized Root Mean Square Residual)	
Value	0.044

Statistical tests for each of the proposed relationships in the model are shown in Table 45.

Table 45

Path Coefficient (No Controls)

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
DEL_PRAC ON				
SLF_EFF	0.061	0.071	0.856	0.392
CONTE	0.132	0.103	1.286	0.198
DEL_Grat	0.086	0.104	0.828	.408
CSI_D ON				
DEL_PRAC	-0.101	0.059	-1.724	0.085
Pit_DIF ON				
DEL_PRAC	0.136	0.056	2.457	0.014
CSI_D	0.296	0.057	0.479	0.632

Hypothesis 1: Self-Efficacy is positively correlated with deliberate practice is rejected with p-value = 0.392.

Hypothesis 2: Removed from model.

Hypothesis 3: Conscientiousness is positively correlated with deliberate practice is rejected with p-value = 0.198.

Hypothesis 4: Delayed Gratification is correlated with deliberate practice is rejected with p-value = 0.408.

Hypothesis 5: Deliberate Practice is positively correlated with Performance is accepted with p-value = 0.014 at a .05 level.

Hypothesis 6: Deliberate Practice is positively correlated with Cognitive Resources cannot be accepted at the .05 level; however, with a p-value = .085, this hypothesis can be accepted at the 0.10 level.

Hypothesis 7: There is a positive relationship between Cognitive Resources and Enhanced Performance of tasks that influence new venture tasks is rejected with p-value = 0.632

Mediation

Since only the direct path is significant, the model between Deliberate Practice and Performance is not mediated through cognitive resources as indicated in Table 46.

Table 46

Total, Total Indirect, Specific Indirect, and Direct Effects

Effects from DEL_PRAC to PIT_DIFF	Estimate	S.E.	Est./S.E.	P-Value
Total	0.134	0.055	2.419	.016
Total Indirect	-0.003	0.006	-0.461	0.645

Hypothesis 8: Cognitive Resources will mediate the relationship between deliberate practice tasks that influence new venture performance is rejected with a p-value = 0.645.

Controls

There were five controls included in the model: race, age, grade, camp city, and poverty level. While these controls were not included in the hypotheses, it is important to understand their impact on the variables in the model. Figures 13 and 14 illustrate the estimates including control variables.

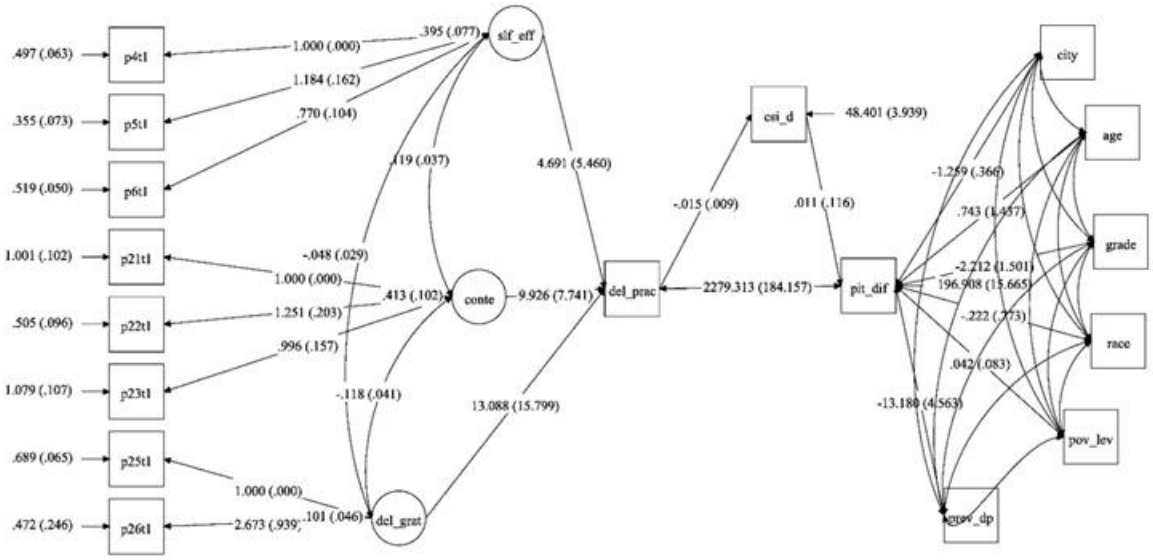

Figure 13. Unstandardized estimates including controls.

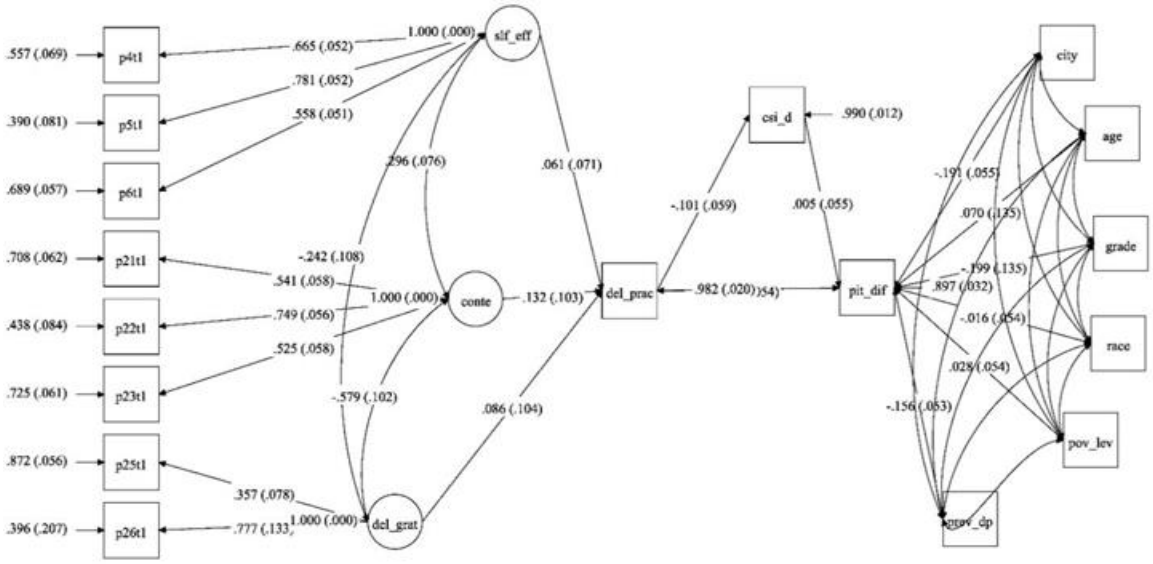

Figure 14. Structural model—standardized estimates.

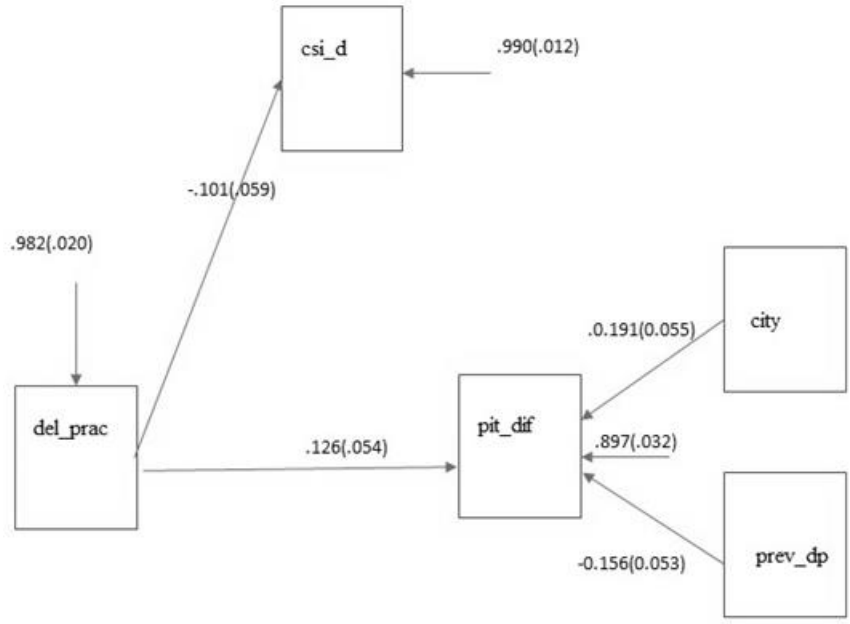

Figure 15. Structural model—standardized estimates with only significant paths.

Based on the model path coefficients outlined in Table 47, none of the controls affected any of the coefficient loadings of the variables. Those that were not significant in the base model remain non-significant when controls are added to the model.

However, two control variables (City and Previous Experience) was significantly correlated with Pitch Performance. The city control variable was significant at p=0.000, and Previous Experience with deliberate practice was also significant at p= 0.003.

Table 47

Path Coefficient

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
DEL_PRAC ON				
SLF_EFF	0.61	0.071	0.856	0.392
CONTE	0.132	0.103	1.286	0.198
DEL_GRAT	0.086	0.104	0.828	0.408
CSI_D ON				
DEL_PRAC	-0.101	0.059	-1.721	0.085
PIT_DIF ON				
DEL_PRAC	0.126	0.054	2.358	0.018
CSI_D	0.005	0.055	0.092	0.927
CITY	-0.191	0.055	-3.490	0.000
AGE	0.070	0.135	0.517	0.605
GRADE	-0.199	0.135	-1.477	0.140
RACE	-0.016	0.054	-0.288	0.774
POV_LEV	0.028	0.054	0.515	0.607
PREV_DP	-0.156	0.053	-2.921	0.003

Model Fit

Chi-squared = 167.750 with p-value 0.00; therefore, I reject the null hypothesis of exact model fit to the data. SRMR = 0.051 < .10; therefore, I cannot reject the null

hypothesis that the overall model fit to the data is good. CFI = 0.852 < .9; therefore, I reject the null hypothesis of a good fit of the model to the data. RMSEA = .047; this value suggests a close approximate model fit to the data. Lower CI =.033 < .050; therefore, I cannot reject the null hypothesis of close fit of the model to the data. Upper CI = .059 < .1; therefore, I cannot reject the null hypothesis that the model is not a poor fit to the data as described in Table 48.

Table 48

Model Fit

Chi-square	
Value	167.750
Degrees of Freedom	98
P-Value	0.0000
RMSEA (Root Mean Square Error of Approximation)	
Estimate	0.047
90 Percent C.I.	0.035-0.059
Probability RMSEA <= .05	0.620
CFI/TLI	
CFI	0.852
TLI	0.817
SRMR (Standardized Root Mean Square Residual)	
Value	0.051

Conclusion

Overall, two of the eight hypotheses could not be rejected. Deliberate practice proved to be a significant predictor of performance and cognitive resources (intuition).

CHAPTER VI

DISCUSSION

For decades, researchers have investigated the fundamental characteristic that creates a successful entrepreneur (Cooper, Woo, & Dunkelberg, 1989; Duchesneau & Gartner, 1990; Dyke, Fischer, & Reuber, 1992; Stuart & Abetti, 1990). The present study was designed to establish empirical evidence that support the deliberate practice model developed by Baron and Henry (2010). Specifically, it aimed to investigate the role of self-efficacy, self-control, conscientiousness and delayed gratification as antecedents to deliberate practice; which in turn was hypothesized to enhance entrepreneurial performance. Additionally, the cognitive resource of intuition was hypothesized to mediate the relationship between deliberate practice and performance.

Based upon the expert performance theory (Ericsson & Charness, 1994) and utilizing the deliberate practice framework (Baron & Henry, 2010), young girls can develop entrepreneurial self-efficacy and entrepreneurial intention as they are exposed to successful entrepreneurs and learn core competencies that lead to successful new ventures. This current study tested the deliberate practice framework using a population of 414 middle school girls to provide empirical evidence on Baron and Henry's (2010)

deliberate practice model to increase the number of successful new ventures. This research focused on the success of girls who completed the Envision Lead Grow Entrepreneurship (ELG) program, which aims to introduce 1,000 girls from economically under-served communities to entrepreneurship. As such, 414 middle school girls from seven cities participating in the Envision Lead Grow entrepreneurship camp completed measures of self-efficacy, self-control, conscientiousness, delayed gratification, and cognitive skills resource (intuition). In addition, camp counselors completed assessments of the campers' deliberate practice performances. Finally, an impartial judge evaluated performance by viewing a videotaped pitch presentation.

Data from the measures employed in this study were subjected to path analysis to test the hypothesized model. The final path model provided support for two of the study's hypotheses—the predicted relationship between deliberate practice and entrepreneurial performance variables as well as the relationship between deliberate practice and cognitive resource (intuition). Ultimately, the results indicated that there was no support for the remaining six hypotheses.

This chapter provides a review of the findings, theoretical and practical implications, limitations, research design and execution, and future directions for research. Overall, the current research makes at least two important contributions: 1) it is the first empirical test of a deliberate practice model in the entrepreneurial context, and 2) it provides a foundation for developing interventions that will increase entrepreneurship opportunities for young girls in urban communities.

Review of the Findings

The findings of this study were somewhat surprising, as they were not as consistent with the theoretical model regarding the relationship between the antecedents (self-efficacy, self-control, conscientiousness and delayed gratification) and deliberate practice. Moreover, the mediated relationship between entrepreneurial performance and the cognitive resource of intuition was not significant. However, the main relationship studied was the impact of deliberate practice on performance, and this relationship was supported empirically.

Antecedents

Self-Efficacy. The composite mean score (4.125) for the three items remaining in the final model measuring self-efficacy revealed that the girls were confident about their ability to perform tasks associated with entrepreneurship (identify new business opportunities, and create new products and services). These findings are not surprising given that the population for the current study consisted of young women who voluntarily signed up to participate in an entrepreneurship program, which restricted the range, as suggested by the standard deviation (0.732), which explains why there is no correlation between self-efficacy and deliberate practice. By enrolling in the program, the young ladies displayed a high level of self-confidence about their ability to be successful.

Conscientiousness. All three of the original items measuring conscientiousness remained in the final model and the participants responded with a neutral score reflecting that they neither agree nor disagree with the following statements: *"I regularly arrive to class early and prepared to do work"; "I take my homework seriously and double-check*

my work for accuracy"; and "I study on my own to get better test scores." One explanation for this is that the girls wanted to make a good impression on the first day of the program, so they may not have wanted to create a perception of being low-performers by entering a lower score for these items; however, they attempted to be as honest as possible by entering a neutral score. Another explanation is that conscientiousness and deliberate practice are simply not related.

Delay of gratification. The two remaining items in the final model measuring delay of gratification were: *"I quit when people don't like my idea"* and *"I delay tasks when I feel unmotivated."* The girls strongly disagreed with the first item and disagreed with the second item. This is an indication that the girls participating in this program saw value in focusing on long-term goals over immediate rewards; however, delayed gratification was not related to the level of deliberate practice. This could be a variable that requires more time to see the true impact.

Cognitive resource (intuition). The CSI scores indicated that the cognitive resource of intuition increased as the girls participated in deliberate practice. Each unit of deliberate practice increase resulted in a negative movement in CSI by .10 units holding all other variables constant. This means that as the girls participated in deliberate practice, they became less analytical and more intuitive. This was significant at the $p<.10$ level ($p=.085$). This could be explained by previous research on the way the brain (cerebral cortex and cerebellum) is exercised through deliberate practice, which increases the working memory (Vandervert, 2007). In this short period, the girls experienced an increased speed of processing information, which likely enhanced their ability to perform

based on intuition instead of relying on their analytical method of processing information (Gielnik et al., 2012). While this study's focus was on the increase of cognitive resource after participating in deliberate practice, it may be important to also assess the relationship between deliberate practice and the final cognitive resource level at the end of the program. This is because the overall level of intuition may have stronger relationship to performance than the differential level.

Deliberate practice. The maximum rating that a girl could receive on a pitch presentation was 84. The average ratings increased by 13.810 points after the girls participated in one week of deliberate practice. This represents a 16% increase in five days. There was strong and significant support for deliberate practice increasing the overall performance. For every unit of deliberate practice, the performance increased by 0.136, holding all other variables constant. This finding is tremendously important as it provides empirical evidence that experiential and vicarious learnings serve as suitable methods to demonstrate deliberate practice, ultimately increasing performance (Baron & Henry, 2010). The Envision Lead Grow program allowed the girls to participate in the transformation of knowledge (Kolb, 1984). The program curriculum included modules that served as building blocks to their learning and included an opportunity to apply the knowledge daily, which created an opportunity to build a stronger pitch performance by the end of the week. Throughout the five days of the program, there was a progression through the six components of experiential learning as described by Kolb and Kolb (2005). On day one, the participants delivered a business pitch, based on their initial understanding of what was required to obtain support for their business venture. Throughout the week, they learned concepts that reshaped their concept of a "winning"

business proposal. Through the scenario-based experiential learning, they began to shift their belief systems regarding incorporating their passion into a plan that they could earn a profit. By day two, they became acclimated to the environment, and true synergy was created that allowed optimal transfer of learning.

Additionally, the learning that took place vicariously proved to benefit the girl's performance. The program incorporated the concepts identified by Haunschild and Miner (1997). The girls were placed into small groups where they completed exercises in their peer groups. During this process, the girls gained insight into other approaches to solve business problems and build their business plan. During the entrepreneur-of-the-day presentations, the young ladies learned through business cases presented by local female entrepreneurs with similar areas of interest as the girls. The entrepreneurs communicated their stories and allowed the girls to ask questions. These thought-provoking sessions also offered the girls an opportunity to receive feedback on their business plans and pitches from local entrepreneurs. Finally, the girls received outcome-based learning opportunities as they were presented with daily goals to ensure they were moving toward the goal of a successful pitch presentation. Together, these experiential and vicarious learning opportunities created a strategy that led to increased performance.

While there was a direct relationship between deliberate practice and performance, there was no support that suggested CSI (intuition) mediated the relationship between deliberate practice and pitch performance.

Controls

There were six controls evaluated when analyzing the data: race, age, grade, camp city, poverty level, and previous deliberate practice experience. While the program was open to all girls in the city, the girls who registered to participate had many of the same demographic factors for a number of potential reasons, because: 1) the schools that heavily promoted the program had less diversity 2) girls interested in participating invited their friends to participate. As a result, the control variables were somewhat range restricted. However, when controlling for these six variables, the outcomes remained the same as previously reported. Of the six control variables, two demonstrated a significant relationship with pitch performance, camp city and previous experience with deliberate practice. This means that girls' performance when pitching their ideas were stronger in some cities than others. One explanation for this is the development of the camp facilitators as they honed their skills throughout the seven weeks. Each city benefited from the experience gained from the prior city's camp experience. As the facilitators gained additional experience with each city, their instruction became stronger, thus, allowing the girls the opportunity to build stronger pitch skills.

The relationship between previous experience with deliberate practice and pitch performance was significant, as theory suggested (Baron & Henry, 2010). This means that those individuals who apply focused practice in other domains exerted the effort to deliberate practice during the camp, which resulted in a higher pitch performance.

Theoretical Implications

The results of this study raise four key implications within the context of developing knowledge on key factors contributing to creating successful entrepreneurs. First, the findings confirmed the conceptual relationship between deliberate practice and entrepreneurial performance. Just as deliberate practice has been empirically proven to create expert performance in sports, chess, and classical music (Ericsson et al., 1993), there is now empirical evidence that when evaluating deliberate practice based on the eight factors embedded in Ericsson and Charness' (1994) definition of deliberate practice and Baron and Henry's (2010) model, entrepreneurial performance increases significantly. The present study adds further support that a deliberate practice regimen that includes the eight components described in Ericsson's model (Ericsson & Charness, 1994) creates an expert performance in tasks that are entrepreneurially related even when the regimen takes place over a very short time frame.

The Envision Lead Grow entrepreneurial program provides a framework to include the vicarious and experiential learning introduced in Baron and Henry's (2010) model. The program included a mix of 30% vicarious and 70% experiential learning which offered a level of challenge and required a high degree of effort as defined by Coughlan et al. (2014). The researcher would challenge the notion of deliberate practice not being "inherently enjoyable" (Coughlan et al., 2014, p. 449). The girls participating in the study enjoyed their experience; while they were taxed mentally because of the focused attention required for extended periods of time each day, the program was designed to ensure that their experience was pleasant.

The findings also raise implications to support the fact that deliberate practice increases the cognitive resource of intuition. The data suggests that as individuals apply focused and intense attention to improving in an area, the girls were less reliant on careful analysis before performing a task, but instead applied intuition. Just as theory suggests, cognition is a major factor in expert performance (Chase & Simon, 1973; Miller, 1956; Ericsson et al., 1993). Storing the experiences in short-term memory banks (Ericsson, 1985) allowed the participants to draw upon the experience when necessary and respond as appropriate. During the program, the girls received feedback daily regarding the major components of their pitch including features and benefits, target audience, and pricing strategies; therefore, they were more informed and comfortable when presenting their final pitch and responding to questions. Ericsson (1985,1988) argued that experience and practice can balance the level of expertise on a specific task through short-term recall. The intensity of the program required complete focus during the 40-hours of entrepreneurship immersion, which increased the girls' capacity for short-term recall regarding their pitch.

The third theoretical implication suggests that the antecedents are not as related to the success of an entrepreneur as their commitment to participating in deliberate practice. The level of the girls' self-efficacy, conscientiousness, nor delayed gratification resulted in a significant causal relationship with their ability to participate in deliberate practice. Bandura (2012) suggests that development of self-efficacy is a life-long process. Given that the population in this study were girls in their early to mid-teenage years, they are still in the process of developing self-efficacy. While the study did not demonstrate a significant correlation between self-efficacy and deliberate practice, the findings

indicated that the girl's average self-efficacy score was high. Perhaps this is in alignment with Murnieks, Mosakowski, and Cardon's (2014) study of the relationship between self-efficacy and entrepreneur, since the self-efficacy score was high and the overall performance was also high. In Baron and Henry's (2010) model, the relationship between self-efficacy and pitch performance was mediated by deliberate practice. Perhaps the more appropriate relationship would be self-efficacy and pitch performance.

When considering the relationship between delayed gratification and deliberate practice, the literature points to long-term versus short-term gratification. Solomon et al.'s (2013) study amongst small business owners in South Africa highlights outcomes being long-term and lasting. Given the time constraints presented in this current study, it is difficult to measure long-term impact.

Finally, conscientiousness was presented as an antecedent to deliberate practice. When reviewing the literature, it is a reasonable assumption to make that an entrepreneur is more conscientious than other professionals (i.e., managers) as discussed in the Zhao and Seibert's (2006) study. In the present study, there was not a significant relationship between conscientiousness and deliberate practice. When examining the raw data, it appeared that the participants selected a neutral score for all items measuring conscientiousness. When considering reasons for this score, the researcher believes the girls would have potentially rated themselves lower but feared creating a negative perception on Day 1 of the camp. While the survey was anonymous, the girls had not yet established a level of trust with the camp counselors. Without further examination, this is clearly conjecture but could explain the results. There is little variability in the score with

a standard deviation score of 0.885, indicating range restriction which also explains why there is no a correlation.

When evaluating the theories supporting the relationship between the antecedents and deliberate practice, it appears that intervention used to provide deliberate practice opportunities can make a difference in enticing individuals to commit, ultimately increasing entrepreneurial performance; therefore, more emphasis should be placed on deliberate practice program design and less on antecedents.

Finally, and possibly most importantly, entrepreneurial performance was not affected by ethnicity, grade, age, or poverty level. This current study adds greater texture to the finding of Fry and Stephens' (2006) study which reported that, of all ethnic groups, Hispanics and African Americans were least likely to become entrepreneurs. However, this current study demonstrates that in a predominately African American population, with the appropriate training and support, African Americans can demonstrate success when completing entrepreneurship tasks.

According to Bloom (1985), age matters when considering expert performance. Ericsson et al.'s (1993) study found that individuals reaching the highest levels of expertise as a pianist began practicing at age five. The ages for this current study ranged from nine to 15 years old. This suggests that, in the entrepreneurship discipline, the seven-year age range did not have an impact on the outcome; this is valuable information as entrepreneurship educational strategies for primary and secondary level schools.

The final socioeconomic factor included in the model was poverty. There is literature associated with the institutional views of individuals living in poverty and the

lack of support (i.e., banking) to allow businesses in under-served communities to prosper (Khavul et al., 2013). There is also limited literature on the relationship of poverty levels and entrepreneur performance. This current study adds to the body of entrepreneurship literature as it demonstrates that poverty levels do not impact the ability of an individual to apply deliberate practice and obtain expert performance as an entrepreneur.

In summary, the social economic factors considered as controls for the current study suggest that deliberate practice can successfully provide young girls with an opportunity to create a future, regardless of their current circumstances, through entrepreneurship.

A successful economy depends on the success of small businesses and entrepreneurs (U.S. Small Business Administration, n.d.). The economic ecosystem must be fed by building a pipeline of future entrepreneurs that understand what it takes to be a successful entrepreneur. This can be gained through vicarious learning or experience. However, there is no better way to learn how to be an entrepreneur than becoming an entrepreneur. In the words of Nike, "Just Do It"! Henry and Baron's (2010) model offered an interesting and practical model that, to my knowledge, had not been tested empirically until now. Although the findings of this research study could not show support for six of the hypotheses, one of the hypotheses supported was the foundation of the entire model. There is a direct path from deliberate practice to success with entrepreneurship. The second hypotheses supported a direct path from deliberate practice to cognitive resource (intuition).

Researchers have long argued about the amount of time one must apply to deliberate practice to reach a level of expert performance (Schneider, 1993). The most noted amount has been widely published in the book, *Outliers* (Gladwel1, 2008) with 10,000 hours. Baron and Henry's (2010) model offered a more realistic concept by identifying vicarious and experiential learning, as well as prior experience with deliberate practice in other domains, as deliberate practice activities. The Supergirl Power model was developed based on eight concepts included in the deliberate practice definition (Ericsson, 2004) and the inclusion of vicarious and experiential learning. For example, the girls reflected on the goals they established on Day 1 and identified areas of improvement as a method to perform self-reflection—a component of deliberate practice. On a daily basis, the girls listened to the path of a successful entrepreneur and asked questions during the "entrepreneur-of-the-day" presentation. This allowed for the vicarious learning components. This program was only 40 hours; however, the outcomes were significant. The tremendous difference in the girls' performance, regardless of age, sex, or economic status, can be attributed to a carefully created intervention. Developing programs throughout the United States based on the Envision Lead Grow model could solve several societal concerns. Keeping these middle-school girls engaged in a program that surrounds them with images of success fueled by their passions builds a pipeline of future entrepreneurs and keeps them focused on their future; thus, decreasing teenage pregnancy and increasing high school graduation rates.

Limitations

While this research intended to challenge somewhat the notion of time, it must also be recognized as a major limitation of this study impacting two areas. The first was the amount of time designated for execution of the study's design. Although this was a single-group experimental design study with multiple measurement phases, additional time would have allowed the formation of a control group for comparative analyses. Comparative experiments play a role in educational research programs, from studies of efficacy to those that confirm the effects of interventions. Additionally, while the most basic treatment in a comparative study has two levels and is investigated with a two-group design, more complex designs might be considered to explore several treatment variables (Howe, 2004) at two or more levels each.

The second concern with time was the amount of time allocated to deliberate practice. While the amount of time of focused attention on practicing entrepreneurship was double the amount of time in a week in Ericsson et al.'s (1993) study of violinists, that study collected data over a 10-year span, compared to the one week of the present study. However, when considering the concept of swift trust, Meyerson et al.'s (1996) study suggests that when there are time constraints, individuals may focus on the action required to accomplish a goal and that could accelerate the movement to expert performance. In this current study, the participants were focused on a goal to win the $500.00 pitch contest award. This financial gain represented a motivator to exert increased efforts during the 40-hours and continue practicing at home in the evenings. Parents commented that the girls were practicing during the commute to and from the

camp. It was clear that the motivation was there and the tools and information provided the support to participate in deliberate practice. The concern is there was perhaps not enough time to fully measure the relationship of the antecedents on deliberate practice. Antecedents such as delayed gratification would be measured more effectively if there were more time between the pre-and post-intervention data collection phase.

The final concern with time was the inability to measure true examples of entrepreneurship (i.e. establishing a Federal Tax ID and selling products or services). Instead the business pitches were used as a proxy for entrepreneurship. While obtaining seed money is a valid task performed by entrepreneurs, the number of girls who begin selling their products or services could be measured had more time been available for the study.

The findings are also limited by the validity of the antecedents measured in the model. Although there were 26 items identified to measure the four constructs, the CFA results indicated that there were low item reliabilities; thus, requiring a reduction of 14 items leaving 12 items remaining. This reduction included the complete elimination of an entire construct (self-control), as it was determined that self-control and conscientiousness were measuring the same thing. This is most likely due to the participants' misunderstanding of the items given their age and experience. In the future, there may be value in creating items that are more appropriate for this young target group by including members of the population in the survey question design and the EFA process. There would also be value in performing a pilot study before beginning the full study.

Another limitation of the study was the use of the same judge to measure the business pitch videos for T1 and T2. This may have introduced a bias as the judge may have been interested in confirming their opinion of a participant's true potential, which may have been reflected in their final score. While there were strategies in place to mitigate this risk, it is possible that the bias existed.

Finally, the sample population did not include a true representation of middle-school girls throughout the United States and internationally, which limits the generalizability to the Eastern region of the United States. There are economic and cultural differences that must be taken into consideration when considering other regions within the United States and abroad that may have an impact on the overall pitch performance.

Future Research

Building on the present study's limitations, there are rich opportunities for future research. The first opportunity for future research is to expand the study from a regional perspective to a national and then international perspective by increasing the population beyond the Eastern region of the United States. There are great opportunities to create an instrument that more reliably measures the antecedents to deliberate practice. There would be great value in including the study target group in the brainstorming sessions to develop the items to measure the constructs regarding the antecedents of deliberate practice. Once the survey instrument was completed, piloting the instrument with a small group of the target population would more than likely result in a different outcome when measuring the antecedents of deliberate practice.

During the study, the researcher collected the antecedents of deliberate practice on Day 1 and Day 5 of the program. There may be value in understanding if deliberate practice causes an increase in self-efficacy, self-control, conscientiousness, and delayed gratification. While this can be generalized across various ages, it may be particularly helpful to understand if the deliberate practice method can be used as an intervention for young girls experiencing self-esteem issues.

Finally, measuring deliberate practice for an entire summer and conducting a longitudinal study through high school graduation could provide great insight regarding a method to increase the pipeline of future entrepreneurs. A study that measures the level of deliberate practice from middle school to high school, and the relationship to entrepreneurial success—as measured by creating a business entity and sales at graduation and in five-year increments post-high school graduation—would offer great contributions to the entrepreneurship body of knowledge.

Conclusion

The findings from this current study provided support that focused and intense practice strengthens an individual's performance. Baron and Henry (2010) submitted strong theoretical evidence that suggested outstanding performance across many domains, including entrepreneurship. This increased entrepreneurial ability ultimately increases the overall firm performance (Cooper et al., 1989; Duchesneau & Gartner, 1990; Dyke et al., 1992; Stuart & Abetti, 1990). The mantra of the Envision Lead Grow program is "young girls with dreams become women with vision." The young girls participating in this study demonstrated that when they are surrounded by encouragement

and instruction, they are eager to apply dedication to their practice. These young girls demonstrated hope as they saw women who shared similar characteristics who inspired them to believe it was possible for them to paint their own future. Just as demonstrated by the Ohio State University study (Page, 1997), girls who had entrepreneurial mothers or mentors were more likely to become entrepreneurs themselves as opposed to girls who had no role models with entrepreneur experience.

A successful economy depends on the success of small businesses and entrepreneurs (U.S. Small Business Administration, n.d.). The economic ecosystem must be fed by building a pipeline of future entrepreneurs that understand what it takes to be a successful entrepreneur. This can be gained through vicarious learning or experience. However, there is no better way to learn how to be an entrepreneur than becoming an entrepreneur. In the words of Nike, "Just Do It"! Henry and Baron's (2010) model offered an interesting and practical model that, to my knowledge, had not been tested empirically until now. Although the findings of this research study could not show support for six of the hypotheses, one of the hypotheses supported was the foundation of the entire model. There is a direct path from deliberate practice to success with entrepreneurship. The second hypotheses supported a direct path from deliberate practice to cognitive resource (intuition).

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identifying vicarious and experiential learning, as well as prior experience with deliberate practice in other domains, as deliberate practice activities. The Supergirl Power model was developed based on eight concepts included in the deliberate practice definition (Ericsson, 2004) and the inclusion of vicarious and experiential learning. For example, the girls reflected on the goals they established on Day 1 and identified areas of improvement as a method to perform self-reflection—a component of deliberate practice. On a daily basis, the girls listened to the path of a successful entrepreneur and asked questions during the "entrepreneur-of-the-day" presentation. This allowed for the vicarious learning components. This program was only 40 hours; however, the outcomes were significant. The tremendous difference in the girls' performance, regardless of age, sex, or economic status, can be attributed to a carefully created intervention. Developing programs throughout the United States based on the Envision Lead Grow model could solve several societal concerns. Keeping these middle-school girls engaged in a program that surrounds them with images of success fueled by their passions builds a pipeline of future entrepreneurs and keeps them focused on their future; thus, decreasing teenage pregnancy and increasing high school graduation rates.

Yes, these young ladies are our future, and the future is bright. Regardless of their level of self-efficacy, self-control, delayed gratification, or conscientiousness level entering the program. Regardless of race, grade, age, city, or poverty level. When placed in an environment with skilled and passionate mentors, they can learn vicariously and

experientially, practice, practice and continue to practice, and they will see the reward, Supergirl Powers!

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APPENDICES

APPENDIX 1

Oklahoma State University Institutional Review Board

Date:	Tuesday, May 23, 2017
IRB Application No	BU1717
Proposal Title:	Super Girl Power: Can girls move swiftly through deliberate practice to become successful entrepreneurs?
Reviewed and Processed as:	Expedited

Status Recommended by Reviewer(s): Approved Protocol Expires: 5/22/2018

Principal Investigator(s):

Angela Reddix	Matthew Rutherford
Stillwater, OK 74078	Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☐ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Scott Hall (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,

Hugh Crethar, Chair
Institutional Review Board

APPENDIX 2

Parental Informed Consent Document

Envision Lead Grow
INTRODUCTION

Your child has been invited to join a research study to look at methods to increase female entrepreneurship success. Please take whatever time you need to discuss the study with your family and friends, or anyone else you wish to. The decision to let you child join, or not to join, is up to you.

In this research study, we are evaluating how early exposure to entrepreneurial skills will increase the girl's interest and confidence in owning a business. As an entrepreneur, I believe with information, support and the opportunity to practice those skills, women can be effective entrepreneurs and break the cycle of poverty.

WHAT IS INVOLVED IN THE STUDY?
Your child will be asked to complete two short surveys on the first day of the Envision Lead Grow Camp. We think this will take him/her no more than 10 minutes each. The participants will then participate in the camp activities in small groups and their camp counselor will evaluate their level of participation and interest at the end of each day. On Friday, the girls will present a 3-5 minute Passion Pitch, where the judges will evaluate their entrepreneurship readiness

RISKS
There are no physical or non-physical risks to participating in this study.

YOUR RIGHTS AS A RESEARCH PARTICIPANT?

Participation in the study is a requirement to participate in the Envision Lead Grow Camp. Participation in the Camp is voluntary. The students may withdraw from the study at any time.

BENEFITS TO TAKING PART IN THE STUDY?
It is reasonable to expect the following benefits from this research: girls around the Nation will have access to quality entrepreneurial training and economic development policies will be enhanced to further support female entrepreneurship initiatives. However, we can't guarantee that your child will personally experience benefits from participating in this study. Others may benefit in the future from the information we find in this study.

CONFIDENTIALITY
Your child's name will not be used when data from this study are published. Every effort will be made to keep research records and other personal information confidential. Surveys will be collected and personal identifiers will be destroyed within 5 days of the conclusion of the camp. Angela D. Reddix will have access to the information that will be stored on a password protected secured drive for up to 1 year. The research findings will be published at a group level without including any personal information.

INCENTIVES
participating in the study allows free access to the Envision Lead Grow Camp.

CONTACTS FOR QUESTIONS OR PROBLEMS?
Call Angela Reddix at 757-529-0118 or email at angela@envisionleadgrow.org. If you have questions about the study, any problems, if your child experiences any unexpected physical or psychological discomforts, any injuries, or think that something unusual or unexpected is happening. If you have questions about your rights as a research volunteer, you may contact the IRB Office at 223 Scott Hall, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu

Permission for a Child to Participate in Research
As parent or legal guardian, I authorize _____ (child's name) to become a participant in the research study described in this form.

Child's Date of Birth
Parent or Legal Guardian's Signature Date

_____

Researcher Signature Date

_____

IRB Office
Approved: 5-23-17
Expires: 5-22-18
IRB#: BU-17-17

APPENDIX 3

Minor Assent Document

Project Title: Super Girl Power: Can girls move swiftly through deliberate practice to become successful entrepreneurs?
Investigator: Angela D. Reddix

We are doing a research study about girls' ability to become successful entrepreneurs. A research study is a way to learn more about people. If you decide that you want to be part of this study, you will be asked to complete a survey at the during the first day of the camp that will take approximately 10 minutes to complete, participate in the activities daily and your counselor will provide a participation rating and finally participate in the passion pitch competition where judges will evaluate your readiness for entrepreneurship. So that you may learn from your presentation, the passion pitch will be videotaped.

There are some things about this study you should know. These are the survey you complete will be on paper and all other items will be based on observations of counselors and judges throughout your camp experience. There is no risk of discomfort or harm, they simply will watch you taking full advantage of the camp experience.

This study may allow many girls in the future to benefit from the camp experience that you will have and may also allow girls around the world to gain a better understanding of what it takes to be a successful business owner. Not everyone who takes part in this study will benefit.

When we are finished with this study we will write a report about what was learned. This report will not include your name or that you were in the study.

This study is a requirement to participate in the Envision Lead Grow Summer Camp. The camp is optional, so if you do not want to be included in the study, we encourage you to participate in another fun summer activity. Your parents know about the study too.

If you decide you want to be in this study, please sign your name.

I, _____, want to be in this research study.

_____ _____
(Sign your name here) (Date)

APPENDIX 4

Camp Participant Survey

Name City

Welcome to the Envision Lead Grow Entrepreneurship Camp! Please take 15 minutes to complete the initial survey. If you have any questions, please ask your counselor for assistance.

1. What is your date of birth? Example November 20, 1980
2. Please indicate which racial/ethnic background you most closely identify with:
   - ❑ Hispanic or Latino
   - ❑ Black or African American
   - ❑ White
   - ❑ Asian
   - ❑ American Indian or Alaska Native
   - ❑ Native Hawaiian or other Pacific Islander
   - ❑ Other
3. What grade will you enter in September 2017?
   - ❑ 5th
   - ❑ 6th
   - ❑ 7th
   - ❑ 8th
   - ❑ 9th
   - ❑ 10th

Please rank each statement based on how accurately it applies to you. Mark (1) for strongly disagree, (2) for disagree, (3) for neutral, (4) for agree, and (5) for strongly agree.

	Strongly Disagree ⟷ **Strongly Agree**				
	1	**2**	**3**	**4**	**5**
Self-efficacy					
4. I am confident in my ability to successfully perform the various roles and tasks of entrepreneurship					
5. I am confident in my ability to successfully identify new business opportunities					
6. I am confident in my ability to create new products/services					
7. I am confident in my ability to think creatively					
Self-control					
8. I am good at resisting temptation					
9. I have a hard time breaking bad habits					
10. I am lazy					
11. I say inappropriate things					

	1	2	3	4	5
12. I do certain things that are bad for me, if they are fun					
13. I refuse things that are bad for me					
14. I wish I had more self-discipline					
15. People would say that I have iron self-discipline					
16. Pleasure and fun sometimes keep me from getting work done					
17. I have trouble concentrating					
18. I am able to work effectively toward long-term goals					
19. Sometimes, I can't stop myself from doing something even if I know it is wrong					
20. I often act without thinking through the alternatives					
Contentiousness					
21. I regularly arrive to class early and prepared to do work					
22. I take my homework seriously and double-check my work for accuracy					
23. I study on my own to get better test scores					
Delay of Gratification (willpower)					
24. I give up when things are tough					
25. I quit when people don't like my idea					
26. I delay tasks when I feel unmotivated					
Intent					
27. I will probably start my own business one day					
28. I am interested in starting a business in the next 5 to 10 years					
29. The idea of owning my own business is very appealing to me					

Deliberate Practice Past Experience

30.Is there an activity that you participate/participated in that requires/required practice?

- ❑ Yes
- ❑ no

31. If yes to question 30. What was the activity? _____

32.How many hours per week do/did you practice _____

33. What is your zip code_____

APPENDIX 5

COGNITIVE STYLE INDEX

NAME..... City.....

People differ in the way they think about problems. Below are 38 statements designed to identify your own approach. If you believe that a statement is *true* about you, answer **T**. If you believe that it is *false* about you, answer **F**. If you are *uncertain* whether it is true or false, answer **?**. This is not a test of your ability, and there are no right or wrong answers. Simply choose the one response which comes closest to your own opinion. Work quickly, giving your first reaction in each case, and make sure that you respond to every statement.

Indicate your answer by completely filling in the appropriate oval opposite the statement:

T True **?** Uncertain **F** False

		T	**?**	**F**
1.	In my experience, rational thought is the only realistic basis for making decisions.	0	0	0
2.	To solve a problem, I have to study each part of it in detail.	0	0	0
3.	I am most effective when my work involves a clear sequence of tasks to be performed.	0	0	0
4.	I have difficulty working with people who 'dive in at the deep end' without considering the finer aspects of the problem.	0	0	0
5.	I am careful to follow rules and regulations at work.	0	0	0

6.	I avoid taking a course of action if the odds are against its success.	0	0	0
7.	I am inclined to scan through reports rather than read them in detail.	0	0	0
8.	My understanding of a problem tends to come more from thorough analysis than flashes of insight.	0	0	0
9.	I try to keep to a regular routine in my work.	0	0	0
10.	The kind of work I like best is that which requires a logical, step-by-step approach.	0	0	0
11.	I rarely make 'off the top of the head' decisions.	0	0	0
12.	I prefer chaotic action to orderly inaction.	0	0	0
13.	Given enough time, I would consider every situation from all angles.	0	0	0
14.	To be successful in my work, I find that it is important to avoid hurting other people's feelings.	0	0	0
15.	The best way for me to understand a problem is to break it down into its constituent parts.	0	0	0
16.	I find that to adopt a careful, analytical approach to making decisions takes too long.	0	0	0
17.	I make most progress when I take calculated risks.	0	0	0

18.	I find that it is possible to be too organised when performing certain kinds of task.	0	0	0
19.	I always pay attention to detail before I reach a conclusion.	0	0	0
20.	I make many of my decisions on the basis of intuition.	0	0	0
21.	My philosophy is that it is better to be safe than risk being sorry.	0	0	0
22.	When making a decision, I take my time and thoroughly consider all relevant factors.	0	0	0
23.	I get on best with quiet, thoughtful people.	0	0	0
24.	I would rather that my life was unpredictable than that it followed a regular pattern.	0	0	0
25.	Most people regard me as a logical thinker.	0	0	0
26.	To fully understand the facts I need a good theory.	0	0	0
27.	I work best with people who are spontaneous.	0	0	0
28.	I find detailed, methodical work satisfying.	0	0	0
29.	My approach to solving a problem is to focus on one part at a time.	0	0	0
30.	I am constantly on the lookout for new experiences.	0	0	0
31.	In meetings, I have more to say than most.	0	0	0
32.	My 'gut feeling' is just as good a basis for decision making as careful			

	analysis.	0	0	0
33.	I am the kind of person who casts caution to the wind.	0	0	0
34.	I make decisions and get on with things rather than analyse every last detail.	0	0	0
35.	I am always prepared to take a gamble.	0	0	0
36.	Formal plans are more of a hindrance than a help in my work.	0	0	0
37.	I am more at home with ideas rather than facts and figures.	0	0	0
38.	I find that 'too much analysis results in paralysis'.	0	0	0

APPENDIX 6

Envision Lead Grow
Deliberate Practice Counselor Evaluation

Date: **Counselor Name:**
Participant Name:

Please rank each statement based on how accurately it applies to this participant. Mark (1) for strongly disagree, (2) for disagree, (3) somewhat disagree, (4) neither agree or disagree, (5) for somewhat agree, (6) for agree, and (7) for strongly disagree.

Strongly Disagree ← **Strongly Agree**

	1	2	3	4	5	6	7
Compared to her peers, this participant exhibited high levels of concentration and focus today.							
Please explain:							
Participant engaged in discussion with counselor to evaluate progress							
Please explain:							
Participant engaged in exercises to strengthen areas of weakness							
Please explain:							
Participant engaged in activity for at least three hours today							
Please explain:							
Participants repeated the same activity that was initiated on Day 1							
Please explain:							
Participant received direct feedback from the counselor today							
Please explain:							
Participant referred to goals today that were established during Day 1 experience							
Please explain:							
Participants entered self-reflection in journal today							
Please explain:							

APPENDIX 7

[Date] [City]
[Participant's Name] [Judges Name]

Please rate the pitch on the following scale 1 - 7

Terrible	Very Poor	Poor	Average	Good	Very Good	Exceptional
1	2	3	4	5	6	7

	Terrible 1	2	3	4	5	6	Exceptional 7
Structure of presentation							
❑ The introduction							
❑ General structure (e.g. do the individual sections/ topics follow in a logical order?)							
❑ The conclusion/summary							
❑ Rapport with judges (ability to hold judges attention and respond to questions)							
Company issues							
❑ Company (what the company does; its background, location, etc.)							
❑ Business context (i.e. the general overview or 'big picture')							
Market issues							
❑ Market information/research (the size; quality; growth trends, etc.).							
❑ Marketing strategy (how the product(s) will be and why, etc.)							
❑ Customers (potential)							
❑ Competitors (existing and potential)							
Product issues							
❑ What the product is/ does (description; technical details. etc.)							
❑ Unique selling point (benefit(s)/ superiority of the product(s) for users)							

Please rate the final two questions 1 – 7

Strongly Disagree	Disagree	Disagree somewhat	Neither agree/nor disagree	Agree Somewhat	Agree	Strongly Agree
1	2	3	4	5	6	7

	1	2	3	4	5	6	7
Entrepreneurial Intention: The participant will probably own her own business one day.							
Self-Efficacy: How confident is the participant in her ability to successfully identify new business opportunities?							

APPENDIX 8

Self- Efficacy

P4. I am confident in my ability to successfully perform the various roles and tasks of entrepreneurship
P5. I am confident in my ability to successfully identify new business opportunities
P6. I am confident in my ability to create new products/services

Conscientiousness

P21. I regularly arrive to class early and prepared to do work
P22. I take my homework seriously and double-check my work for accuracy
P23. I study on my own to get better test scores

Delayed Gratification

P25. I quit when people don't like my idea
P26. I delay tasks when I feel unmotivated

VITA

Angela D. Reddix

Candidate for the Degree of

Doctor of Philosophy

Thesis: SUPER GIRL POWER: CAN GIRLS MOVE SWIFTLY THROUGH DELIBERATE PRACTICE TO BECOME SUCCESSFUL ENTREPRENEURS?

Major Field: Business Administration (Entrepreneurship)

Biographical:

Education:

Completed the requirements for the Doctor of Philosophy/Education in your major at Oklahoma State University, Stillwater, Oklahoma in December, 2017.

Completed the requirements for the Master of Arts in Organizational Development at Bowie State University, Bowie, Maryland in 1996.

Completed the requirements for the Bachelor of Science in Business Administration at James Madison University, Harrisonburg, Virginia in 1996.

Experience:

2016 – Present Founder, Envision Lead Grow, Norfolk, Virginia

2006 – Present CEO, A. Reddix & Associates (ARDX), Norfolk, Virginia

2000- 2006 Senior Director, Lockheed Martin, Rockville, Maryland

1997- 2000 Marketing Director, Leading Through Change, Greenbelt, Maryland

Professional Memberships:

Women's President Organization (WPO)

Project Management Institute (PMI)

Health Information Management Systems Society (HIMSS)