Giant Steps: Toward a Developmental Trajectory of Creative Talent as a Jazz Improviser

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GIANT STEPS: TOWARD A DEVELOPMENTAL TRAJECTORY OF
CREATIVE TALENT IN JAZZ IMPROVISATION

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Doctor of Philosophy

by

Anthony Michael Washington

June 2019
GIANT STEPS: TOWARD A DEVELOPMENTAL TRAJECTORY OF
CREATIVE TALENT IN JAZZ IMPROVISATION

by

Anthony Michael Washington

Approved

June 2019 by

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Rena Subotnik, Ph.D.
DEDICATION

I write your name
On my school desk
In every sound I create
On echoes of my childhood
I write your name
By the weight of the one word
I was born to know you
I write your name
How is freedom?
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Abstract

Expert jazz improvisers follow a developmental trajectory that is useful to understanding creative ability. Because this domain uses creativity as a fundamental part of its performance, its development naturally includes techniques for developing one’s creativity. This study explored the development of expert and eminent jazz improvisers’ creative abilities and delineated critical experiences, skills, dispositions, and activities associated with developing elite talent in this domain. I conducted interviews with expert jazz improvisers to gain retrospective accounts of their talent development process in addition to exploring autobiographical and biographical accounts of developmental activities of selected eminent jazz improvisers. I employed grounded theory techniques to generate and analyze these data and ultimately create a framework for identifying and developing creative talent as a jazz improviser.
GIANT STEPS: TOWARD A DEVELOPMENTAL TRAJECTORY OF
CREATIVE TALENT IN JAZZ IMPROVISATION
Chapter 1: Introduction

Expert jazz improvisers follow a developmental trajectory that is useful to understanding creative ability. Because this domain uses creativity as a fundamental part of its performance, its development naturally includes techniques for developing one’s creativity. This study explored the development of expert and eminent jazz improvisers' creative abilities and delineated critical experiences, skills, dispositions, and activities associated with developing elite talent in this domain. I conducted interviews with expert jazz improvisers to gain retrospective accounts of their talent development process in addition to exploring autobiographical and biographical accounts of developmental activities of selected eminent jazz improvisers. I employed grounded theory techniques to generate and analyze these data and ultimately create a framework for identifying and developing creative talent as a jazz improviser.

Some researchers espouse creativity to be a largely innate ability that existed in a binary fashion from birth with little ability for a person to change their creative output (Subotnik, Worrell, & Olszewski-Kubilius, 2011). By looking retrospectively at the development process of expert jazz improvisers I examined this field’s approach to developing creativity and the learning experiences that comprised the trajectory. Understanding the properties and dimensions of development in this field may allow us to better understand the extent to which we can develop creative ability and the methods jazz improvisers use to achieve this goal.
Statement of Problem

Too often, researchers posit creativity to be an innate ability that is only valued in arts related domains when, the impact of creativity is valued throughout many fields of study. Creativity also impacts the identification and selection process for gifted education programs as many high ability students may possess creative gifts that are not measure by IQ tests. Researchers have endeavored to accurately find talent using psychometric assessments throughout the history of educational measurement. From the earliest attempts at discerning intellectual ability of soldiers using Alpha and Beta tests during World War 1 to present day ability and achievement tests, psychometricians have tried to predict with certainty those with the potential for high levels of performance through predictive assessments (Bloom, 1985; Subotnik et al., 2011). Since those early days, there have been many studies of the lives of gifted children and adults in which IQ has been shown to be a strong predictor of reaching expert levels of performance. However, there is little evidence of a demonstrable increase in our ability to predict eminence using IQ (Bloom, 1985; Cross & Coleman, 2005; Subotnik et al., 2011; Terman, 1926). This is largely due to the role of creative skills in making a Big-C contribution to a field which would result in the designation of eminence (Csikszentmihalyi, 1990).

To be eminent refers to having achieved the highest level of performance within a domain which is frequently accompanied by a creative contribution to a domain that moves the field forward. Relying solely on IQ to determine which youth may reach eminent levels of performance as Terman (1926) ignores the role of creative skill development. In addition, there is an inconsistent correlation between IQ and creative domains which prevents these assessments from being useful for identification in a
domain like jazz improvisation. I hoped to glean useful information from this study of creativity that may help us understand the necessary components for reaching eminent levels of performance.

In this study, I explored the developmental trajectory of expert jazz improvisers with a focus on the properties and dimensions of their learning experiences and the extent to which musicians systematically develop creativity this field. I did this through semi-structured interviews with expert improvisers and field observations of the talent development process in several settings to include expert improvisers’ jazz improvisers interacting with students. During this investigation I implemented a Grounded Theory approach as I looked to gain a deeper understanding of each participant’s developmental activities to uncover the common properties, dimensions, and critical experiences of their talent development process. This study sought to gain a deeper understanding of creative development to potentially understand more about the extent to which jazz musicians intentionally address creative ability.

While there is evidence to support the development of speed, strength, and complex routines through deliberate practice there is a need for research regarding the growth and development of the cognitive and psychosocial skills associated with eminence (Csikszentmihalyi, 1996; Ericsson, 2008; Subotnik, Jarvin, & Rayhack, 2007). The field could receive help from further exploration of the development of skills and dispositions among improvisers to inform the teaching practice. There is ample evidence to support the role of creativity, intrinsic motivation, willingness to take risks, and persistence through failure as essential personality traits of eminent individuals (Bloom, 1985; Leslie, 2000; Marsalis & Hinds, 2003; Subotnik et al., 2007; Terman, 1926) but
there is a paucity of research that focuses on the extent to which these dispositions have been developed so that practitioners can systematically provide high quality experiences to their students.

**Misidentification.** Within the literature there is often a disconnect between the skills needed to become and expert and the assessments used to identify giftedness in youth. This has played out in a lack of ability to identify which students will reach eminent levels of achievement as adults. There are several instances where researchers overlooked children who demonstrate gifted potential and reach eminence were overlooked during various gifted screening processes throughout their development. A notable example of this misidentification was Lewis Terman’s (1926) Genetic Study of genius. Terman sought out students that met stringent intellectual criteria (IQ above 140) in the hopes of generating a sample of those students with the highest potential for reaching eminence (Terman, 1926). Relying primarily on IQ as his selection criteria resulted in two students who he screened and did not select who went on to earn Nobel Prizes, which is exactly the sort of adult giftedness Terman sought to study. In addition, among those selected, those who ultimately reached the highest levels of achievement within their fields had comparatively low IQs for this high-powered group (Terman, 1926).

There has been less effort devoted to the development of talent in those who do not demonstrate exceptional gifts early on in life. Even though we have notable examples of individuals who did not demonstrate prodigious talent in their youth who went on to eminent levels of performance as adults, there remains a focus on the talent level demonstrated rather than the skills and dispositions exhibited that are known to be
common among eminent individuals as children. This study sought to control this error in identification by focusing on experts who have reached expertise which alleviates the necessity to predict later performance. The participants in this study, some of whom did not demonstrate exceptional ability in their youth, have all achieved expertise and have the potential for eminent recognition by virtue of their current level of performance and prior accomplishments. Understanding the talent development process from their perspective was rich with useful information about talent development.

Misidentification of giftedness could also be due to a lack of understanding of specific traits that lead to eminence (Subotnik et al., 2011; Waugh & Gronlund, 2013) and over-reliance on psychometric assessments that ignore factors known to be associated with gifted children (Terman, 1926). By increasing our ability to accurately identify students with eminent potential, we reduce the impact of selection bias against students who may not demonstrate their potential through these more traditional measures. In this regard, this study sought to deepen the fields’ understanding of the innate skills and dispositions that contribute to expertise in addition to understanding the educational and environmental factors that led the participants to expertise as jazz improvisers.

Often, researchers who have sought to identify gifted youth in anticipation of eminence have chosen their samples based on only academic achievements rather than exploring the role of the psychosocial skills and dispositions that are associated with eminent individuals (Bloom, 1985; Subotnik, 1995; Terman, 1926). Our understanding of eminent individuals provides that skills and dispositions such as creativity, motivation, persistence, and charisma are significant factors in reaching eminence (Subotnik et al.,
A look at child prodigies helps to help further illustrate current issues in identifying eminence.

**Maldevelopment.** A prodigy is a student who performs at an accomplished professional level in a complex domain early on in their development (Feldman & Morelock, 2011). Child prodigies often have reached levels of expertise in a fraction of the time it takes the average child. Some attribute to this accelerated development to innate ability while others who believe nurture plays a more pivotal role view optimal developmental conditions as the underlying catalyst. Understanding prodigious achievement is important to the field of talent development in that they represent a rare confluence of high-level innate ability, exposure to a domain where that innate ability is useful, access to the people and resources needed to further development within that domain, a willingness to engage in deliberate practice, and the ability to endure negative experiences. Gifted education should look to our ability to develop prodigious youth into adult eminence as a marker of effectiveness in providing adequately differentiated instruction.

Too often, students who demonstrate significantly advanced skills at an early age worthy of the title of child prodigy do not become eminent adults. If we know that those with the greatest natural ability do not automatically transcend to eminence, it is likely that nurture’s role in talent development is significant. It is plausible that a prodigy can obtain the technical skills but needs additional support in developing the non-content related skills within their domain. Because the literature speaks of creativity as an innate construct, its development is often neglected even though its production serves as a primary criterion upon which experts are judged. This could be influential in the field
becoming more effective in servicing the developmental needs of child prodigies. If we control for technical skills, there is potential that psychosocial skills could potentially hold an answer to moderate this maldevelopment.

It is laudable that prodigious children have reached levels of adult performance at an accelerated pace, but rarely do these children grow to become eminent adults who make lasting contributions to their domain. The outliers in this group who successfully transition from prodigy to eminent are among the most notable eminent individuals known in performance literature (e.g., Beethoven, Marsalis, and DaVinci). It is difficult to describe the reason prodigy’s innate talent does not persist throughout life. One plausible reason is the impact of creativity on expert performance as an adult (Subotnik et al., 2011).

Creativity is a mediating factor between expertise and eminence as new and innovative solutions to complex challenges are a fundamental requirement for many of the awards that denote eminence (e.g., Nobel Prize, McArthur Genius Award, Books, and Patents). It is curious that, even though there is clearly a value in society for creative accomplishment, it is neglected in educational systems. If we recognize that in most fields, experts earn the highest awards for creative endeavors, then perhaps we should give creativity a greater place not only in our identification processes, but in throughout developmental trajectories in domains as well.

Teachers should provide gifted students, especially those considered with accelerated levels of performance, explicit instruction in how to apply creative thinking techniques to the domain of study. Research provides that creativity is the result of the interaction between the field, person, and product (Csikszentmihalyi, 1990). It is
plausible that even current gifted identification, selection, and development programs have neglected one or more of these components which has had a negative impact the predictive validity of the overall process. This understanding led me to pursue the role of creativity, its development, and its impact on the transition from expertise to eminence more deeply within in this study.

Need

There is a need for greater understanding of the critical experiences, markers, skills, and dispositions that identify eminent potential as well as a systematic method for maximizing the development of that potential (Subotnik et al., 2011). Increased understanding of these factors and their role in the identification of potential and development of eminence will increase the accuracy of identification processes and help provide guidelines to support comprehensive talent development. I used this study to explore the focus of creative development among jazz improvisers to develop a trajectory that describes the properties and dimensions of their development. This information is needed to provide systematic teaching methodology to music teachers as well as inform the extent to which creativity can be developed in other fields.

Jazz Improvisation

The study of classical music has many methods and processes for developing technical expertise (i.e. Suzuki, Standards of Excellence), but there is little in the way of a comprehensive method for developing talent as a jazz improver. This study sought to create a model of development of talent as a jazz improver that speaks to how creativity is systematically developed within that field. The talent development literature could benefit from a deeper understanding around how creativity, which is ingrained in the task
GIANT STEPS: CREATIVE TALENT IN JAZZ IMPROVISATION

of jazz improvisation, can be developed and how we can replicate this development in other domains.

During this study, I reviewed extant literature around eminent jazz improvisers and interviewed expert jazz musicians to learn more about the environment that allowed them to flourish, the creative skills to which they dedicated effort, the extent to which they felt playing jazz or music came natural to them, how we recognize high potential in students of jazz, and what experiences they felt were critical to their development. My questions sought to provide a look closer into the talent development process and provide the field of practice with a point of triangulation for their current instructional programming.

While there is enough literature that discusses the creative process and products of eminent individuals, there is less research that investigates the components of how they developed their creative ability. There is understanding within the literature that creativity is not an innate ability and can be developed over time which leads us to further explore the types of learning activities that are integral to creative development (Feldman & Morelock, 2011). This study provides a deep look into jazz improvisation to uncover the properties and dimensions of developing creativity within this field with the potential to expand to other domains.

Purpose

A primary purpose of this study is to explore the properties and dimensions of talent development among jazz improvisers to gain a deeper understanding of how this field develops creativity. By creating a systematic method of development, we increase
the likelihood of teachers being able to guide their students effectively and holistically toward expertise.

Conceptual Framework

To create a comprehensive theory based on extant knowledge regarding the development of eminence, Subotnik et al. (2011) created the Talent Development Mega Model (TDMM). The TDMM categorizes individuals as performers or producers as they traverse the three stages of development: ability to competency; competency to expertise; and expertise to eminence, with psychosocial skills as the distinguishing factors between stages. The authors also posit that the role of the teacher is integral to development, and that there are common critical experiences that must be present to reach eminence (Subotnik et al., 2011). Based on the outline of the talent development process for jazz improvisers as discussed later in this chapter, the TDMM provides a well-aligned framework for this study. The basic structure mirrors that of musical talent development and its comprehensive nature allows flexibility to explore this topic without constraints that would prevent teachers from overlooking any aspect of performance.

This study explores the developmental trajectory of expert jazz improvisers with attention paid to the role of creativity as a mediating and moderating factor as they progress through the levels of development. I explored creativity in three facets: the person—psychosocial skills and dispositions of the individual; the process—development of creative ability as an improviser; and product—creative process and product of expert improvisers (Csikszentmihalyi, 1996; Subotnik et al., 2011). I generated and analyzed data using Constructivist Grounded Theory (Corbin & Strauss, 2008; Wertz et al., 2011) methodology to develop a comprehensive model of talent development as a jazz
improviser that clearly delineates the extent to which they focused on creative
development within the process.

Once it was clear that by studying jazz improvisers, I could gain further insight
into talent identification and development, in addition to creative ability, I created the
following research questions to guide the study.

Research Questions

1. What are the psychosocial skills and dispositions exhibited by expert jazz
improvisers at various stages of their talent development? What are the properties
and dimensions of these skills? To what extent can I organize these skills and
dispositions into markers for the purposes of gifted identification? To what extent
are psychosocial skills systematically developed?

2. What are the salient features of the developmental trajectory of jazz improvisers?
What is the nature of the creative instruction they received? What are the common
critical experiences in the talent development process of expert and eminent jazz
improvisers? What opportunities for professional practice were available?

3. What distinguishing creative skills and products mediate the transition between
levels within the developmental trajectory of jazz improvisers within this study?
What are the properties and dimensions of the creative skills and products? To
what extent were the creative skills systematically developed?

Methods

I used the Constructivist Grounded Theory methodology (Wertz, Charmaz,
McMullen, Josselson, Anderson, & McSpadden, 2011; Corbin & Strauss, 2008) to
generate a developmental trajectory for jazz improvisers that focused on creative ability,
psychosocial skills, and dispositions, as well as the properties and dimensions of the development of creative ability. Originally created by Glaser and Strauss (1967), Grounded Theory provides a systematic approach to generating and analyzing data as well as constructing theories based on the current data from the study without strict adherence to extant theory. I chose Grounded Theory in part for the freedom from existing theory in exploring, but also because I was unable to locate empirical research that studied this field with the goal of providing tools for instruction.

Glaser and Strauss (1967) formally established Grounded theory as a methodology. Charmaz (2014) opposed Glaser and Strauss’ positivistic view of traditional Grounded Theory in which researchers created abstractions removed from the specific context and setting. This dissent resulted in Constructivist Grounded Theory (CGT) which is the methodology chosen for this study. CGT places both researcher and the participant as mutual generators of data and accounts for the influence of each on the data rather than attempted objectivity of traditional Grounded Theory. As a musician and music educator, I felt more comfortable including my informed thoughts and experiences than attempting to bracket them and prevent them from influencing the study. I provide a Researcher as Instrument statement so that the reader may learn about my experiences and judge for themselves the extent to which they influenced my research.

Constructivist Grounded Theory studies are characterized by the simultaneous collection and analysis of data, lack of reliance on extant theory, coding of data, use of comparisons, and writing memos (Charmaz, 2014). Throughout this study, I analyzed data as they were generated and grouped into emerging theoretical categories that guided further analysis. Codes were used as conceptual tools to make comparisons between and
define processes within the interview data generated (Charmaz, 2014). Memo writing involved taking notes on the thoughts and decisions of the researcher during the study. Writing memos begins early in the coding process and grew increasingly focused on specific aspects as themes began to emerge from the data. I expand upon these components of Grounded Theory in Chapter 3.

**Participants.** Because of the nature of the topic under study, it did not make sense to use a random sample. Using theoretical sampling (Charmaz, 2014; Glesne, 2011), I selected initial participants who I knew personally that met the criteria of expertise as a jazz improviser. I considered experts those whose experiences as a member of a nationally recognized jazz ensemble where improvisation is a common part of their performing. Ensembles can range from solo performance to large jazz orchestras; however, the essential criterion for sampling is that the ensemble performs regularly in nationally recognized venues for expert performance. I created this criterion to identify expert jazz musicians as there is currently no certification for formal recognition as an expert in this field. This is to ensure the participants have been accepted by the field as possessing an expert level of performance.

Because the ranking system and network of jazz musicians is informal, the study relied on the view of the initial participants to discern who experts within the field are. From the initial participants, I used a technique known as snowball sampling, which allowed current participants to refer additional participants who meet the criteria as an expert. This sampling system was employed to gather participants who met the criteria and could further contribute to the exploration of concepts and themes that I derived from
the data (Corbin & Strauss, Snowball sampling allowed me to locate several additional participants that agreed to participate in the necessary interviews for this study.

**Assumptions.** Fundamental assumptions within this study include the idea that talent as a jazz improviser is not innate and can be developed. If eminent ability is innate, then development serves no purpose and there is considerable literature that supports the development of talent. I believe that participants can accurately recall the most salient learning experiences.

This study is based on the belief that creativity is both valuable and malleable. While some creative ability is innate, there is a great deal that can be learned and developed (Subotnik et al., 2011). I sought to uncover some of the methods for developing creative ability within these participants. While I did not predetermine the details of creative development and allowed them to emerge from the data, the idea that creativity could be developed

**Limitations.** Due to the lack of formal identification for jazz improvisation by public schools, the ability for participants to state whether they were gifted as a child was very subjective and based on participants self-reflective and without quantitative performance data to triangulate. Some remarked that they did not believe they possessed natural gifts but had always been among the best musicians at their school or in their class. Others referenced having to practice diligently to keep up with those they viewed as naturally gifted.

Because this study relied on the recall of participants’ growth and development, the limits of their memory had an impact the accuracy of the findings. It is possible the participants’
recollections were inaccurate. Also, the musician’s current view of talent development might influence the portions of their own development they chose to highlight or ignore.

**Definitions**

I used the following terms in this study:

**Jazz**: Used to refer to Black American music that grew from New Orleans, Louisiana as a combination of French, African, and Spanish cultures. This music is a descendant of the music created by Louis Armstrong and lists Duke Ellington, Charlie Parker, John Coltrane, Miles Davis, Wynton Marsalis, and Thelonious Monk among its standard bearers (Berliner, 1994, Marsalis & Hinds, 2003).

**Shed (also Shedding)**: Used as an action verb, “to Shed” something, “Shedding” or “Going to the Woodshed,” refers to deliberate practice where a musician has a specific goal and is working with the intention on learning a composition or developing a specific skill (Marsalis & Hinds, 2003).

**Solo**: A synonym for improvisation. Used to describe both the act of playing a solo “During his solos” as well as the act of improvising—not exclusive to a single person “Everyone started Soloing at the same time.” (Berliner, 1994, Marsalis & Hinds, 2003)

**Chorus**: A cycle of the chord changes that make up the section designated for improvisation within a composition. Each time a musician improvises across the entire section; jazz musicians consider this to be one chorus. Often, improvisers will play several choruses in succession. In advanced ensembles, musicians often improvise for several choruses where they develop sophisticated musical ideas across (Berliner, 1996).
Chord Changes (The Changes): The harmonic structure of composition to include the underlying chords that comprise the form of the composition. This form is described in terms of the major, minor, augmented, diminished, chords and their harmonic extensions. Each song has a specific set of chord changes to which the improvising musician must adhere. The ability to navigate increasingly complex chord changes is a sign of expertise (Berliner, 1996).

Sound: Musicians describe “sound” in terms of the tone quality and texture of ones playing as well as facets of their playing that are the result of the choice of their instrument and its nuances. In terms of improvisation, having a “sound” refers to the ability to identify a musician’s playing through their approach to improvisation. This is a consideration at the highest levels of expertise.

Sound also describes the tone and texture of sound that results from the material from which the instrument was constructed, choice of mouthpiece, customization of the instrument, and any other physical considerations. Also, breathing is fundamental to sound. This is discussed at more fundamental levels as it can have a negative impact on ones’ Sound, but that is not a regular discussion among experts as this is a fundamental component of the competence phase.

The Pocket: The pocket references the tempo and rhythm of a composition. “Keeping it in the pocket” refers to a musician’s ability to play at tempo without being faster or slower than the ensemble. “Finding a Pocket” refers to playing a rhythm or phrase that fits uniquely within the rhythmic frame of the composition. (Berliner, 1994, Marsalis & Hinds, 2003)
**Time:** Having good Time refers to being able to play in tempo without fluctuation. Jazz musicians also refer to the drummer as the timekeeper, as he or she is responsible for setting the tempo and maintaining it throughout the song. (Berliner, 1994, Marsalis & Hinds, 2003)

**Giftedness:** Giftedness is the manifestation of performance or production that is clearly at the upper end of the distribution in a talent domain even relative to that of other high-functioning individuals in that domain. Further, the field looks at giftedness as developmental, in that in the beginning stages, potential is the key variable; in later stages, achievement is the measure of giftedness; and in fully developed talents, eminence is the basis on which this label is granted. Psychosocial variables play an essential role in the manifestation of giftedness at every developmental stage. Both cognitive and psychosocial variables are malleable and need expert teachers to support their development. (Subotnik et al., 2011, p. 7)

**Prodigy:** A child who performs at an expert level in a complex domain exceedingly early on within their developmental trajectory (Feldman & Morelock, 2011)
Chapter 2: Review of Literature

This study looked at retrospective accounts of expert jazz improvisers to determine the properties and dimensions of their talent development process with a specific focus on creativity and creative development. The domain of jazz improvisation is uniquely able to provide insight into creative development as the task of improvisation is itself a creative act. The fundamental nature of creativity to jazz improvising means there must be some effort dedicated to developing creativity within their trajectory. The relevant literature comes from studies around jazz improvisation, talent development, and creativity.

Talent Development

While innate abilities can heavily influence giftedness, there is ample evidence to support the belief that ability alone is not enough to achieve eminence (Bloom, 1985; Subotnik et al., 2011). This speaks to the need for talent development programs that even the most gifted students will rely on to maximize their potential. This viewpoint does not discount the role of innate ability as impacting the talent development process but understands that systematic development is also essential to reaching eminence.

Ericsson & Charness speak to the need for the systematic development of talent through what they call Deliberate Practice (DP) (1994; Ericsson & Pool, 2016). Within the DP framework, students must engage in a minimum of 10,000 hours of practice with a keen focus on improvement to reach expertise. For students seeking to develop expertise in a domain, it is essential they understand that they are required to engage in
deliberate practice within their chosen field regardless of their natural ability. While research has generally accepted that a considerable amount of time is needed to develop expertise, this study looks at the properties and dimensions of the activities that comprise that timeframe. I sought to qualify the learning experiences that make up the quantity of time required to become an expert.

It should not be assumed that every individual who practices for 10,000 hours will master a domain (Ericsson & Charness, 1994). I sought to contribute data to the field that speaks to the properties and dimensions of the instructional activities that yield the highest results to make the most efficient use of the process. While the quantity of practice will likely lead to advanced levels of performance, the student with the support of experts in the field must structure and specifically engage in learning experiences to address deficiencies in performance. A significant factor in this process is the role of the teacher in designing learning experiences specifically tailored to the current level of performance of the student.

Teachers are the shepherds of talent that are responsible for guiding students through several dimensions of increasingly challenging content and skill development. At the stage of competence within the TDMM, there is a need for a teacher who is fully aware of the requisite skills to be developed and the techniques and strategies that can be employed to develop them (Subotnik et al., 2011). In many cases, experts within a field are also in search of gifted students who are eager and able to benefit from their teaching (Zuckerman, 1996). This study explored the extent to which those who guided these experts during their development made creativity a focal point of their lessons. There is
the potential that teachers play a role in developing creativity that has not been fully explored.

**Conceptual Framework**

I selected the Talent Development Mega Model (TDMM) as the conceptual framework for this study because the authors designed it to provide a comprehensive framework to study talent development. Its’ attempt at being all encompassing was useful in exploring a domain that does not currently have a commonly accepted structure for development. Gifted children are determined, and their gifts must manifest through exceptional performance among high-functioning adults. TDMM respects the effects of individual’s abilities and societal opportunities have an impact on the developmental trajectories vary by domain. Within the TDMM, eminence is defined as: "the manifestation of performance that is clearly at the upper end of the distribution in a talent domain even relative to other high-functioning individuals in that domain" (Subotnik et al., 2011, p. 7) As this study used expert jazz improvisers as participants, there is a natural alignment with the belief that giftedness is a state of performance where the individual’s gifts must be realized to be recognized.

This definition describes eminent individuals as exceptional even among the highest levels of performance. The field distinguishes this level of performance by the awards reserved for the highest levels of expert performance. The Nobel Prize, Academy Award, Pulitzer Prize, Mensa Award, and McArthur Genius Award are but a few examples of these types of awards given to those who reach eminent levels of performance within competitive fields. In most cases, fields give these awards for creative contributions that add new knowledge or solve long standing problems.
Before an individual can be determined to be eminent within a domain, they must complete a developmental trajectory that earns them a place among the field of experts. Eminence is distinctly different from fame in that it is not dependent upon popular opinion, but the opinion of the field in which they practice. Those who earn the distinction of eminent have often spent years as an expert. It is possible, but unlikely that a person who is not an expert in a field brings to bear an eminent innovation or solution in that field.

**Exposure**

If a child is not exposed to a domain at home, school, or church, their gifts may not be realized. Steve Jobs and Bill Gates would not likely be among the greatest inventors of our time had they not been introduced to computers as children. While IQ measures will allow a child, who is verbally or mathematically gifted to demonstrate their gifts, this may not show students potential ability in other areas like writing code, designing computer programs, bodily kinesthetic or artistic gifts a student may possess. Once a student is exposed to a domain, trained individuals can determine if they possess any natural ability within that domain. However, a student who is not exposed to a field of study could potentially never recognize or demonstrate their giftedness. It is ideal if the student is exposed to a domain in which their natural abilities are useful in its performance.

In academics, giftedness is often determined by standardized assessments that use multiple-choice items to gauge a student’s achievement and aptitude in core area subjects. In athletics, teachers and coaches take note of students who have elevated levels of natural ability once they begin to play the sport and outperform their age peers.
Likewise, a gifted art student may stand out due to their ability to draw or sketch lifelike portraits. Each of these scenarios looks at the performance of the student to determine their skill level and attempt to discern potential based on domain-based performance in a field to which they have been exposed. If a student is not exposed to the field, the chances of them reaching eminence are diminished as these types of performance identification would not be available. Exposure to the domain must be met with a mentor or teacher who is able to recognize the natural ability and help to engage the student in the trajectory of their gift. This person will support the student as they decide to pursue serious study and enter the competence phase of their development.

**Competence**

The second dimension of the TDMM refers to a level of development above novice and below expert known as Competence. This is a stage of intentional development in which Deliberate Practice will take place (Ericsson & Charness, 1994; Subotnik et al., 2011). During this stage, the student systematically develops his or her ability toward expertise within the chosen field (Gagne, 2004). In moving from Ability to Competence, the student is learning the fundamentals of their craft to include the rules, conventions, and fundamental techniques of performance. Logically, Competence should be a lengthy phase as it encompasses every stage of development between novice exploration and Expertise. Throughout this time the musicians engage in what has been quantified as 10,000 hours of deliberate practice during which the student pursues mastery within the domain (Ericsson & Charness, 1994).

The TDMM divides talent domains into two categories, performer, and the producer (Tannenbaum, 1983). Both the performer and producer must progress through
their respective domain’s trajectories until they reach mastery and exhibit the requisite psychosocial skills for success within their chosen domain (Subotnik et al., 2011). The two differ in that performers are limited by their physicality, have their work judged primarily by experts within the field, and have a clearly defined set of goals for their performance. Producers are less limited by their physicality, and often have more diffuse, long-term projects that include the creation of multiple drafts and revisions of what will become the final product (Subotnik et al., 2011).

The jazz improviser is unique in that he or she can be considered both a producer and a performer within the TDMM’s framework. In contrast to classical performers who are performing a previously written piece and interpreting the composer’s intent, jazz improvisers are often composing as they perform and bringing meaning to their playing as they create (Marsalis & Ward, 2008). Expert jazz improvisers demonstrate psychosocial skills that allow them to attain higher performance goals, possess the physical ability to perform at elite levels, and have clearly defined goals, as do performers with the TDMM.

As producers, jazz improvisers also prepare and study the fundamentals of composition and engage in lengthy tasks that are often complex while spending extended periods in isolation exploring compositional techniques and devices (Berliner, 1994; Subotnik et. al, 2011). This duality arises from the unique role of a jazz improviser as a composer and performer in that they are playing original melodies in a live or real-time setting where these constraints are embedded within the task. There is the potential for ample knowledge to be gained from exploration of this unique domain.
Improvisation can also be viewed as a form of composition. The difference between improvisation and composition is that the composer has an opportunity to edit their work while an improviser creates in public performance settings that do not allow revision (Rogers, 2013). Musical composition normally refers to a process in which a composer creates, revised, and edits the work over an extended period. Jazz improvisers must simultaneously compose and perform, which prevents the deliberation and incubation afforded a composer but has the same goal of meeting a high level of performance (Rogers, 2013). This difference between composition and improvisation represents a significant difference in the creative process. The lack of time for deliberation in creating the final product means that the jazz improviser is employing a spontaneous element within their creative process not found in many creative fields.

Csikszentmihalyi (1996) refers to the portion of the creative process where deliberation occurs as incubation. While not to say that there is evidence of jazz improvisers not deliberating on their performance, experts in this field do not engage in this thought process when performing. The incubation portion of the creative process involves conscious and unconscious thought about the product being created while not directly engaged in the production of the creation (Csikszentmihalyi, 1996). In jazz improvisation, because the performance and the compositional processes happen simultaneously, incubation takes a slightly different form from what Csikszentmihalyi (1996) describes. In addition, the creative process of the jazz improviser is most often a collective process. When a single musician begins to improvise, those musicians who are accompanying are also improvising (Berliner, 1994; Rogers, 2013; Marsalis & Ward, 2008). The resulting performance is the collective improvisation of the musicians filling
predefined roles in the spontaneous improvisation during a performance (Harris, 2011; Marsalis & Hinds, 2003).

There are competing accounts of the relative importance, and malleability of the creativity throughout the talent development process (Gagne, 2003; Gardner, 1995, 1997; Gladwell, 2007; Subotnik et al., 2011). This study sought greater understanding regarding how and when an individual’s gifts begin to manifest and the extent to which they exhibited and developed creativity throughout their trajectory. There is also a need for further exploration of the learning experiences geared toward increasing one’s creativity.

Expert jazz improvisers development includes extended periods of individual practice geared toward specific goals, objectives, and skills (Berliner, 1994; Marsalis & Hinds, 2003). Among musicians this process is referred to as “shedding” or “going to the woodshed” within research, this is described as Deliberate Practice (Ericsson & Charness, 1994). Many researchers continue to posit the importance of natural ability as a primary contributing factor to prominent levels of expertise but there is little if any evidence of individuals reaching eminence without engaging in a significant period of talent development. As Subotnik et al. (2011) describe the stages of development; this would fall under the second stage of Competence where the individual is learning the rules, values, and norms of the field. This process involves years of studying, a variety of teachers and mentors from within the field, and several challenges through which the student must traverse.

**Deliberate practice**

During the competence dimension of their trajectory, jazz musicians often report spending several hours daily engaged in activity geared toward the improvement of
specific skills (Berliner, 1994; Marsalis & Hinds, 2003). The focus of this stage is an in-depth understanding of the rules and conventions of the domain and developing mastery of the fundamental skills respective to both their instruments and the art of improvisation (Bloom, 1985; Ericsson, 2008; Ericsson & Charness, 1994).

An important consideration of deliberate practice during this phase is that it has a specific focus on reproducible expert performance without attempting to account for eminence. Ericsson and Charness (1994) place limitations around the deliberate practice framework by stipulating that their work does not apply to “major artistic and scientific innovations, because they cannot be repeatedly reproduced on demand” (p. 726) and this is where my study seeks to add to the literature. I adopted the viewpoint that deliberate practice is not only essential to talent development, but also major artistic innovations. While individuals are not be able to practice and predict when they will make major innovations, practitioners’ ability to repeat the steps used to develop the persons skill set to be able to make a high-level creative contribution is worthy of scholarly study.

Deliberate practice is responsible for achieving mastery of the technical facets of a domain, but not achieving eminence as that level of achievement is unable to be predetermined. Thus, deliberate practice is not attempting to present itself as the path to eminence, but to the level of expert, from which eminent individuals ascend. There are several factors outside the limitations of this study that contribute to eminence, but this study does posit creativity as one of those factors and looks closely at its development.

Even though deliberate practice is not the only factor in achieving eminence, its role in achieving expertise cannot be overlooked and therefore is essential to the developmental trajectory toward eminence (Ericsson, 2008; Ericsson & Charness, 1995;
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Gladwell, 2007; Subotnik et al., 2011). Eminent individuals must first become experts before they can create a meaningful innovation to move their field forward (Csikszentmihalyi, 1990; Rogers, 2013).

Scholars have posited that a minimum of 10,000 hours of continual study is required for a competent individual to achieve mastery (Ericsson, 2008; Ericsson & Charness, 1994; Gladwell, 2011; Subotnik et al., 2011) but there is more to be learned about what types of activities comprise this timeframe. This study sought to further the work of qualifying the quantity of time proposed within the deliberate practice framework.

Within the development process of jazz improvisers there are several skills referenced within the literature. Among these are auditory discrimination (Mosing, Madison, Pedersen, Kuja-Halkola, & Ullén, 2014) technical mastery, vocabulary, transcribing, repertoire, and engagement within the community of professional musicians (Berliner, 1994). Many artists refer to the various components of their development process during interviews and in autobiographical sketches although they have not been employed in a systematic fashion. A goal of this research was to provide specific guidance to those instructing students within this field to ensure that all components of this process are covered, and students are prepared for the rigors of expertise as a jazz improviser.

While there are varying perspectives as to whether genetics are a more significant contributing factor than training and high-quality learning experiences, there is little debate of the necessity of practice to become an expert. If a musician is not working systematically to improve his or her performance during the competence phase, there is
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little evidence to support increased achievement, regardless of natural ability. The differentiating factor in this process could be the quality of practice. The act of playing an instrument does not constitute Deliberate Practice because there must be a focus on structured improvement.

“I only practice when I’m working on something” - Coltrane (Marsalis & Hinds, 2003).

While this quote from Coltrane seems to be a straightforward proclamation, we must unpack the profound insight into talent development contained in this statement. The wisdom in Coltrane’s quote lies within the significance of the difference between deliberately practice and simply playing an instrument. The physical act of playing an instrument does not imply that the musician is making deliberate efforts to improve his or her performance. It is the deliberate effort toward continuous improvement that leads to expertise (Ericsson & Charness, 1994; Subotnik et al., 2011). Shedding, as described by the participants, is much more nuanced and effortful than simply playing an instrument without a focus on improvement.

As a band director, I would often discuss practicing with my students. I required them to maintain records of their practice and I encouraged them to practice every day. When I began to ask them what they practiced, they would often spend time playing their favorite songs and things that they had learned previously. This activity rarely translates into improved overall performance because the student did not make any intentional effort toward getting better. They simply spent time playing the instrument. While this type of effort can increase musicians’ endurance and increase their ability to play that piece (or pieces) of music, it will not increase their overall ability in any meaningful way or teach them new skills.
In a recent study examining auditory discrimination as a factor of deliberate practice among twins, the correlation between deliberate practice and performance on tasks of auditory discrimination researchers found to be insignificant (Mosing et al., 2014). The author’s use these findings to purport that there is no association with development of talent beyond that which one is born with. Mosing’s study assumes that the skill of auditory discrimination is representative of musical skill in both its impact on overall ability, and its ability to be developed.

One issue with this approach is that the instruction within the programs is not tailored toward individual needs. There must be a focus on improving the specific characteristics of a student’s individual performance to talent development to be effective. Deliberate practice provides that for students’ potential to be maximized great attention and care must be exercised in selecting a teacher who can accurately assess a student’s current ability and provide appropriately challenging tasks (Ericsson & Charness, 1995). Analyzing the quantity of practice without regard for the quality of the teacher and his or her impact on individual development will increase the possibility of a Type I error being made when applying the deliberate practice framework to the data. By identifying the specific activities that comprise the period where the student is acquainting themselves with the conventions of the domain, I hope to support teachers of jazz improvisation by providing a framework for them to operate within.

Another methodological issue in Mosing et al.’s (2014) study is choosing a single musical skill and seeking to generalize development of that single skill to represent musical performance in a larger sense. While individual facets of musical performance, such as auditory discrimination (Mosing et al., 2014), may be a skill that is common
among professional musicians and essential to expert levels of performance, a single component of musical performance cannot be generalized to represent the entire task of becoming an expert musician (Csikszentmihalyi, 1990).

Auditory discrimination could also be a skill that is heavily influenced by genetic predispositions. Musicians with perfect pitch, an innate ability to recognize pitches and chords with exacting precision, as well as those with a well-developed ear have both reached eminence. It should also be considered that when exploring development within a limited timeframe there may not have been ample time allotted for an ability to show demonstrable improvement.

Although there are disagreements about whether nature or nurture plays a bigger role in the talent development process, there is general agreement that both are contributing factors in reaching eminence. This study sought to ascertain the role of nature or innate ability, as well as nurture or development within the trajectory of experts. This study analyzed innate and developed ability not to determine which played a larger role in the development of the individual, but to provide a theory that contributes to a more nuanced argument regarding how innate skills and dispositions work in concert with those that are systematically developed.

Teachers and Mentors

Ericsson and Charness (1993) provide that deliberate practice must be systematically designed to improve a students’ performance within the domain and conducted under the guidance of a skilled teacher. The teacher must be able to accurately assess a students’ weakness and provide learning experiences narrowly tailored to strengthen their deficits. A greater understanding of the role of the teacher in crafting
experiences geared toward creative ability will further contribute to the field’s understanding. Because the trajectory of jazz musicians includes attention to creative skills, the study of their development deepens the field’s understanding of creativity’s teachability.

According to Bloom (1985), the second stage of the talent development process includes an extend period of learning the knowledge and skills of a domain. During this phase, a student seeking to systematically develop his or her talent should be placed under the guidance of experts within the field who is possess the knowledge and skills to develop the student's natural abilities into competence within their domain (Bloom, 1985; Rogers, 2013; Subotnik, 1995; Subotnik, Edmiston, Cook, & Ross, 2010; Zuckerman, 1977). In the text *Scientific Elite*, Zuckerman (1977) found that 52% of Nobel laureates in the United States before 1976 were mentored by former laureates. These relationships ranged from student to junior collaborator and often lead to lasting friendships and even intermarriage among laureates’ families. There is an understandable connection between these individuals that is built by being in a highly specialized field where your work relationships often intertwine with personal relationships. However, the initial connections between laureate and student are noteworthy and hold implications for the findings within this study.

There is considerable evidence of highly gifted adults seeking out children whom they believe have the potential for reaching high-levels of performance. Although they may not be able to prescribe with certainty which students will reach eminence, they often are able to identify fundamental characteristics of those with exceptional talent. In the literature, it appears as if the relationship is based on common interest as well as a
desire for their research to continue beyond their work in the field. Laureates often sought out students who they deemed to be talented to work with them. The pre-Nobel apprentices seemed particularly keen to the most cutting-edge work in the field and were able to systematically seek out the professors with whom they sought to work (Zuckerman, 1977). There is potential this mutually sought-after relationship is present within the jazz community as well.

Zuckerman (1977) describes the criteria for physicist laureate Enrico Fermi as observed by Segre thusly: "He decided also that they had to be seriously interested in physics and of reasonable ability so that his time would not be wasted. Given the right quality, he would see to it that they were taught" (p. 110). The first criteria given is "interest" which in this case refers to physics however, evidence exist to support interest as a primary component of elite talent in myriad domains (Csikszentmihalyi, 1996; Ericsson, Krampe, & Tesch-Romer, 1993; Subotnik et al., 2011).

As Enrico Fermi served as a mentor to some six Nobel laureates after he had earned the distinction himself. The same could be said of big band leader and jazz great, Bill Eckstine, whose roster of mentees includes Miles Davis, Charlie Parker, Dizzy Gillespie, and several other expert jazz musicians. Art Blakey's group, The Jazz Messengers, was also known for taking in promoting young artists and guiding them toward successful careers within the field. Lee Morgan, Wynton Marsalis, Chick Corea, Donald Byrd, Terrance Blanchard, Wayne Shorter, and several other musicians who went on to expertise and eminence spent time as member of the Jazz Messengers (Berliner 1994).
There is evidence to support the idea that many expert jazz musicians worked with or studied under great musicians of prior generations. There is potential for future research regarding what characteristics a mentor or apprentice seeks in their counterpart to better understand this relationship. There is also the need to consider the impact of students who wish to study jazz that do not have access to mentors or teachers.

**Critical Experiences**

Throughout the stages of development, there are often several critical experiences necessary for talent development (Subotnik et al., 2011). Critical experiences are events that play a pivotal role at specific points throughout an individual’s growth i.e. attending selective schools, participating in extra-curricular activities, or entering competitions designed for exceptionally talented youth (Gladwell, 2007; Subotnik et al., 2011). Many of the critical experiences take place because of the guidance of a mentor or teacher.

Critical experiences are often a factor of the student’s engagement within the professional community of musicians. Frequently, members of the field issue spontaneous challenges to the young musicians on the bandstand allowing them to experience the rigors of performance as a professional musician. These challenges are authentic in nature as unplanned improvisation will often occur during an actual performance. Marsalis (2003) speaks about one critical experience during his autobiographical account of being asked to play within a tough key signature (Db minor) when he first performed with an orchestra upon moving to New York. While he recounts his thorough embarrassment in the moment of the performance, he resolved that key would not defeat him twice and went home and immediately began to practice playing in
that key. This type of resilience is a psychosocial skill that is often needed to be successful as an improviser (Marsalis & Hinds, 2003).

Researchers have explored psychosocial skills and disposition in play during expert performance (Csikszentmihalyi, 1996) There is still a need for further research regarding the extent to which these skills were innate and/or developed. Greater understanding of the development of the creative person regarding their psychosocial skills and dispositions could provide data to which educational programs can align their curriculum (Subotnik & Rickoff, 2010). Understanding which psychosocial skills are viewed malleable and essential to development will allow curricula to be tailored toward high yield Although there may or may not be genetic basis for the students’ skills, a greater understanding of how and when these skills begin to manifest as well as their ability to be systematically developed may prove valuable (Subotnik & Jarvin, 2005; Subotnik et al., 2011).

It is notable that many musicians who are now experts approaching eminence often have endured several failures that are regarded as learning experiences rather than barriers. Within the narratives of musicians as they encounter these setbacks, many more experienced musicians would provide anecdotes of when they encountered similar situations and how they helped them to develop into a more resilient performer (Marsalis & Hinds, 2003). It is understood that performance artists will often make mistakes, but it is essential that they develop the ability to move through their mistakes without derailing from the trajectory. Miles Davis is often paraphrased as saying that a single mistake is just a mistake, but a mistake played twice is jazz. While this is not an absolute truth, it does speak to the opportunity for creative performers to view mistakes as opportunities.
Literature describing the development of eminent ability posits that most students began to learn and act as professionals within their discipline early within their career (Berliner, 1994; Gladwell, 2007; Rogers, 2013). By scaffolding the entire task of improvising down to a level that a novice can master, the teacher is providing Whole Task Sequencing (WTS). WTS has been stated as an important facet of developing talent as a jazz improviser (Rogers, 2013).

Experts often encourage novice improvisers to perform alongside professional musicians during live performances to gain experience in an authentic setting (Berliner, 1994; Marsalis & Hinds, 2003). This experience provides the musician with an immersive learning experience that allows the student to gain valuable implicit knowledge in an authentic setting that prepares them for professional work.

**Eminent Improvisers**

Those who engage in the competence phase of development and endure the rigors of its dimensions may eventually be viewed as experts within the domain. These individuals have mastered the properties and dimensions of the competence phase through deliberate practice during a process that can take upwards of 10,000 hours.

The eminent improviser is regarded by the field as an expert who offers a lasting creative contribution within a domain and is recognized by the field of experts and observers as worthy of the designation (Csikszentmihalyi, 1996). Because this study sought to identify the markers and critical experiences within the development of talent as a jazz improviser that resulted in high levels of expertise, a retrospective approach to determine common elements among participants serves this purpose well. Because the natural scarcity of experts in any field and resulting unavailability of eminent jazz
improvisers provides a significant challenge in sampling. I also sought to use extant literature written by and about eminent jazz improvisers as a source of data triangulation.

In examining what he called Extraordinary Minds, Howard Gardner (1997) identified four types of individuals that their respective fields have bestowed upon them the title of eminent. As Gardner examined the lives of Wolfgang Mozart, Sigmund Freud, Virginia Woolf, and Mahatma Gandhi, he respectively classified them as Master, Maker, Introspector, and Influencer. In examining extant literature regarding eminent jazz improvisers, the researcher interpolated these criteria to select four eminent jazz musicians to be included within the study.

These categories are not mutually exclusive and always appear in combination. It is impossible for one to make a meaningful contribution that changes a field if they have not already reached mastery within a field. Likewise, it is unlikely that a person who is not widely regarded as a master would be able to influence others. For the purposes of this study, these categories have been created to allow for purposes of analysis only. There are several individuals who qualify under each heading. I chose these individuals so that a knowledgeable, interested person who is not familiar with jazz may recognize them and be at least tangentially familiar with their work.

**Master.** The Master represents an expert within one or more fields who operates at an exceedingly high level within established practices. Mastery is almost synonymous with expertise, which is the result of a talent development process of some kind. For this role, Gardner (1997) chose Mozart who was most revered for his mastery of piano performance and composition, even though he was also a great improviser. In contrast to the Maker, who creates a new aspect within a genre or a new genre, the Master has
reached extremely high levels of performance and attainment of pre-established conventions. Mozart is one of few musical child prodigies who transitioned into adult eminence (Gardner, 1997). Having composed his first works before the age of ten and remaining in a position of prominence within musical communities until his untimely demise, he is the master upon which Masters in many domains are measured.

To be a master means that you have conquered every facet of the domain. Masters are those who have achieved a high level of fluency of each skill required for performance within the domain. While it is not required that a master be an eminent creative, they must function at high level within every aspect of their performance. As in the case of Mozart, an understanding of the eminent individuals who preceded him, as well as mastery of the conventions and common practices of the music are fundamental to his ability to innovate within the field.

The Master jazz improviser referenced within this study is Wynton Marsalis. Like Mozart, Marsalis was regarded as a prodigy in his youth who developed his prodigious accomplishments into a career as an eminent jazz and classical musician. Marsalis first performed with the New Orleans Symphony at the age of 12 and is credited with having an internationally renowned adult career as a jazz improviser, classical soloist, and composer in both jazz and classical genres. Marsalis is one of few artists to earn a Grammy award in both classical and jazz categories. Marsalis also won the Pulitzer Prize for his oratorio *Blood on the Fields* in 1997 (Marsalis & Hinds, 2003).

Marsalis was born in Kenner, Louisiana to a musical family where his father, Ellis Marsalis, was and still is an expert improviser. Marsalis showed his prowess at an early age and has documented his journey to eminence as well as his advice to students seeking
to develop talent as an improviser in his multiple writings (Marsalis & Hinds, 2003; Marsalis & Ward, 2008). As the current Artistic Director for Jazz at Lincoln Center, Dr. Marsalis leads the only full-time big band in the country. In addition, he is actively composing for the jazz orchestra as well as classical orchestral works. Marsalis is both a producer and a performer according to the TDMM who has reached eminent levels of performance in both pursuits. His development process is well documented and served as a point of eminent triangulation for data analysis (Marsalis & Hinds, 2003; Marsalis & Ward, 2008).

**Maker.** The Maker has mastered an existing domain and contributes to the creation of a new domain. This is the Big “C” Creativity presented by Csikszentmihalyi as moving a domain forward (Csikszentmihalyi, 1996). In his text, Gardner describes Freud as a prototypical Maker as he mastered the principles of psychology and combined his mastery and creative thinking to develop a new field of study; psychoanalysis. It should be noted that other eminent individuals chosen to triangulate this study could meet criteria for multiple labels (Marsalis or Parker could be a Maker; Parker or Davis could also be considered Masters). Each musician was placed with the label that best supported their participation within the data analysis.

Within the current study, Miles Davis played the role of the Maker. In an era of jazz inundated with the fast-paced, harmonically complex sounds of a genre known as Bebop, Miles Davis is attributed with leading the segue into a more relaxed, subtle manner of performance that came to be identified as cool jazz (Berliner, 1994). The defining work of the cool jazz era, Davis’ (1959) *Kind of Blue*, remains the highest selling jazz album of all time (Berliner, 1994).
A Pro-C Maker is a professional composer who has developed a style of their own that is recognizable. Like a renowned chef’s recipes, a composer may incorporate specific rhythmic devices, harmonies, or compositional techniques that speak to their personality. Duke Ellington, an eminent composer, musician, and bandleader, is a seminal example of this category.

Ellington is known as a prolific composer credited with thousands of compositions over his lifespan (Marsalis & Hinds, 2003). His compositions used a variety of colors created by his unique combinations of mutes, instrumental combinations, and harmonies that has a distinct style and sound associated with Ellington. Even though this does not create an entirely new subset of music within jazz, he has created a sound that is associated with his compositions that is enduring within the domain years after his life.

**Introspector.** The Introspector is an eminent individual who focuses inward for inspiration and relies on his or her life and experiences as fundamental to his or her work. Gardner enlisted the life and writing of Virginia Woolf to demonstrate this facet of eminence. Introspectors explore their own consciousness, life, and experiences to find a muse for their work (Gardner, 1997).

In this study, John Coltrane served as an Introspector. He often communicated his spiritual beliefs through various musical elements within his compositions. The prominent of which, A Love Supreme, was written in the structure of a black church service. In addition, Coltrane often set out to compose and perform extremely complex solos as an exploration of his ability not to exceed his competition but prove to himself that his skills were adequate for any musical challenge presented (Berliner, 1994).
Coltrane was considered by many to be a spiritual person who evoked worship through his playing.

**Influencer.** The Influencer uses his or her talent to direct the behavior and/or beliefs of others as Gandhi did through political and social movements in India (Gardner, 1997). Charlie Parker is one of the most influential individuals within the history of jazz improvisers. As mentioned regarding his Big-C contribution above, Parker was an instrumental figure within the development of the Bebop style of jazz (Berliner, 1994). An understanding of Parker’s playing is considered a part of the standard repertoire of every improviser, especially saxophonists (Berliner, 1994; Marsalis & Hinds, 2003; Rogers, 2013).

**Creativity**

The researcher will investigate the extent to which each of the respective skills and dispositions associated with talent development were an explicit or implicit instructional focus during the participants' learning trajectory. When engaging in Flow, the individual must have clear goals, receive immediate feedback, have a balance between the task and their skills, and be free from worry, concern, or self-consciousness (Csikszentmihalyi, 1990). This study will also explore the extent to which participants merge the action of playing their instrument with their cognitive process as an improviser and seek to elicit any change in thinking of their cognitive creative process since their development (Csikszentmihalyi, 1990, 2007).

Information exists in the literature regarding the possession of skills and dispositions that lead to eminent contributions, yet there is still a need for further research regarding which skills received the most significant focus within this population and
experts as students were guided in their path to learn more about improvisation (Subotnik & Jarvin, 2005; Subotnik et al., 2011). Greater understanding of the development of creative potential could provide educational programs with increasing support for tailoring their curriculum toward a more efficient method of cultivating eminent experts (Subotnik & Rickoff, 2010). In addition, a greater understanding of how the creative individual develops will give guidance to those seeking to identify eminent potential in youth.

After being exposed to a domain and beginning study, individuals move through a complex trajectory under the guidance of a teacher who can correctly assess the students’ performance and a parent who encourages and supports further development of talent at each stage (Subotnik & Jarvin, 2005; Subotnik et al., 2011). The stage of development is lengthy and multifaceted as the student will remain in this stage until they master the rules and conventions of their field and are considered an expert.

In the Scholarly Productivity/Artistry model, Subotnik and Jarvin (2005) explain the variables that mediate the transition between stages of development based on the psychosocial skills exhibited by the individual at various moments in time. In this study, the researcher sought to create a parallel model that describes the transition between stages using exhibited creativity as a factor in addition to their psychosocial abilities. This greater understanding of the skills and dispositions exhibited at various stages during the development of creative ability will aid in the identification of eminent potential (Subotnik & Rickoff, 2010).

Researchers separated creativity into two categories, Big-C, and little-c. Big-C creativity represents unique innovations that move a field of study forward while little-c
refers to much less significant creative events that fall within predetermined conventions (Csikszentmihalyi, 1996; Subotnik et al., 2011). The Four C model sought to provide additional distinctions to the big-C and little-c creativity through advent of mini-c, and pro-c (Beghetto & Kaufman, 2009).

Mini-c creativity describes the unique, personally meaningful interpretation of experiences, actions, and events. The author presents this form of creativity to represent creative insight of young persons and creative products that might not have meaning for anyone other than the creator (Beghetto & Kaufman, 2009). Beghetto and Kaufman describe mini-c by citing a child’s combining of personally meaningful objects or ideas to form a new thing (e.g., a cucumber king) or adults creating a scrapbook or photo album as examples. Mini-c creativity allows those creative activities that exist outside the restraints of a formal domain to be separated from those that require knowledge and skill to be creative.

Pro-c creativity describes professional level expertise that is beyond little-c but has not reached big-C recognition. This is where professionals demonstrate creativity in the execution of their craft. Like a chef creating a recipe or lawyer crafting a legal argument, this level of creativity requires expertise, but does not move the field forward (Beghetto & Kaufman, 2009).

Big-C creativity causes a permanent change in the structure of a domain. The invention of the combustion engine, electricity, personal computer, and iPhone all fundamentally changed the way domains operated and are examples of Big-C creativity. This includes the creation of genres that did not previously exist, like Charlie Parker’s contribution to Bebop and Miles Davis’ Cool Jazz. A Big-C contribution changes or
meaningfully moves a domain forward in a way that is recognized by the field. Big-C is a mediating factor in achieving eminence. Without out this level of creation and recognition, the individual would remain among the pool of experts from which eminent individuals emerge.

Eminence and fame often exist in the same space but are not the same construct. Eminent musicians like Charlie Parker achieved fame by consistently demonstrating his expertise and skill as over time with great admiration from the field of experts. Eminence is never the result of overnight success. It is an arduous and ongoing process of refinement. This is an important distinction between fame and eminence and the goal of this study is to better understand how we can develop an increasing number of eminent adults from the field of gifted children in programs across the world.

Also, of importance to the understanding of creative production is a potential explanation for the moment of insight often referred to as the “aha” moment (Csikszentmihalyi, 1996). The fact that this moment of discovery happens at a time when the individual is disengaged from the problem they desire to solve is no coincidence. While at rest, the prefrontal cortex is not regulating the brain’s activity which allows for an increase divergent thinking. If the individual is an expert with a wealth of domain specific knowledge contained within the prefrontal cortex, not actively thinking about the problem allows a type of free association in the brain between networks that may lead to a creative solution. While the prefrontal cortex is at rest, the brain allows complex ideas to connect freely. In this moment, it is possible that the association cortex is facilitating connections between areas of the brain that the expert has programmed their prefrontal cortex to ignore, or it has never recognized.
An extreme example of this type of cognitive association is known in humans with a positive neural condition known as synesthesia. Individuals with synesthesia, or synesthetes, have concrete representations between unrelated senses, such as taste and sound, or touch and smell. Diffusor Tissue Imaging scans have helped to demonstrate these perceptual differences to be both genetic and environmental (Jancke, 2014). The brain of a synesthete has an increased number of connections in comparison with a neurotypical brain, which is a genetic disposition. The scenes where their synesthetic connections manifests (numbers having specific smells) is often based on prior life experiences where this association was introduced (Jancke, 2014).

Another neurological condition where similar brain activity is present although to a far greater degree is in schizophrenia, a condition where the mind loses ability to regulate thoughts, behaviors, or emotions. The irrational associations of schizophrenics are evidence of their advanced functional connectivity, but their inability to differentiate real from imagined shows their deficit of their ability to engage their prefrontal cortex in any regard.
Chapter 3: Procedures

This chapter will discuss the sample, participants, research tradition, as well as the methods of data collection and analysis used in this study. I used these methods to generate data and analyze the developmental trajectory of jazz improvisers by employing the tenants of Constructivist Grounded Theory. I detail the efforts in connecting with expert jazz musicians, conducting interviews, as well as the challenges associated with generating a sample. There is also a discussion of the setting and process of the interviews to ensure that there is a clear explanation for the data included and the relevance to the study are fully understood.

Sample

As this study sought to understand talent development among a specific population, theoretical sampling was required to ensure engagement within the target population. The first participant was a close family friend, Charles Gabriel, who agreed to participate in the course of our natural interactions. Mr. Gabriel, or Uncle Charlie as he is affectionately referred, has spent his life as a musician and currently tours the world with the Preservation Hall Jazz Band. As a music student and even now, I have spent many hours learning formally and informally from this participant in several settings. His participation in this study was an extension of this relationship although I was leading the conversation in contrast to our previous interactions. I was able to visit his home in New
Orleans and spend several hours learning music as well as covering my interview schedule so that he was able to participate.

After securing Mr. Gabriel as my first participant, I then spoke with a fellow alumnus of my high school music department, Ali Jackson, who in addition to his agreeing to participate in the study made important connections. As my first participant, I conducted multiple interviews with Ali via Skype where he was able to respond to the entire interview schedule and allow me to follow up to ensure I captured his contribution accurately. Ali recommended a musician with whom he works outside of Jazz at Lincoln Center, Omer Avital, who is an expert guitar and bass player who travels and records music as his primary occupation. I reached out to Mr. Avital and he agreed to participate. I also asked for references of other musicians and he gave me two email addresses, neither of those musicians responded to my requests.

After conducting an interview with Ali, he provided me access to a venue backstage before a concert where I was able to meet and engage several other musicians from Jazz at Lincoln Center. This access was not an uncommon occurrence between us as I had met with him backstage before and after concerts on multiple occasions when the Jazz at Lincoln Center tour came through a nearby city. While Jazz at Lincoln Center was in Newport News for a concert at the Ferguson Center, I visited with Ali and met members of the orchestra. After discussing my study with each member who was willing to speak with me, many agreed to participate, and we were able to schedule interviews. This process helped to procure seven participants: Victor Goins, Marcus Printup, Vincent Gardner, Paul Nedzela, Chris Crenshaw, Todd Stole, and Wynton Marsalis.
Grounded Theory

Within the interpretivist paradigm, I employed the tenets of Constructivist Grounded Theory (Corbin & Strauss, 2008) to generate, collect, and analyze data. The Grounded Theory methodology allows the data collected to guide the study as it takes place the flexibility inherent in this methodology allowed the study to follow the data generated and collected without a pure allegiance to extant theory. Analyzing the data immediately helped the researcher be more attuned to which ideas to pursue and which to exclude during subsequent data generation sessions (Corbin & Strauss, 2008; Wertz et al., 2011). This shaped the path of the study based on the study itself without undue influence.

A distinguishing feature of Grounded Theory is the simultaneous collection and analysis of data that informs the subsequent data collection and generation (Corbin & Strauss, 2008). As such, after each interview was completed, I returned to the data set to modify and update the codes assigned to the previously collected data. I also made slight revisions to the interview schedule to dig deeper into emerging themes while decreasing the focus on topics that appeared to be less rich with opportunity for exploration. One such topic was the actual lessons that a student might focus on during a period of study. Once several participants separately remarked that the types of activities are so numerous and often tailored to individual weaknesses and strengths and declined to name one, I decreased my focus in this area began to question other emerging themes more intently. Because the participants often provided answers to several questions from the initial prompting, I also took particular care of ensuring each topic was covered without asking
every question as time constraints of musicians before and during a concert favored
brevity at every opportunity that would not compromise the integrity of the study.

A second component of grounded theory is the constant comparison of data
throughout the study. Comparisons began with fragments of data and eventually grew to
include the themes that emerged. Throughout this process, there were 522 excerpts
created where 220 codes were applied 1,850 times. These codes were created that was
reduced to 16 emerging themes. These themes were compared against one another,
combined where redundancy existed, ordered, and re-order to create the Grounded
Theory that is explained in Chapter 4.

I kept notes and made memos in research journals throughout this process to
detail the changes made throughout the study. As the study progressed, I often referred to
these documents to remind myself of prior thoughts and to potentially spark new lines of
inquiry. When travel was involved in generating data, I created audio memos during my
transit while written memos were used for all other memo documentation.

**Methodology**

To investigate the creative development process, the researcher conducted
interviews with expert jazz musicians regarding the extent to which they have
systematically developed their creative talent as a jazz improviser, the nature of their
development, as well as the extent to which they believed creativity plays a mediating or
moderating role in the transition from expertise to eminence.

**Procedures**

My initial efforts at generating a sample population were based on brief
encounters with expert jazz musicians backstage after their concerts in addition to a
personal relationship I have with one musician who meets these criteria. That individual
agreed to be interviewed and offered to assist with introducing me to other musicians
who may be willing to participate. After interviewing my contact, I attended several
concerts and obtained contact information for other musicians who agreed to participate.
After meeting the participants, I returned home and emailed them an invitation to
participate in the study and outlined the requirements for participation. None of the
musicians responded to the initial email requests.

Having made little progress, I then reached out using social media and text
message, which provide to be unreliable in garnering participation. I returned to concerts,
this time arriving beforehand when the musicians arrived often for sound check so that
we had time to speak. By arriving in advance of the performance I was able to get a
captive audience with the musicians and begin conducting interviews on site. These
interviews ranged from 30 to 90 minutes in length and took place in dressing rooms and
green rooms in the concert hall. Once musicians began to see the nature of the study as it
was unfolding, they became more willing to participate. It appeared that having been a
band director helped them to view me as someone who cared about their work, rather
than someone in search of commercial gain.

I began to grow the sample by attending concerts where my classmate was
performing to meet some of the musicians in the jazz orchestra with whom he performs.
Once I met them and introduced myself, I began to tell them about my research. This
process proved beneficial in that I was able to secure several phone and video conference
interviews through this process.
There were two musicians who declined my request, as they did not appear to be interested and directed me to speak with other individuals within the orchestra. Although they declined to participate, citing either time or lack of ability to contribute, they seemed agreeable to the topic and saw value in the study. I was able to observe each of these musicians in an authentic talent development setting and generate data from watching them work rather than a traditional interview. This led me to include significant numerous samples of audio and visual data that help to provide deeper insight into the talent development process for this population.

At every venue where I collected data, there were student musicians who would find their way backstage to meet the musicians, ask questions, and soak up whatever knowledge they could. They would often play for the experts and receive brief guidance as to what skills they were most in need of additional work. It was amazing to see the interest musicians had in helping young students and the ease with which they were able to analyze and diagnose student performance. This led me to seek additional opportunities to collect data during these informal sessions.

I was fortunate to learn about a summer music camp for high school students being held by the Jazz at Lincoln Center orchestra in Castleton, Virginia. I contacted my schoolmate who was their percussionist at the time and he invited me to visit with them. The orchestra was in residence for 2 weeks and brought 48 high school students hand selected by audition from all over the country to study with them. The study design did not include proper protocols for student data collection, so I did not approach them to participate although they would have provided a wealth of information. I was, however,
able to spend significant amounts of time with the musicians and conduct follow-up interviews with many musicians who were initial participants.

I was also able to generate data showing the teaching and mentoring process taking place between experts and young. Jazz at Lincoln Center designed the camp to promote the preservation and continuance of the jazz music tradition (http://jalc.org/summer-jazz-academy/) there were several occasions in which the students were engaged in learning sessions with the experts that I was able to observe and take notes regarding. These sessions took place both by structure and schedule within the camp, as well as during free time when musicians were available to provide additional support to students. In addition, I was able to observe and make field notes of how the experts themselves spent their time practicing and preparing for performances. These experiences helped guide the subsequent interviews and data analysis. I masked all students’ faces to preserve privacy while still allowing an additional layer of understanding provided by the images of the process in action.

Each participant participated in initial interviews during which we addressed the interview schedule with additional interviews conducted until data saturation was reached. Each session explored creative talent development related to skill as a jazz improviser leading up to his or her current skill level, how they developed their creative ability, and what role they believe creativity plays in the transition from expertise to eminence. Often, these interviews became conversational as the participants recognized that because I was a musician, I had a deeper level of understanding regarding their work than a casual observer. While the topics sometimes did not relate to the research questions, there were often statements that spoke to their personal development or views
regarding expertise in improvisation. Once I determined these moments to be beneficial to the goals of the study, I allowed the conversations to continue if we had already addressed the entire interview guide. Additional interviews took place as themes and concepts arise that require further data from participants which may have included follow ups to the interview guide, or any other information provided by a participant during our interactions.

In keeping with the Grounded Theory research tradition (Corbin & Strauss, 2008), I analyzed each interview as they were completed, and follow-up interviews were conducted as trends began to emerge in the data that provided additional points of inquiry across participants. Participants were encouraged to play instruments, recordings, or videos that assist in explaining their development as a jazz improviser although none took advantage of this opportunity during the interview sessions. My goal in asking for this type of participation was to gain video data that demonstrated portions of the talent development process. During the study, I discovered that several of the musicians participated in Jazz at Lincoln Center’s video tutorials that provided guidance to students in a manner like that which I sought out during the study. I have collected these videos in an online collection (https://www.facebook.com/thepracticeshed).

The participants agreed to allow me to record them as they worked with students in informal tutoring sessions during many of the field observations that occurred. This data is significant as it provides a window into the talent development process as it takes place. Multimedia analysis allowed me to examine these video recordings of participants alongside the interview transcript that provided additional depth to the analysis and understanding of the data. Capturing and analyzing these data provides an additional
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layer of description and allows the reader to associate sounds with the explanations provided by participants as interpreted by me.

Data Analysis

It is important within a grounded theory study to be sensitive and responsive to the data within the current study rather than seeking to confirm or invalidate a previously existing theory (Corbin & Strauss, 2008). The TDMM framework did guide the initial analysis and provide several lines of inquiry; however, data were not included or removed to force conformity to this or any preexisting framework. This allowed me to focus on the emerging themes within these specific data.

Memos and diagrams. Memos are written records of the results of the analyses conducted during the study. Diagrams are visual representations of the possible relationships between concepts. These tools were used to make comparisons between, and ask questions of, the data; explain the relationships between conditions and responses; and develop the properties and dimensions of concepts and categories within the analysis (Corbin & Strauss, 2008). Memos generated within this study were dated and include headings and verbatim quotes or phrases of raw data and the thoughts, feelings, and ideas of the researcher. Diagrams were dated, titled, and have accompanying notes that provide context for the graphic.

Assumptions. In adopting the pragmatist view that guided Corbin and Strauss (2008), this study accepts the assumption that truth is an understanding based on the collective knowledge of the field. The pragmatist view states that what we currently know is based on the cumulative knowledge of our society, and no one individual creates knowledge within a vacuum (Corbin & Strauss, 2008).
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This study assumes that expertise is the result of practice focused on improving the individual’s talent. The study also assumes that musicians were taught or subject to some form of guidance throughout their development. I also accepted the assumption that improvisation is a deliberate cognitive process where musicians are making split second decisions regarding what to play based on their analysis of chord changes and the song structure.

**Delimitations.** This study will not seek to explain the role of genetics within the development of talent. Based on the assumption that expertise is the result of talent that has been developed, this study assumes that the influence of genetics, while clearly a contributing factor to the innate gifts participants may possess, cannot be analyzed separately from the environment in which a child is reared (Gagne, 2004).

As this study analyzes the common factors of the talent development process that lead to expertise, the data may provide information regarding the impact of genetics on the talent development process. The delineation of the relationship between innate ability and talent development could guide teachers to make appropriate instructional accommodations for students based on their level of natural ability.

I also did not pursue current students who may be studying to develop their talent as improvisers. While there is the potential for a longitudinal study of what activities in which high performing students are engaging and following them to see which students reach expertise could prove informative, that is not the focus of this study. This study focused exclusively on the retrospective accounts of experts to reverse engineer based on trajectories with proven success.
**Limitations.** Interpretivist studies seek to portray individual experiences of participants in relation to a given phenomenon. This portrayal is done through the eyes of the researcher conducting the analysis. The analysis is personal and specific to the participants and in most cases does not generalize to any larger audience. Considering these constraints, the study of development cannot be said to be the same in every domain based on this single study. However, this study will provide an empirically developed framework that can be applied to other domains to determine the extent to which the processes are similar. We will also look at the role of creativity as a mediating variable in the transition from expertise to eminence.

The study is also limited by the participants’ filter of memory. As these will be retrospective accounts of development, the recollection of participants will be based on their interpretation of an event’s significance. It is possible that the benefits of key developmental activities will be overlooked in the participant’s recollection. The researcher will take care to ensure that developmental activities are thoroughly investigated to lessen the potential for oversight. The researcher seeks to counter the limitations of memory by using extant biographies, interviews, and video recordings of individuals within the talent development trajectory.

**Quality**

In designing a research study, one is tasked with ensuring that the results are credible, valid, useful, and resonant (Corbin & Strauss, 2008). This section will discuss the policies and procedures that will be followed and how they respectively attempt to enhance the quality and credibility of this study. The researcher also presents details regarding the effort to ensure accuracy in obtaining the participants' perspectives while
acknowledging the researcher's thoughts, beliefs, and related individual experiences through the Researcher as Instrument statement in the Appendix C.

To ensure accuracy in interpretation of interview data, I provided each participant an opportunity to member check the information gained from their interviews. Member checking allows the participants to review documents to ensure that the researcher has correctly presented the data they provided. I used participant’s actual words to describe concepts, a process called in vivo coding (Corbin & Strauss, 2008). In vivo coding was employed to ensure allegiance to the participants’ words and contributions with as little influence from the researcher as possible.

Participants were able to opt out of being identified within the data, but the validity of the study will partially be judged within the field of jazz improvisation based on the credibility of the musicians included. Written, audio, and video data were made available to increase the richness and complexity of the presentation of the findings (Corbin & Strauss, 2008; Patton, 2002). The multimedia presentation will not supplant the written narrative of the data analysis but will provide a supplement to the written description to better explain the phenomenon under study.

Credibility will also be judged by the extent to which the findings appear plausible, or logical given the data presented by the researcher in comparison with extant knowledge of the subject. One of the objectives of this study is to ascertain a conceptual sequence that can be used by practitioners to inform their instructional activities. The credibility of the findings will rest in part on the utility of the theory that is generated.

The applicability of the theory to different fields of creative talent development will also provide a measure of credibility. Through further study and additional research,
the framework generated during this study will be tested and adjusted according to future findings to increase the potential for successful application. Applicability also implies that that theory must fit well enough with established conventions to garner use by practitioners. The theory generated will be applicable and practical to meet the standard set for credibility in qualitative research. This study explored the talent development process of jazz improvisers to learn more about how nature and nurture both play a role in reaching expertise, and eminence. My goal was to have an objective understanding of what each participant believed was important to the development as a jazz improviser.

Each participant engaged in at least two interview sessions. The first session lasted at least 1 hour with follow up sessions ranging from 30 - 45 minutes. It was noted that many participants felt they had fully explored their thought process in the initial interview and often referred to comments made previously to explain follow up questions. Participants were passionate about the topic as they felt a connection to the process of developing improvisers as they had a goal of ensuring the legacy of jazz music continued.

The process of excerpting included selecting salient portions of participants’ responses that would later be coded and aggregated into emerging themes. Once I created an excerpt, I would add a memo or note to the bit of audio describing the relevance to the study and why I chose that section to excerpt. I also kept a journal that contained my thoughts that were not specific to any participant or data and often included diagrams and charts to help organize my thinking. As they were not a part of the formal analysis, I did not endeavor to create professional versions of these documents. However, since these were integral to my thought process and the development of my ideas, I scanned the
handwritten memos and diagrams to help lend credibility to the findings by providing background regarding my thought process.

Interviews took place through several media: telephone, face-to-face, and Skype. All interviews were recorded via audio and video was also included when possible. These data generation sessions were first coded in their raw format of audio and video. I found benefit from being able to understand the inflections in speech that denoted the importance of various aspects of their responses.

After excerpting each interview's audio and/or data files, I began to assign codes to each excerpt. Many excerpts were included under multiple codes as they had implications for more than one of the emerging themes. Once this analysis was complete, the codes were truncated into overarching headings that joined the smaller, discreet codes into larger categories that became the basis for the theory as presented.

Once the themes and categories were fully formed, I went back to the research questions to help organization of the data to provide responses to the questions. This led to the developmental activities being grouped into Ability, Competence, Expertise, and Eminence and a trajectory of creative ability spanning through mini-C through Pro-C with the introduction of Middle-C as a form of associative creative expression.
Chapter 4: Results

In this study, I explored the developmental trajectory of jazz musicians to better understand the psychosocial skills and dispositions as well as the properties and dimensions of the creative development ingrained within the domain. Through semi-structured interviews and field observations I generated data based on retrospective accounts of expert jazz improvisers’ talent development process in addition to their thoughts and opinions on the skills needed to be successful in the field. These data were analyzed alongside hallmark texts exploring the lives of eminent jazz improvisers to generate the findings within this chapter.

The data generated in this study were examined as they were collected using Dedoose Qualitative and Mixed Methods Software which allowed transcribed text to be analyzed alongside video, photographs, and spreadsheet data within a single platform. These data were analyzed for commonality, similar language, and emerging themes alongside autobiographical texts from the eminent improvisers discussed in Chapters 1 and 2. I grouped written and recorded statements from participants according to their relevance to each other and the common idea or construct to which they related. The same process was followed using the visual media that were collected throughout the study. Each group of data was given a code that best describes the data listed under that category. As the data collection continued, the codes were modified, added, or deleted from the analysis as the data dictated (Corbin & Strauss, 2008).
I used both constant and theoretical comparisons to generate codes when analyzing data. Both types of comparisons were used to create concepts and to determine the properties and dimensions of the concepts created (Corbin & Strauss, 2008). Constant comparison involves looking for similarities and differences within the raw data and grouping them together under a higher-level concept. I used theoretical comparisons to examine the data at a conceptual level in addition to the raw data that is analyzed during the constant comparison (Corbin & Strauss, 2008).

A Researcher as Instrument statement (Patton, 2002; Appendix C) was created to provide information regarding my individual experiences as a musician, music teacher, and school leader. The Researcher as Instrument statement is geared toward increasing the validity of the study by allowing the reader to understand the researcher’s experiences and potential biases so that readers can judge the extent to which those biases influenced the results. The researcher conducting this study will cite the relevant experience that informs judgments based on his personal experience.

I transcribed interviews soon after they were conducted and often listened to the previous interviews before meeting with the next participant to ensure the most recent data was fresh in my mind. I also analyzed recorded interviews in audio and visual form in addition to coding images collected that illustrated the same excerpting and coding process that was employed for the transcripts. I also used this same process for video and static images that were collected during this study. This allowed me to make decisions regarding which method of presentation would be most influential for the results of the study.
GIANT STEPS: CREATIVE TALENT IN JAZZ IMPROVISATION

Giant Steps

The dimensions of jazz improvisers’ developmental trajectory included: “heard this sound” (Exposure to Jazz), “going to the woodshed: (Competence) “saying what you want” (Expertise), and “having something to say” (Eminence). The dimensions of their trajectory included Transcribing, Harmonic Knowledge, Knowing Your Horn, Studying the Greats and Going to the Woodshed. Psychosocial dispositions revealed in the data included: Getting Your Head Chopped Off (Resilience), A Desire to Learn More (Motivation), A Desire to Solve Complex challenges and Listening to Yourself (Self-Critical). There were also data gathered about the properties and dimensions of creative talent development that is provided here.

Heard This Sound

As the start of each interview, the participants described their first experiences in learning to play jazz. They often discussed being introduced to jazz music by an adult musician who was either a family member or a teacher. They each mentioned that they had already begun to play an instrument prior to this experience so this was not the initial engagement with music, but it was a pivotal experience as it was the participants’ first exposure to jazz music and it had a lasting effect on them. While many of the participants began to study jazz immediately after this experience, there were several who did not begin to study seriously until years later. This is a point of future inquiry in that participants entered the trajectory at various points, but all reached elevated levels of performance. It is possible that they were engaged in other domains that developed skills which transferred to the task of jazz improvisation. It is also plausible that they possessed a natural ability that was dormant until they decided to study seriously.
“Everything came natural, I made all state, I didn’t make all state jazz, I made all state classical. I never practiced. To be honest, I could probably count on one hand the number of times I practiced, from fifth grade up through my college days on one hand. Things came naturally to me” – Printup

“The first stages were unclear, but at some point, I began learning this song and this song.” - Avital

“I always improvised a little bit” - Avital

“It was obvious to me, this is it, this is the sound, the art form.” - Avital

“I was lucky enough to play with the older musicians” - Gabriel

“I had more natural ability than a lot of kids in the class, I practiced everyday pretty much, but I just practiced, I didn’t think I was going to be a musician” [P7]

There was remarkable commonality of the narrative regarding being attracted to the sound of jazz from the first time they heard the music. Public schools rarely have selection programs that seek to identify talent as a jazz improviser. With a lack of systematic identification, it makes sense that all participants referenced a chance encounter of hearing a recording or someone playing jazz and being drawn to the sound of the music. There were several participants who were surrounded by music from birth and naturally gravitated toward playing. Others were exposed to jazz by their school band director or some other adult outside the home and either began to study immediately or reserved the curiosity generated to pursue at some time in the future. Regardless of the method of exposure, all participants recalled their exposure to jazz as an indelible experience where they were attracted to a peculiar musical performance. “Love is what comes first” [P2]”
Participants often recalled the exact instance when they first heard jazz music and were able to discuss how this moment was influential to their pursuit of further study within the domain. Among the participants in the study, it was noted that 80% were attracted to jazz music from a chance encounters in a setting outside the home. For the 20% of participants who had musicians in the home, they were introduced to jazz through everyday exposure in a manner no different than any other encounter in which a child may learn about an unfamiliar activity. If there were no musicians in the home, and they were not deliberately exposed in school, they spoke about how they heard someone playing an instrument or a recording of jazz music that drew them in. This exposure sparked an interest that endured even if the musician did not immediately begin to study jazz music.

This theme also speaks to access to a domain. If not for the chance circumstances surrounding these musicians being in the company of an expert musician or a teacher familiar with jazz, there is no guarantee they would have pursued this field of study. It is also notable that even a small encounter had a lasting effect on the participants. It is helpful if the opportunity is presented and available over an extended period as many participants waited years before they engaged in deliberate practice. Once this connection to the music was made, the student decided to study jazz music seriously and a connection to a mentor within the domain was established.

I think I had a talent

I think I had a talent because I had a friend and we had a band, and when I play with other kids I could tell when someone was singing out of tune and I criticized
that kid…that was the first experience where I knew what it should sound like and this kid was messing up our thing - Avital

“There are some people who it might come a little easier to, and they can certain excel, and if those people work hard also, they tend to be the great ones” [P7]

Many musicians were unaware if they demonstrated above average ability early on in their studies. They rarely participated in formal identification of any sort until they had reached a level of performance that was recognized in a widespread regional or statewide talent context. This prevents us from understanding to what extent these individuals would have been identified as gifted. The statement “I think I did, but I was also told later that I did” [P1] combines this notion of having above average ability with a lack of confidence which could be partially due to the lack of formal process to validate their gifts. “A lot of them were naturally more gifted, but they had also worked harder than me for so many years doing all this stuff…there were certainly players who had a lot more natural ability than I did”

Musicians also made subjective comments about their level of natural ability in comparison with their peers. Statements such as “A lot of them were just naturally more gifted” [P7] “There were certainly players with more natural ability” [P5]

Mentors and Teachers

In contrast to the mutual search Zuckerman (1977) discusses, there was not an alliance with a single expert or eminent individual in the field. Rather, participants learned from an organic network of musicians that were in some proximity to them. They may have had a primary private teacher, or musician with whom they spent a considerable amount of time studying, but there was no evidence of a dedication to a
single approach to improvisation. As discussed in other sections of this chapter, the individual nature of improvisation causes one to seek multiple perspectives and vantage points upon which they based their own individual approach to improvising. While attending concerts, workshops, and masterclasses, they would meet and engage with the professional musicians in attendance and take bits of knowledge that they would add to their musical knowledge base. All these experiences guided their journey through the competence dimension of development.

“My middle school band director and one day he actually pulled out to saxophone after. Well even before I was in the van with my sister's four years older and she was in the jazz band. She plays the clarinet and tenor and he would play with her jazz band. And I remember hearing him for the first time when I guess I was about maybe like, you know, 10 was 14, 15 years old and that is the first time I heard anyone improvise as just here again. So, um, when I was in sixth grade, he was my band director and I was really looking forward to hearing him do that again.” [P6]

Going to the Woodshed

Once the musician decides to study jazz seriously, they began to seek further knowledge and experiences within the domain in what is referred to as the competence stage of development (Subotnik et al., 2011). This is a stage in which the student begins to engage in deliberate practice and intentionally seeks out learning experiences that add to their knowledge and skills. During this period, participants referenced engaging within the domain both in and out of school settings and began to form peer groups with other students who were also pursuing serious study of jazz with whom they would practice and discuss their progress. This process, remarkably similar to the Competence
dimension of the TDMM, is often referred to as “Shedding,” “Going to the Woodshed,” or having to “Shed on” a composition or skill.

While there was some variation in the emphasis placed on each of them throughout their development, each participant discussed several common skills that participants as a part of their development. These skills were analyzed and data as: Knowing your horn, Harmonic Knowledge, Rhythmic Accuracy, Saying What You Want, and Having something to say. These titles were taken in vivo from the transcript of the interviews conducted during the study and represent musical areas of study that are characterized. Each of them represents several areas of musical study that were referenced and are applicable to any jazz musician regardless of instrument. There are milestones and markers that demonstrate progress, although they are discussed as an internal realization of an increased performance capacity rather than as an externally recognized performance.

During the competence stage the musicians begin to develop the respective skills of improvisation. The overarching idea is that musicians should begin practicing as a professional as soon as possible. While the expectations for performance are scaffolded to match the current performance level of the student, they begin learning the full scope of being a jazz musician early on. They also referenced coming under the tutelage of professionals and masters within the domain as well as finding a cohort of musicians with whom they associate throughout their development. Most musicians had one or more peers with whom they could discuss what they have learned with whom they could trade information.
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It was noted that a participant referenced being intrigued by students who come from areas that are not rich with jazz culture. His view was that these students have an intense interest because they must work harder than a student who comes from a place like New York City where jazz music is readily available.

Struggle with It

The idea of challenging yourself while shedding is fundamental to continuous improvement. To that end, the concept of “struggle” was common among the participants. There was a belief that to improve, you must be working on things that you cannot do. When speaking to a group of students, one participant gave the advice “I want you to struggle with it” as guidance to dig deep into the content in search of whatever knowledge could be gleaned from the text in reference.

There is conversation within the literature regarding how setbacks can be common occurrences within the developmental trajectory of eminent individuals. They often discuss challenges within the field, or challenges in the familiar environment as catalysts that focused the pre-eminent individual to dig deeper within their domain. We understand that gifted students require to be challenged to remain engaged, which is also a required component of Flow (Csikszentmihalyi, 1996). There must be an adequate challenge and the participant must be able to address the challenge to be successful.

To struggle requires that the musician has access to increasingly challenging lessons and exercises. There is the potential that a student may derail from the process because they are unable to find suitable challenges to continue their engagement or the challenges are far beyond their current level of ability. This is similar the balance of challenges and skills described in the Flow framework (Csikszentmihalyi, 1996) in that
the student must have an appropriately designed learning experience to ensure continued engagement. This is where the guidance of expert teachers and mentors is critical. As outlined in the previous sections on mentors and teachers, having an expert within the field who understands the student’s capabilities and limitations is the most effective solution to continuing as student’s engage to within the field. While many participants reported that they began studying privately in middle and high school, others did not study privately until they reached college. While some musicians can determine for themselves what to tackle next, many need guidance to choose the next challenge, or navigate the complexities of the challenge once decided upon.

The idea of struggle is not specific to improvisation alone. Each facet of performance has its own challenges that a musician must use their psychosocial skills to traverse as each will present challenges to be overcome. Ranging from the technical aspects of playing your instrument, to gaining a deeper understanding harmony or learning new compositions, there are several areas where a developing musician can find adequate struggle.

**Know Your Horn**

"To learn any music, you must first master the instrument." [P7]. This theme speaks to a musicians’ ability to handle the nuances associated with their respective instrument. This includes but is not limited to being able to execute scales in all keys and modes, have command of the range of the instrument, and any of the challenges that accompany the instrument. Examples include piano players being able to play with both hands and navigating difficult finger patterns, a drummer using both hands and feet to play different rhythms simultaneously, a trumpet player doing lip trills or playing large
intervals with relative ease, or a saxophone player gaining control of the extended upper and lower registers of their instrument. Each instrument has its own challenges that any musician hoping to master would have familiarized themselves with: executing difficult passages or fingerings with ease, maintaining a solid and consistent sound and tone throughout the entire range of the instrument. An expert improviser is expected to have mastered the various components as this is necessary for highest levels of improvisation.

When musicians begin to improvise, they enter a Flow state in which they must have a match between the challenge and their skills (Csikszentmihalyi, 1996). This is essential because musicians are creating melodies based on the music they have studied and aging some familiarity. Musician refer to this as having something “under your fingers” meaning that you have mastery of that skill or are familiar with a composition. To effectively perform the melodies they think of, a musician may not be limited in their ability to execute those ideas. Therefore, participants refer to this as being able to “Say What You Want” as you must have the ability to execute the novel ideas that you create.

There was a belief during my development that musicians must study classical music before beginning to study jazz. It was a requirement to be in the highest classical performing ensemble before you could join the jazz band. It is not classical music that is fundamental, but the study and understanding of the technical aspects of playing the instrument that are essential which are often included in the study of classical music. In the same way that classical music is informative to the study of jazz, this study seeks to be informative to the literature on talent development by leveraging an existing practice in one area to benefit another. Classical music is but one viable tool for gaining such mastery. Some participants reported knowing several expert improvisers who did not
study classical music deeply who reached expertise, but all expert improvisers have
mastery of the technical aspects of performing on their instrument. Exemplary quotes
describing this concept follow:

“There’s like a whole series of fundamentals which you can always hear the
difference with a student who hasn’t really mastered the instrument that they play on…”
– [P7]

“I know for a fact that a lot of people who were great improvisers were not
classically trained” [P10]

“I think it helps wholeheartedly with reading, with technique, and with execution,
especially execution” [P3]

“It basically boils down to being able to execute the phrases and being able to
execute the lines when you’re called upon to do it” [P3]

“At first we are doing all of these etude books and classical literature and that
helps you to play the horn and have a facility and that helps you to have choices in the
things that you play and the style that you play” [P3]

“I knew there were other things that were clear weaknesses for me once I started
trying to improvise.” [P7]

Transcribing and Repertoire

If we follow the idea of learning a language as an analogy for the process by
which musicians learn, transcribing prominent improviser’s solos represents a child
imitating a parent’s speech. Frequently, musicians referred to transcribing as the way
children imitate their parents in learning a language. In an interesting narrative, one
participant used the way his daughter imitates his wife as an illustrative example:
My daughter will not talk like my wife. No matter how much she tries, she might imitate her, but she will not talk exactly like her. Her voice is different, her vocal chords are a different length, their different, they are hers. But by trying to imitate her, that is how you get your own voice that is how you develop your own voice. It’s the same thing with playing by trying to imitate somebody and imitate them as closely as you can, that’s how you develop your own voice. [P5]

We know that babies learn to speak by imitating the sounds they hear form adults and jazz improvisers have a similar component to their development. Their ability to imitate is honed through their learning solos prescribed within their trajectory and being able them. The process of transcribing is designed to help students understand how experts approach the task of improvising as well as giving them clues as to how they may approach their own improvisation. I find little in existing talent development models that speaks to the utility of transcribing creative endeavors as a facet of talent development in domains other than arts, chess, and athletics. Often scientists will replicate an experiment to validate the results, or a chess player may study the moves of a Grandmaster’s game, but there is little evidence of systematic implementation in education today. Incorporating transcribing creative products into talent development trajectories could be beneficial to creative development in other fields (Stambaugh, 2018).

Jazz improvisers not only transcribe the solos of expert musicians, but also study their approach to improvisation and the extent to which it changed throughout their career. This helps them to understand why the person they are studying made certain stylistic choices in their improvisation which informed their own playing. To gain insight into a musician’s mindset, environment, and those in their zone of influence helps the
students to understand the context surrounding the performance as well as their overall creative process.

In this next instance, imitation refers to transcribing solos of expert and eminent improvisers. “Learning jazz music comes through imitation. So, when you’re first learning to play, you have to take the masters and you have to imitate them and there is no shame in that.” [P5]

The literature of language acquisition mirrors this idea in that who you listen to will influence how you speak. This same participant also remarked:

No one has been Coltrane yet, people been trying for 50 years. But there have been some bad cats who came through in trying to get like him learned a lot of facility and the really baddest cats understood his spirituality and realized what not to play, and what to play in getting like him. [P5]

There was a unified view of the value in listening to and copying the performances of improvisers who interested them. There was a persistent narrative regarding the need to understand and emulate prior improvisers. The participants often reference the need to sound as if you have studied and understood the great musicians, but also have created your own unique voice with which you improvise. There are many musicians who reach a level of expert in that they have studied the greats, but they themselves are not considered among the best because they "have nothing to say."

Transcribing has multiple direct and indirect benefits to the developing musician. Directly, it allows them to gain a deeper understanding of the musician they are studying and helps them to learn how that musician approaches improvisation. This helps to ensure they are using the vocabulary of jazz and their improvisation is built upon the great jazz
musicians who have come before them. “There is a certain language of jazz, and when you hear someone play you can tell that they have checked out certain people or not” [P7].

Closely related to transcribing, learning the repertoire is a pillar of the developmental process. Each musician must learn compositions from the standard repertoire of jazz musicians, as well as those seminal works of musicians who played their instrument. Every musician will learn to play the blues and standard compositions like “I Got Rhythm” and “How High the Moon.” In addition, many trumpet players learn Miles Davis’ solo to “So What” as saxophone players learn Charlie Parker’s “Donna Lee.” Knowing how these and other eminent jazz musicians approached improvisation is essential to identifying as a jazz improver in comparison with other genres. It is expected that any professional musician is familiar with their style and approach to improvisation and can demonstrate this through their improvisation.

**Harmonic knowledge.** Listening is often the way many musicians were exposed to jazz music. When listening to music, expert musicians can recognize the underlying chord structure without the use of a piano or other instrument. This is essential to improvising, in that some performances will not have written sheet music and the expert musician is expected to be able to hear the changes and improvise without any written or verbal guidance.

Developing harmonic knowledge was an explicit area of focus for the participants. This begins with learning the repertoire and the chord changes associated with the standards. Playing a blues progression, Miles Davis’ So What, or the chord changes to “I Got Rhythm” are some examples of the compositions with simple chord
changes a student may learn. The chord changes to this song have been replicated in several compositions which gives the student with a considerable advantage if they have the song as a part of their skill-set. Referred to as playing “Rhythm Changes,” this is one of the primary building blocks for developing expertise as an improviser.

There are also smaller chord patterns within compositions with which students must familiarize themselves such as the chord progression referred to as a “two-five.” This refers to chords based on the second and fifth notes of the major scale. This pattern is frequently used in jazz compositions. These isolated fundamental sub-skills of improvisation are each honed and refined, there could be similar sub-skills of creative tasks in other fields that could be identified and explore.

This is also where the jazz musician appears to engage as both a composer and performer. To improvise on a composition, they seek first to understand the harmonic construction of the composition. In classical music, a composer would focus more on compositional techniques where the performer would focus on technical execution and the interpretation of the piece; the jazz musician must do both. Once jazz improvisers understand the harmony of a piece, they must then address how they can improvise using the chord structure presented.

As harmonic knowledge develops, the musician will learn increasingly challenging chord progressions and gain an understanding of how to approach them on their horn. One of the more challenging chord progressions is Giant Steps, a composition by John Coltrane after which this study is named. It is a rite of passages as a jazz musician to be able to improvise over the changes to Giant Steps as Coltrane composed it as a challenge to himself and the musicians of his era (DeVito & Coltrane, 2010). The
unique harmonic progression combined with the rapid tempo have positioned this composition as milestone in the development of advanced improvisation

**Authentic Experience**

“You want to be a musician? Get out and play gigs. Remember the simple equation: What you do is what you will do. So, if you play, you will play. If you bullshit, well, that too will speak for itself, right?” [P2]

Throughout this study, significant attention was paid to how as young improvisers began to interact with and perform as professional musicians early on. All participants in the study referenced performing music as a professional as soon as they had reached a level of skill that allowed them to play even a background role in a larger performance. Often, their first performances did not include them playing any solos or being placed in high pressure situations, but they were placed in a professional setting and expected to look, act, and carry themselves as a professional musician. It was apparent that these musicians were outside their comfort zone and challenged by being placed into such a situation, but these experiences increased their desire to learn more so that they were better prepared the next time this opportunity arose.

It is during professional practice that the implicit knowledge of the field is gained. While in the professional setting, it is common that elder musicians provide brief bits of knowledge as they are encountered within in an authentic fashion. Participants provided statements like “we are going to play this lick behind his solo,” “The drummer always takes the last solo before we come back in” and “be sure to stand up when you solo.” Musicians also learn how to stand when another musician is soloing, how to compliment...
a solo through riffs and backgrounds, and communicating during a performance in a meaningful way.

This study took a slightly different approach than the TDMM in that we did not seek to determine the generalizability of creativity to other domains (Subotnik et al., 2011). Those with agile minds that are often noted for their creative ability will be successful in any system to which they have access and opportunity (Subotnik et al., 2011).

Creativity

Creativity was an intentional point of focus during each dimension of the trajectory with increasing levels of difficulty. Early on, the students are encouraged to begin to experiment with improvisation in a skill-level appropriate manner that often includes using prescribed notes, such as the blues scale, that is forgiving in its harmonic application allowing them to gain experience improvising in a live setting. These improvisations could be considered on par with little-c creativity in that they are only meaningful to the student playing them. This stage is titled Playing the Blues because this level of improvisation is often based on learning blues chord progressions and blues scale-based solos and of the propensity for trial and error inherent when experimenting in a domain at this skill level.

The next step of creative study is Learning the Standards, which involves learning the common repertoire of jazz compositions. Participants named compositions such as So What and All Blues by Miles Davis, “Rhythm Changes” (Gershwin’s I’ve Got Rhythm from Porgy and Bess) Duke Ellington’s In a Mellow Tone, Take the “A” Train among them. A comprehensive list of compositions participants mentioned is listed in the
appendix. During this period, the student is exposed to the language of jazz and they begin learning the language to include notable licks, phrases, and techniques associated with jazz improvising.

Studying prior musicians is not to imitate their playing exactly although it is often a mark of accomplishment to be able to perform expert solos with accuracy. The goal of studying the solos prior musicians is to inform the perspective from which you improvise. By understanding how experts accomplished this creative task, students can jazz improvisers learn how eminent musicians approach the compositions they are learning to help them understand how they will improvise. The goal is to take from a wide variety of musicians and use them as source material to develop your own approach to improvising.

While Learning the Standards, students also begin to study the musicians themselves both by transcribing their performances and studying their life and its impact on their creative process. Often, transcribing is used to help a student learn the standards although there are also published volumes of professionally transcribed solos available. One participant mentioned that whether you write your own transcription or use a published version, the goal is to learn the piece deeply and gain an understanding of both what it takes to improvise as well as the performers’ approach to improvisation. Conventional wisdom would say that deeper learning would take place when transcribing the work, yourself as the process of learning is to immerse yourself in the musician you are studying. This is another area where the actual process of learning to improvise mimics that of learning a language in that both are done by imitation.

When musicians begin to improvise, they enter a Flow state in which they must have a match between the challenge and their skills (Csikszentmihalyi, 1996). This is
essential because musicians are creating melodies based on the music they have studied and aging some familiarity. Musicians refer to this as having something “under your fingers” meaning that you have mastery of that skill or are familiar with a composition. To effectively perform the melodies, they create; they must be able to execute ideas fluently on their instrument in a live setting. Therefore, participants refer to this as being able to “Say What You Want” as you must have the ability to execute the novel ideas that you create.

There was a belief during my development that musicians must study classical music before beginning to study jazz. It was a requirement to be in the highest classical performing ensemble before you could join the jazz band. In actuality, it is not classical music that is fundamental, but the study and understanding of the technical aspects of playing the instrument that are essential which are often included in the study of classical music. In the same way that classical music is informative to the study of jazz, this study seeks to be informative to the literature on talent development by leveraging an existing practice in one area to benefit another. Classical music is but one viable tool for gaining such mastery. Some participants reported knowing several expert improvisers who did not study classical music deeply who reached expertise, but all expert improvisers have mastery of the technical aspects of performing on their instrument.

**Soloing.** The most well-known type of improvisation in jazz is referred to as “soloing” which describes the musician as creating melodies according to the structure of the piece spontaneously. The origins of soloing are a piece what give Louis Armstrong his place as a Big - C eminent musician. Louis Armstrong was known for playing brief improvised passages during brief moments of silence during a composition called
“breaks.” These breaks would be one to two-measures long and have some relation to other parts of the song if not copied directly from it. Over time, these breaks gradually expanded to become extended solos that were created by musicians that cover the entire form of the composition often lasting dozens of measures. These solos are now a fundamental facet of improvisation that allows each musician to contribute their creative output to the overall performance. These solos are the focus of the creativity being explored throughout this study.

There are several musical patterns and phrases that participants discussed in terms of vocabulary. One participant remarked that you must “first learn to speak the language of jazz music.” We listened to a young musician play after one of their concerts and another participant remarked "he has a good sound, now he just needs some vocabulary” - Crenshaw. As with spoken language, there is a focus on having an extensive working vocabulary with which to express yourself. The musical vocabulary consists of scales, patterns, licks, and melodies that the musician has become familiar enough with to integrate into a spontaneous improvisation. This is like learning words to begin to formulate sentences. Developing vocabulary begins as students learn scales and arpeggios early on in their study as these are the building blocks of harmony.

Having fluency of these components provides a foundation for learning more complex improvisational tools the same way learning words helps a child to form sentences. Once the students are familiar with the basic major scales and arpeggios, they will begin to learn about minor scales and various harmonic modes that are based on the major and minor scales. Learning how these scales intertwine and are harmonically related provides the basis that allows a musician to improvise at length. Having great
number of these scales and patterns at a musician’s disposal combined with the ability to assemble them into endless combinations as melodic lines is akin to having memorized many words and then constructing eloquent sentences that meaningfully contribute to the topic of conversation which in this analogy represents the chord changes of the composition.

Imitation is also a fundamental part of creative development that begins with copying simple solos that allow a student to hear and understand how to create melodies across a composition. This will gradually increase to learning and studying more complex solos as they improve. While learning these works of the expert, students begin to add to and embellish the solos they are learning. This is the foundation for the musicians developing their own style of improvisation or voice.

Imitation does not lead them to perform verbatim another musician’s improvisation in a performance setting. They do so to learn how that musician applied the scales they knew to the chord changes so that they can use the same approach as they improvise. It is unlikely that a musician will play a transcription in a performance setting, but their improvisation will reflect an understanding of the way jazz musicians improvise.

**In search of their sound.** While there are many comparisons to learning a language within this exploration of jazz improvisation, the musicians’ personality while improvising is an area where musicians dedicate time more deliberately than those involved in natural language acquisition. Most humans do not dedicate considerable effort to their voice being used to invoke feelings or emotions as we have words to serve this purpose. Although, there are voice inflections that correlate with certain emotions,
this is not as far reaching an analogy imitation which is thought to be a universal stage in developing language skills.

Musicians choose every aspect of their brand of instrument and equipment based on the sound they desire when they play. From the mouthpiece, reed, drum sticks, and every variable aspect of the instrument, many musicians can tell you the exact specifications to which they have had this instrument custom made. This included the choice between brass, silver, lacquer or other materials from which instruments can be manufactured. While the choice of equipment represents a fundamental yet critical component of one has overall Sound, for jazz improvisers, they choices they make when improvising is also an important characteristic.

Participants also described developing your sound as a function of your personal choices of which musicians to study during deliberate practice. As you listen to musicians and eventually transcribe their solos as discussed earlier, the musician begins to incorporate some of their playing into your sound and style. One musician described how musicians listen for elements of having studied those great musicians to ensure that an improviser has truly put in the time required to be an expert.

Once a musician has developed the ability to improvise over compositions both familiar and unfamiliar, the substance of their improvisation becomes the focal point of their study. Participants referred to this as being able to say what you want to say. This is where musicians begin to communicate through playing. It is the equivalent of storytelling or attempting to convey a thought, feeling, or emotion using language.

Many students will have learned tunes and practiced improvising over their chord changes and may even have some pre-determined licks or patterns that they can rely on to
navigate their solo. While this shows skill as an improviser, it does not yet demonstrate expertise. No more than tracing a picture is drawing; playing an expert solo verbatim is not true improvisation. This process is an important part of practice and development but is rarely demonstrated in the public sphere. Students will continue to refine their improvisation until they are able to develop their own voice within their improvisation.

**Saying what you want.** After a period of significant engagement within the domain accompanied by many hours of deliberate practice the musician reaches a place of mastery. Expertise is a state of being not characterized by any one accomplishment; it is the ability to perform at an important level within any facet of the domain when called upon. It is the result of mastery of the skills associated with being a jazz improviser. It is not until a musician has continuous demonstrated the ability to perform in a variety of settings that they are considered an expert. This distinction is bestowed by the field by the performances and opportunities afforded a musician. This was an underlying thought behind the criteria for participation of performing in highly selective venues.

Being an expert improviser involves being able to play spontaneously created meaningful melodies that conform to the norms the harmony and are which cannot be accomplished if a musician is not able to play their instrument with fluency. An expert jazz musician should be able to play whatever ideas come to mind and this flow of the process cannot be hindered by constraints within the technical capacity of the musician. As the musician is creating melodies, she or he is pulling from prior knowledge and experience gained throughout their studies. This flexibility almost ensures an adequate challenge as it is unlikely a musician will choose a melody with which they have not encountered in some variation during their practice.
Whatever the melody they decide to play, expertise requires that they have the technical facility to execute that idea. In this sense, jazz improvisation is less spontaneous playing of any random idea, and more like the unplanned creation of a melody based on prior knowledge, like an adult speaking to further that analogy. If a musician cannot execute the ideas that come to mind, or if they are not able to create melodies that fit the form and style of the piece, they will not be considered a master improver. Likewise, if the musician is focused on the technical aspects of playing the instrument, they are not able to dedicate their mental energy to creating which will prevent them from pursuing higher levels of creativity.

There are several dimensions of expertise regarding improvising. I posit that an expert has some degree of mastery of each of the dimensions. They must be able to play within the full range of the instrument, execute challenging passages with fluency, and be able to play fast or slow with accuracy and meaning, play the blues, address difficult chord changes, and so forth. There are also dimensions of performance respective to each instrument that are expected to be within the master improviser. Trumpet players must be able to implement effects to include growling, vibrato, lip trills, and using various mutes effectively. While these are not required in every performance and might not be implemented by some musicians within their improvisation; to be considered an expert means to have the ability to employ these devices at will and with considerable fluency.

This leads to a distinction between notoriety or popularity and expertise. Some notable musicians would not be considered experts by this definition as they may have achieved mastery of one or more of the dimensions of performance, but not all of them. These musicians have a role in the field of jazz as a kind of specialist. An example of this
is the lead trumpet player in a big band jazz ensemble. The lead trumpet player is expected to be able to improvise to a certain degree but is primarily expected to lead the overall sound of the band and be able to play in the extreme upper register of the trumpet. This musician will have mastery of the range of the instrument and several of the skills necessary for ensemble performance, but they are not always able to improvise with the fluency of a soloist and are not expected to do so. These could also be referred to as experts of an aspect of the field.

Eminence exists within the highest levels of highly functioning individuals. Eminent individuals have a considerable degree of mastery of every aspect of their playing. That is a part of what sets them apart among experts. While some focus in a narrow domain, eminent demonstrate mastery across the spectrum of performance. It should be noted that as the field moves forward, the spectrum of performance widens. A trumpet player today would need to learn much more about extended harmonies and the extreme ranges of the instrument than Louis Armstrong did because of the contributions that have been made to the field as time passed and the requirement for improvisers to study those who have come before them. Where Armstrong created his improvisation out of whole cloth as there were no eminent improvisers before him, today’s musician would need to be familiar with Armstrong and all their contributors to the field to be an expert. This is important in that as we discuss prior eminent individuals, they may not have master of the entirety of the current day performance spectrum.

An expert improviser can perform on demand with mastery within a large variety of settings and styles. The expert has engaged within a vast majority of the performance spectrum and reached mastery in most all of them. While there was no reference to the
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quantity of dimensions of performance or a requisite number of dimensions needing to be mastered, it was clear that you are expected to play whatever is requested, whenever it is requested.

What the participant is describing is the conscious thought around ensuring that his improvisation was aligned with the chord structure of the song. His view was that early on, he had to be deliberate about making sure he was playing the right thing at the right time. After he reached a level of expertise, his ability evolved: “Now I don’t think about chords, I hear the sound of the solo, and the line I’m gone play and then I might think of a direction I’m trying to go in, or a mood I’m trying to convey” (P5).

**Having Something to Say**

Having a voice means that the musician has studied and developed a unique approach to how they improvise. This level of skills requires that a student already have a firm grasp on being able to fundamentally improvise including having a significant vocabulary. Once they can improvise fluently, they will allow Flow to guide them through their improvisation in a way that helps them to develop a style of improvisation that addresses the constraints of the domain but is individually recognizable.

Eventually, this style becomes a personally identifiable style of improvising that is associated with eminence. Other experts begin to know and recognize the musician without any overt signs of who is improvising other than their approach to the music. In many settings, musicians can listen to a recording and dissect who is playing by how they approach the performance of the piece. There were several occasions during data collection where music began to play and those in the room spontaneously identified who was playing and discussed the characteristics of the performance that led them to know
who it was. This was like a game as they laughed and discussed what they were hearing, but the game requires a high level of expertise and deliberate practice to participate.

Creativity was discussed in very personal terms by participants. Participants often refer to musicians playing by the characteristics of his or her playing that are unique to that individual. The ability to be distinguished by your improvisation is a character trait of an expert improviser. To be an expert improviser, you must have sufficient mastery of the technical aspects of playing the instrument, knowledge of the common vocabulary of jazz, and the ability to flexibly apply the technique and knowledge in a way that is unique and appealing to the audience. To be an expert improviser was summed up thusly:

“You must be able to say what you want to say and have something to say.” [p2]

“I think there’s some stuff in here that’s me.” [p5]

“When you stop thinking about chords and just hear lines. At least for me. When you started to just hear ideas. Instead of, I can remember the first couple of solos I ever took. I can remember the tune and I can remember what I was thinking about. I remember having to think about d minor, G7, this goes I can remember telling myself d minor before I play a note and thinking chord, chord, chord.” [p5]

Eminence

Among the field of experts, few individuals will make a Big C creative achievement that changes a field or has a lasting contribution to the domain. In the world of jazz improvisers, this refers to individuals whose improvisation reflects wide-ranging mastery while also having a personally identifiable style and substance. It is not enough to simply be virtuosic within the technical aspects of playing; the musician must also

Have Something to Say. This means that in addition to meeting the technical and
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harmonic requirements of performance, their playing must communicate a meaning beyond the notes themselves while also being distinctive and recognizable to that individual musician.

This title is bestowed by the field upon a small number of musicians who transcend time, genre, and instrument. While a saxophonist may study the playing of several experts who played their instrument, all musicians will learn deeply form studying Charlie Parker and John Coltrane as their eminent contributions transcend the instrument they played. The difference between expert and eminent performer is based in the creative output of the musician along with the field’s receptiveness to their contributions. Eminent individuals spend a lifetime listening and learning from those who came before them and those around them and began to contribute something unique. While Johnny Hodges was clearly an expert who led the saxophone section of Duke Ellington for many years, the field does not credit him as having changed the way jazz improvisers approach the music. Conversely, Charlie Parker began using augmented and diminished harmonies in a way that had not been done before and did so in a way that resonated with the field at large.

There is also the judgment of the field that weighs into who is truly considered eminent. There is little debate regarding the merits of a musician like Charlie Parker or John Coltrane. Wynton Marsalis can be viewed in a similar light. The field finds consensus among those who achieve this level of performance.

Having album sales that hold records for the nearly 50 years such as Miles Davis’ Kind of Blue or receiving Grammy Awards in multiple genres as did Wynton Marsalis or having several compositions that are viewed as essential for understanding the language
of jazz as did Duke Ellington, are all dimensions of eminence, but none of these alone gains the respect of the field as they can also be achieved by popular musicians who do not have expert level talent. While only one participant could be considered eminent at the time of this writing, the idea that the remaining participants comprise a field of experts who could transition to eminence is an exciting possibility.

**Dispositions**

In this study, dispositions refer to the psychosocial characteristics of jazz improvisers as found throughout their development. In many cases these dispositions are vital catalysts that propel a student through the challenges found within the dimensions of the trajectory. Psychosocial dispositions have been thought to be innate, but these results speak to the idea that many of them are malleable. The view of these skills being innate has stunted efforts at developing social and emotional skills and abilities. The most prevalent characteristics discussed by participants are included below.

**Intrinsic motivation.** The most common feeling displayed after being exposed to jazz music could be described as the discovery of a desire to know more. This developed into the musician's purpose. They began to pursue higher levels of achievement driven by an internal desire to deepen their knowledge or skill level. They referenced musical activities and how they progressed from one skill to the next in search of deeper knowledge about the music. This construct was paired with a resilience to endure difficult challenges and embarrassing moments in improvising performance.

**Resilience.** There are several instances where the participants reference a negative experience or undesired outcome that took place during their development. It was common among participants that even the negative experiences were motivational. These
experiences were often on performance-based tasks. Often, live performance settings present opportunities where the musician attempts to play a challenging solo that fails to meet performance standards and are duly ridiculed as a result (Marsalis, 2003). There are also experiences that refer to a musician being out-played by another musician at a jam session or at a gig. Successful improvisers can view these experiences as instructional and find ways to move forward using that experience as a catalyst. While this study did not look at individuals who engaged in a developmental process but did not persist, it is plausible this skill was a significant contributing factor to their derailment.

**Self-critical.** As discussed earlier in this chapter, musicians often practice in isolation during the Competence stage. And since we know that deliberate practice with a focus on improving skills is essential to development, the need for the musician to be able to judge their current level of performance is important. Participants referred to their process for listening to themselves and working toward their goals during independent practice as a driver in their advancement. They would spend hours working on improving specifics aspects of their performance.

It was also notable that musicians frequently referred to themselves in humble terms. They rarely speak highly of themselves. The eminent individual within this study frequently referred to himself as sounding “sad” although he clearly was aware of his prestige and prominence within the field. This characterization represented humility in the face of the greats that had preceded him and as well as a consistent approach to dealing with the music. In that he was always in service of the greater cause of swing.

**Creativity.** Each of the components of improvisation has its own hallmarks that denote increasing ability within that task. They often develop asynchronously but each
follow a trajectory those results in mastery. As a student makes progress in each component, their overall improvisation deepens by being able to apply the newly acquired knowledge to their performance. If musician has achieved fluency within playing using a certain approach to the harmony of a composition, they will be able to combine that knowledge and skills with each previously mastered trait in each of the other domains.

Creativity is the result of learning the rules and using the skills of the field and the ability to create novel approaches to creating improvised melodies. Jazz improvisation was chosen for this study because of this field’s approach to creative production. Improvisation is fundamentally a creative skill that uses the chord structure of a composition to allow the musician to create spontaneous melodies called solos”. The improvisers in this study all take various approaches to how they create, but the common factor was that each approach was based on a deep and thorough understanding of the theoretical possibilities within a piece.

As I listened to the musicians, it became evident that there are levels of creativity within jazz improvisation that are discernible in your performance. As all musicians engage in transcription, reproducing the performances of eminent musicians is one of the first tasks one would be assigned. As students learn a solo, when they begin improvising, you will often hear direct quotations from a piece they have transcribed. This is a marker of a young improviser, but also denotes that the student is learning the language of jazz and beginning to understand the creativity demonstrated by previous experts.

The next level is to elaborate upon the knowledge you have acquired through both the study of vocabulary as well as the transcriptions and begin to create original
melodies. This is where improvisation begins to become more creatively challenging. If taken in comparison to Blooms Revised Taxonomy of Learning (Anderson et. al, 2001) this is where the highest level of cognition, creativity, becomes the focal point.

As I went into this study, I was under the impression that expert improvisers created melodies that were deliberate combinations and permutations of the extant knowledge described to this point. What I learned was that the actual process is much more organic. When asked, one participant remarked thusly regarding their level of consciousness while playing:

That’s the progression; you get to the point when you’re not thinking about the fundamental things…even though they are always there. You stop thinking about them and they become part of the process rather than something you must key on, they just become part of the whole thing. [P5]

This refers to much more of a spontaneous process that previously thought. There is an interesting caveat in that the musician, although not pre-determining what will be played, their spontaneous playing reflects the knowledge and skills of their development.

This overall process is most closely mirrored by the stages of acquisition of language.

**Giant Steps: A Grounded Theory of Talent Development among Jazz Improvisers**

This section discusses the newly created Grounded Theory of Talent Development among jazz improvisers that was generated during this study. Through interviews with experts to better understand their developmental trajectory I was able to generate seven categories that elicit stages of their talent development process.

When possible, the names of the categories were taken directly from the data as in vivo codes that embody the properties and dimensions of each theme. It became evident
that while the participants had varying experiences, there were several categories in which these experiences could be combined to form a theory of development.

The theory could be referred to as “The Steps of Giants” rather than “Giant Steps” to use a more accurate descriptor of what was observed. The trajectory developed during this study does not describe talent development as taking place through leaps, bounds, and large changes in one’s performance, but by myriad small steps that mirror those taken by the experts in the field. In this way, these are more the steps of giants rather than giant steps. The choice to continue to use Giant Steps is in homage to John Coltrane’s composition that is not only a demonstration of his eminence, but also serves as a general milestone in improvisational ability for those seeking to reach expertise.

There were several existing constructs that came into view during the study. Deliberate Practice was a concept that prevailed and existed throughout the trajectory as a fundamental part of improving performance. It provided a training ground upon which the musician constantly engages in more intricate ways. Gagne’s view of Giftedness and Talent being at opposite ends of a continuum was also reconfirmed as participants spoke of innately gifted individuals who did not practice so they never reached a level of adult expertise. They also described individuals who worked hard but lacked something intangible that did not allow them to be considered a great musician although they have worked arduously. The idea that we all have some innate gifts and regardless of where your gifts place you on the trajectory is validated in addition to the need for a period of deliberate practice where even the gifted must engage in order to reach expertise.
GIANT STEPS: CREATIVE TALENT IN JAZZ IMPROVISATION

The Giant Steps model is captured in Figure 1 as compared to the conceptual framework of TDMM.

<table>
<thead>
<tr>
<th>TDMM</th>
<th>Giant Steps</th>
<th>Creative Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure</td>
<td>Heard this Sound</td>
<td>Mini-C</td>
</tr>
<tr>
<td></td>
<td>• Hearing the music either at school or home</td>
<td>• Any improvisation is exploratory</td>
</tr>
<tr>
<td></td>
<td>• Engaging in introductory or exploratory activities to learn basic skills</td>
<td>• Focus on developing willingness to take risks</td>
</tr>
<tr>
<td></td>
<td>• Access to the jazz community whether at home, school, or online</td>
<td>• Playing the blues scale to improvise across simple blues progressions</td>
</tr>
</tbody>
</table>

### The Decision

*At some point after exposure, student makes conscious decision to study seriously, begins to engage in deliberate practice*

<table>
<thead>
<tr>
<th>Competence</th>
<th>The Woodshed</th>
<th>Little C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• After deciding to study seriously, the student engages deliberate practice around the following skills and areas:</td>
<td>• Improvisation through imitation</td>
</tr>
<tr>
<td></td>
<td>o Harmonic Knowledge</td>
<td>• Transcribing hallmark solos and performing them live</td>
</tr>
<tr>
<td></td>
<td>￭ Music theory</td>
<td>• Learning “licks” and interweaving them into solo performances</td>
</tr>
<tr>
<td></td>
<td>￭ Chord progressions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>￭ Ear Training to be able to recognize chord progressions when played without music</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Studying the Greats</td>
<td>• Learning to improvise over increasingly challenging chord progressions</td>
</tr>
<tr>
<td></td>
<td>￭ Transcribing eminent musicians</td>
<td></td>
</tr>
<tr>
<td></td>
<td>￭ Learning idiosyncrasies of expert performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Professional Practice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>￭ Playing in live performance settings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>￭ Visiting performances and meeting the musicians</td>
<td></td>
</tr>
<tr>
<td></td>
<td>￭ Having a community of musicians with whom you study and practice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Learning your horn</td>
<td></td>
</tr>
<tr>
<td></td>
<td>￭ Able to address the nuances of your chosen instrument to include but not limited to:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>￭ Sound, Fluency, Range, Pedagogy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Jazz is a Way of Life</td>
<td></td>
</tr>
<tr>
<td></td>
<td>￭ The musician regularly interacts with the community of musicians</td>
<td></td>
</tr>
<tr>
<td></td>
<td>￭ Practice is a daily part of their life and often scheduled and routine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>￭ Decisions are made about how they may affect opportunities for performance and growth</td>
<td></td>
</tr>
</tbody>
</table>

#### Being able to say what you want (Mastery)

*To transcend Competence, musician can show mastery in each of the fundamental domains on command in a manner that reflects the history and tradition of jazz music*

<table>
<thead>
<tr>
<th>Expertise</th>
<th>Say What You Want</th>
<th>Pro C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Able to execute in any setting with mastery</td>
<td>• Able to improvise with a style and substance that is distinctive</td>
</tr>
<tr>
<td></td>
<td>• Knowing your horn –</td>
<td>• Using improvisation to communicate stories or emotions</td>
</tr>
<tr>
<td></td>
<td>￭ Sound</td>
<td></td>
</tr>
<tr>
<td></td>
<td>￭ Technical facility</td>
<td></td>
</tr>
</tbody>
</table>

#### Advanced Creative Expression

*To become eminent, individual’s creativity and acceptance by the field are determining factors. To be differentiated from fame, the field recognizes the musician as one of “The Greats,” regardless of commercial success or notoriety. Eminence is a skill-based designation, not one of popularity.*

<table>
<thead>
<tr>
<th>Eminence</th>
<th>Have Something to Say</th>
<th>Big C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• After having achieved mastery, being able to compose and create within a style they created that is reflective of the history and tradition of jazz music</td>
<td>• The field determines whose creativity is both novel and recognizable enough to be considered eminent.</td>
</tr>
<tr>
<td></td>
<td>• Often, the musician creates a new niche (Bebop, Cool, BAM) that gains widespread acceptance among experts</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 1. Giant Steps Framework explaining the properties and dimensions of each phase of talent development for jazz improvisers in this study*
Chapter 5: Implications and Discussion

This grounded theory study resulted in a model for developing talent among jazz improvisers titled *Giant Steps*. Rooted in the Talent Development Mega Model (TDMM), *Giant Steps* describes the properties and dimensions of the talent development process of jazz improvisers with a specific focus on the development of creative ability and psychosocial skills. Too often, creativity is thought of in primarily artistic terms with a focus on novelty without due consideration for the knowledge and skills that underpin creative thought and production (Subotnik et al., 2011).

This study was centered on jazz improvisers as this is one of few domains that provides systematic training in creative ability. Named after a milestone composition by an eminent improviser, the Giant Steps Framework provides insights for creativity and its development, a deeper understanding of the properties and dimensions of talent development of jazz improvisers, and a deeper understanding of the role of psychosocial skills and dispositions within the talent development process. While these themes were uncovered during a study of jazz improvisers, the results have potential implications for any field that values creativity among its experts. While many fields like science and sports value creative output, rarely do they provide activities specifically geared toward creative development.

There are four stages of development in Giant Steps: *Heard This Sound; Going to the Woodshed; Saying What You Want, Having Something to Say*. The first two stages are based on motivation and content mastery with the last two stages being heavily
GIANT STEPS: CREATIVE TALENT IN JAZZ IMPROVISATION

dependent on creativity. The first level requires that the student be exposed to and take an interest in a domain. The emerging theme of Heard the Sound refers to the participants’ description of this moment of introduction which seemed to be permanently etched within their mind.

The idea that success within a domain first requires that a student is introduced to a domain is well established within the literature (Bloom, 1985; Stambaugh, 2018; Subotnik et al., 2011) and was supported by the findings of this study. Participants spoke about how they were introduced to the study of jazz in a manner that had an indelible impact on them. Even those who did not decide to study seriously in the wake of this initial event had a clear recollection of it and the impact it had on their interest. Some were exposed to music and improvisation in the home, others in church, some in school, but all referenced an initial introduction that led them to want to learn more.

This leaves an interesting challenge for teachers of gifted students. This finding increases the need for activities that allow a student to explore various domains at an entry level (Bloom, 1985; Corwith, 2018; Renzulli & Reis, 2012; Stambaugh, 2018). By allowing students within the talent pool ample opportunities to demonstrate gifted potential we increase the likelihood of pairing the student with an area of study in which they will thrive. It is plausible that a greater portion of the services provided to gifted children should be geared toward introducing them to a wide variety of domains of study (Corwith, 2018; Renzulli & Reis, 2012). Educators should be constantly seeking to ensure the potential next Michael Jordan finds his way to basketball, the next Steve Jobs begins to program, Louis Armstrong is introduced to a trumpet, and Michael Phelps is
taught to swim. This requires a greater effort in exposing students to the various genres in which they may have an interest and are closely aligned with their gifts.

Each participant discussed how they were introduced to jazz music and how it piqued their interest. Whether it was a parent or family member who played, or a teacher who gave a demonstration, they all clearly recalled the moment they first encountered hearing or seeing a jazz musician and it was always a chance encounter. Based on these data, students who appear to be captivated are potentially exhibiting a spark of interest that could lead to engagement within a domain. There could be signals of intrinsic motivation that may lead to task commitment which is essential for reaching expertise (Renzulli & Reis, 2012).

**Finding Purpose**

After participants were exposed to the domain, each of them made a conscious decision to study seriously which preceded their pursuit of deliberate practice. This decision changed how they viewed themselves as well as how they behaved regarding their practicing and playing. Making a choice and changing behavior reflects research about students who have found what Damon, Menon, and Bronk (2003) describe as purpose (see also Mariano & Going, 2011). Defined as “a stable and generalized intention to accomplish something that is at once meaningful to the self and of consequence to the world beyond the self” (Damon et al., 2003, p. 121), their framing of purpose within the literature aligns closely with the transition into the competence phase described by participants as deciding to study seriously and beginning to live the jazz way of life.
Purpose is described as having three characteristics: stable and far-reaching goals, purpose beyond the individual self, and being directed at a task at which one can make progress (Damon et al., 2003; Mariano & Going, 2011). This mirrors what I describe in Chapter 4 as beginning to live the jazz way of life during the competence phase of development. Students in this phase set a goal that may not be fully formed toward becoming an expert jazz improviser, but they are dedicated to improvement and taking the next necessary steps to develop their talent in this area.

Purpose is a form of intrinsic motivation that is a positive contributing factor to developing creative ability which helps fuel a student’s willingness to endure the hardships that go with the study of their domain. If the challenge outweighs the student’s sense of purpose, the student may abandon study of the domain. Once a student has an interest in a domain and has decided to pursue the jazz way of life, they must begin to practice and pursue opportunities for development to further their skills within the trajectory.

What is not described within the literature around youth purpose that was clear throughout this study was a clear change in behavior geared toward increasing their ability. This omission could be due to the developmental nature of this study in contrast with the psychological work of Damon et al. (2003). In this study, the recognition of purpose represented a milestone in the trajectory of participants. Each participant began to pursue deeper learning opportunities and practice with a keener focus on improvement once they identified themselves as a developing jazz musician. Students also endeavor to focus their learning network by seeking to engage with other students who are pursuing
advanced studies in addition to renowned mentors in the field who can provide wise counsel.

Gifted educators should look at ways they can weigh a student’s purpose within their identification matrices. We know that students who have Purpose have the potential to outwork more gifted peers depending on several other factors, not the least of which includes their motivation. If a student’s actions demonstrate an above average commitment to a domain, they should be allowed to take some next steps to see if they are able to overcome any deficiencies that would otherwise prevent their identification.

**Saying What You Want**

This describes the improvisers’ ability to perform in a variety of settings and genres of jazz with great fluency. A musician at this level would be expected to meaningfully improvise on most any composition with little prior notice, study, or preparation. Even the prodigious Marsalis explains his failures throughout his development that he worked diligently to prevent from reoccurring (Marsalis & Ward, 2008).

This level also represents an ability to emote through improvisation having an ability to sound sad, happy, joyful, or other expressive goals. This requires both knowledge of the current chord structure as well as what sounds will achieve the desired results. To the musician at this level, these considerations are autotelic in that the musician is not consciously considering the technical aspects of the performance.

At this level, the expert improviser is exhibiting mastery with what they described as a similar process to speaking.
“Yeah, I know what I’m gone play, but right before, not a long time before, like speaking, you know what you gone say before you say it but right before you say it.”

Where humans use words to describe our thoughts, feelings and emotions without individually considering each part of speech as we talk, expert improvisers are accomplishing similar communication goals with the melodies they create. As discussed later in this chapter, this comparison goes beyond pure metaphor as neuroscience as found evidence of similar brain activity when improvising and speaking. There are the beginnings of a positive relationship between the psychological and physiological science evidenced within this model in terms of how the creative process of improvisers is structured.

**Having Something to Say**

This is the highest level of performance as a jazz improviser where all the prior components of performance are combined in a manner that is audibly recognizable. This is also the level where the musician can improvise with a sort of personality as they play. Eminent improvisers are widely distinguishable in their approach to playing. During field observations, I witnessed a room of experts identify a recording of an eminent musician and casually have a rich conversation about that musicians’ approach to improvising and those who have similar styles. A follow up study where random selections of improvisation are played for a group of experts to determine their ability to identify the eminent improviser could triangulate this finding.

Giant Steps refers to this level of performance as Associative Creative Expression (ACE) because of the use of the higher order driven associative cortex within the brain to make connections between various areas of the cerebral cortex. Sound and emotion are
both are processed in the temporal lobe which is why some of the most common associations of music are to emotions like sad, happy, soulful, and joyful. A more distant association would be between temporal and the parietal lobe where language processing needed for storytelling occurs or the temporal and occipital lobe where visualization takes place. The image of the parts of the brain in Figure 2 helps to illustrate these distances.

Figure 2. Color coded depiction of brain areas

Throughout the study, several areas of further research were discovered. I learned of brain-based research around jazz improvisation that provided a point of triangulation for this study, created an online community that attempts to foster a network of musicians dedicated to improving their ability, and added two concepts to the results, namely ACE and Coltrane’s Difference.

This study explored the activities the participants believed were dedicated to developing creativity ability via jazz improvisation and analyzed their narratives for evidence of psychosocial characteristics that support creative development. The findings discussed creativity in terms of a trajectory of creative products (e.g., Mini-c, Little-c,
GIANT STEPS: CREATIVE TALENT IN JAZZ IMPROVISATION

Pro-C, A-CE, Big-C) the creative person through their psychosocial characteristics, and the creative process of the musicians by examining their cognitive process.

Many fields within the arts do not demand an expert level of creativity to be considered an expert. Classical musicians must embrace musicality which could be considered a form of creativity, but they are not often expected to compose, improvise, or even embellish the music they perform. The jazz improviser has the responsibility of reaching mastery in every facet of performance and developing new and novel melodies while improvising. Because of the inherent nature of creativity, this study is a unique occasion to collect and analyze these data.

TDMM/Giant Steps Comparison Chart

<table>
<thead>
<tr>
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<tbody>
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<td>Mini – C</td>
</tr>
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<tr>
<td>At some point after exposure, the student makes a conscious decision to study seriously and begins to engage in deliberate practice.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competence</td>
<td>The Woodshed</td>
<td>Little C</td>
</tr>
<tr>
<td>Being able to say what you want (Mastery)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In order to transcend Competence, the musician must be able to demonstrate mastery in each of the isolated fundamental skills in a manner that reflects the history and tradition of jazz music</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expertise</td>
<td>Saying What You Want</td>
<td>Pro- C</td>
</tr>
<tr>
<td>Associative Creative Expression</td>
<td></td>
<td></td>
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<tr>
<td>To become eminent, the musician’s creativity and it’s acceptance by the field are determining factors. To be differentiated from fame, the field must recognize the musician as one of the “Greats” regardless of commercial success or notoriety.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eminence in this model is a skill-based designation, not one of popularity.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eminence</td>
<td>Having Something to Say</td>
<td>Big - C</td>
</tr>
</tbody>
</table>

Figure 3: TDMM/Giant Steps comparison chart
GIANT STEPS: CREATIVE TALENT IN JAZZ IMPROVISATION

Giant Steps refers to this level of performance as ACE because of the use of the higher order driven Associative Cortex to make connections between concepts contained in disparate areas of the brain. Sound and emotion are both are processed in the temporal lobe which is why some of the most common associations of music are to emotions like sad, happy, soulful, and joyful. A more distant association would between temporal and the parietal lobe where language processing needed for storytelling occurs or the temporal and occipital lobe where visualization takes place.

Creative Cognition

Creativity as discussed in this study is a psychological process, but its actual physiological functioning is increasingly a topic within scientific literature (Chakravarty, 2008; Limb & Braun, 2008; Takeuchi et al., 2012). The use of functional Magnetic Resonance Imaging (fMRI) has allowed scientists to measure brain activity during certain creative activities based on Blood Oxygen Level Dependent images captured while in an fMRI scanner (Chakravarty, 2008). These types of studies are limited due to the nature of the test and the inability to recreate an authentic environment because fMRI scanner is not able to fit an artist’s easel or musician’s instrument. In addition, the magnet used to generate the images is powerful enough to pull objects from across the room when it is activated which prevents any metal instruments, or instruments with a metal part from being a part of the experiment.

Although limited, research has gained deeper understanding of the creative process with a focus on improvisation using these scanners. Future research in this area should explore the ability to provide a setting more familiar to the musician. It is possible
that there would be an impact on the ability of the participant to engage in Flow when there is a noticeable change in their equipment.

Researchers using fMRI technology have found that during real-time creative acts like improvising or freestyle rapping, the areas of the brain associated with monitoring, planning, and evaluation are deactivated while areas associated with language and connecting the areas of the brain are engaged (Limb & Braun, 2008; Takeuchi et al., 2012). The lateral orbital frontal cortex and dorsolateral prefrontal cortex, areas of the brain that are typically associated with executive functioning were inactive. This lack of activity could potentially signal a defocused state of free associations that allows purely spontaneous creation absent conscious reasoning (Limb & Braun, 2008).

When using fMRI to examine the neural activity of professional jazz pianists when improvising, Limb and Braun (2008) found activation within the frontal polar portion of the medial pre-frontal cortex, which is an area believed to have autobiographical functions. These researchers posit that this brain activation means that improvisation is “a way of expressing one’s own musical voice or story” (Limb & Braun, 2008, p. 4).

Limb and Braun’s (2008) findings have an interesting alignment with the framework of Flow (Csikszentmihalyi, 1996). The deactivation of brain areas thought to represent evaluation and monitoring appear to be associated with the autotelic experience of flow where self-consciousness is said to disappear, and the participant is not concerned with failure (Csikszentmihalyi, 1990; Limb & Braun, 2008). While this initial alignment of psychology and physiology is intriguing, there is not complete agreement between the two fields.
The brain has four regions that each performs a specific function. It is thought that creative individuals have an above average ability to make connections between areas of the brain to create novel and useful concepts. Many artists use imagery from other as a form of inspiration in how they create their work. A musician may invoke happiness or sadness when they play, a painter may use certain colors to create the perception of tension between visual ideas, or a scientist may visualize two snakes intertwined as a conceptualization of the structure of a DNA molecule (Chakravarty, 2008). It is how creative individuals can use other areas of the brain in service of their primary goal is an area of creativity worthy of further exploration.

While the parts of the prefrontal cortex are each dedicated to various cognitive activities, there is also an area important to creativity that sits on top of the prefrontal cortex, known as the association cortex. The association cortex is dedicated to the transfer of information between the discrete areas of the brain. The corpus callosum serves a similar purpose in that it connects the two hemispheres of the brain and helps to facilitate transfer between the two regions. The Giant Steps grounded theory in that expert creativity requires deep and vast expertise within the domain before one can make a significant contribution in that domain. It is known that groundbreaking discoveries are far more likely the result of an expert than a novice. However, not every expert is creative, which is also better understood by the function of these areas of the brain.

In a study using Divergent Thinking to represent creative ability, Takeuchi et al., (2012) found that individuals who had higher creativity scores also had greater connective tissue and a larger corpus callosum. A reasonable hypothesis based on this information is that those individuals who possess high levels of creative ability will be
more able to move between areas of the brain more flexibly, known as Functional Connectivity (FC). FC speaks to the brain’s ability to connect the various areas and networks that comprise its cognitive processes. If we are in search of the next individuals who will make Big-C contributions, we should be looking to the students who have higher levels of FC and our ability to strengthen a student’s FC.

As we discussed how many experts use visual imagery in another area to problem solve within their domain, in the arts this type of transfer association is often the goal of the artist or composer. The results of this study discuss how expert improvisers conceptualized their playing once they had achieved a certain level of fluency. They stopped thinking about the rules and how they could use various tools and devices to improvise and began melodies with an understanding that their improvisation would innately conform due to their mastery of harmonic knowledge and auditory discrimination. Flow is evident in this practice as the skills needed to meet this challenge are clearly present in addition to the autotelic nature of this description. The musician no longer has to focus on the task because they are able to execute the technical components without conscious effort.

Expert improvisers also use their playing to engage senses other than sound. Musicians begin to describe telling a story or communicating a feeling or emotion as their goal without conscious engagement with things like chord changes or time signatures. Both experiences prove the need for transfer between various areas of the brain for their accomplishment. These two processes speak to the brain’s ability to inhibit certain skills from the conscious mind while activating other skills in the creation of novel ideas.
Associative Creative Expression

Pro-C represents creative products of experts that are beyond little-c but do not fundamentally change how a field works as a Big-C. Artist level musicians accomplish this by demonstrating a style or personality in their playing that uses elements of performance to appeal to senses beyond just the notes they play (Subotnik, 2004). This implies a second creative layer within the performance of a jazz improviser at the artist level. The artist level improviser is composing a melody as that conforms to the technical requirements while simultaneously communicating a feeling, emotion, or story to the listener. The researcher uses ACE to describe this higher level of creativity. There is the potential that the Association Cortex is engaged during this activity but there is a paucity of research that looks at this potential explanation.

ACE represents the ability to impact the emotions, thoughts, or feelings of an audience as a result of the improvisation. In this regard, creativity has reached a level where it has begun to cross into other senses. Fundamentally, the jazz musician is impacting the participants hearing through the sounds being produced. A next level is when the improvisation begins to be personified to carry human emotions. This is when listeners begin to refer to a musicians’ improvisation as sounding sad, happy, cool, or having any number of emotional characteristics. A higher level would be when the musician is said to be telling story through their playing, or listeners are viscerally impacted by the performance they are witnessing in ways that change their mood or evoke a visual image in one’s mind. I believe this to be the highest level of creativity in that this designation is seldom, if ever, found among young or inexperienced musicians. It also represents the ability to combine the two fundamental levels of creativity in a way
that achieves this transcendence of senses. I will endeavor to better understand how these seemingly unrelated senses are connected by listening to improvisation as a point of further study.

ACE is what this researcher describes as middle-c. At its core, middle-c creativity is like that of pro-c creativity as both constructs represent creative ability among experts within a domain. While both levels of creativity are within the practice of experts, middle-c creativity refers to demonstrated skill as a performer, as well as a producer within the TDMM framework. Beghetto and Kaufman (2009) provide an example of a professional chef’s creative entrees as an example of pro-c that would qualify as solely as a producer as the chef will go through several iterations of a recipe before presenting it for public consumption and would not attempt to vary the dish each time it was served.

Although the jazz improviser does exhibit qualities of a producer, it is the improvisatory performance aspect of the creative product that separates middle-c from pro-c. In accordance with pro-c, it is understood that middle-c products do not move a field forward in a single occurrence. However, the consistent employment of middle-c creativity can create a body of work that can lead to eminent recognition (Beghetto & Kaufman, 2009).

The work of Charlie Parker serves as noteworthy example of an artists’ collective work moving a field forward (Berliner, 1994; Marsalis & Hinds, 2003). Through his playing, Parker was able to establish a style of improvising that was indicative of his own mastery that eventually gained the recognition of the field of expert improvisers. Parkers’ widespread influence and acceptance of his improvisational style is a middle-c level of creativity that did not in any one instance cause momentous change, but collectively lead
to the big-C creation of the Bebop genre within jazz music over an extended period of time (Berliner, 1994; Marsalis & Hinds, 2003).

**Coltrane’s Difference**

John Coltrane has been known for his response to a reporter’s question about practicing where he replied, “I only practice when I am working on something” (DeVito & Coltrane, 2010). Those familiar with him knew that Coltrane was not speaking to the frequency with which he practiced but was drawing a clear distinction between playing and practicing. This speaks to the focus on specifically developing clearly identified skills which the literature would refer to as Deliberate Practice (Ericsson & Charness, 1994). For a musician to be “working on something” in this instance means to be focused on improving his or her performance.

Coltrane’s Difference provides a distinction between someone who is developing their skills in a focused and disciplined manner versus engaging in the act of playing an instrument with no regard for skill development. The Coltrane difference helps describe why every student who practices for 10,000 hours does not become an expert. Without proper guidance, a student may be learning incorrectly or avoiding difficult activities that are essential for their development. Without a specific focus on improvement, there can be no expectation for increased skills. Similar to physical conditioning, there is a target area for each exercise in order to build a particular muscle. When seeking to improve as a jazz improviser, one must focus on specific skills in order to increase ability. There could also be an unwillingness to engage in the specific activities that are required to improve as deliberate practice can often be an arduous process.
This construct first emerged during the literature review prior to the study. As I analyzed the narratives, the decision to study jazz music seriously was a frequently reoccurring theme as discussed in Chapter 4. Immediately following the decision to study seriously, musicians would describe how they changed their approach their practice. A line of inquiry resulting from this idea was the difference in how and what the musicians practiced. While they provided little about what their practice was like prior to deciding to study jazz seriously, they began to remark about how they worked on specific facets of their playing with a detailed specificity and enthusiasm.

I have instructed students who played their instrument very frequently; although they only repeatedly played songs that they enjoyed playing. This resulted in them being able to play a few songs the exact way they practiced them, which may or may not have been correct, but not being able to demonstrate increased mastery of any skill. The act of playing the instrument without a focus on improving will rarely lead to overall improved performance. A good teacher or mentor should be attuned to the needs of the student and would guide them out of this ineffective behavior. However, the student must be willing to receive this information and put it into practice. In sports this is often discussed in terms of “coachability” and that same idea is reflected here. The students’ ability to receive and implement specific feedback aimed at increasing their skills toward expertise is integral to their ability to improve.

It was also uncovered during this study that jazz improvisers isolated fundamental aspects of performance and worked to improve each of them to improve their overall ability to improvise. Discrete components of performance like playing chord changes, sound, technical proficiency, range, and articulation, each receive time and attention
dedicated to respectively improving them. Focusing on the isolated skills that make up a task is also common in the athletic domain. Basketball players will focus on dribbling, shooting, free throws, or other discrete tasks in a deliberate manner with the hope of improving their overall ability to play the game. I am unaware of scientists practicing their ability to generate hypotheses or lawyers transcribing and practicing the oral arguments of successful trial attorneys. This focus on the fundamentals could be important to developing expert creative ability.

The Shed

During the Castleton Festival in 2016, where several of the interviews and observations for this study took place, a trombonist with the staff mentioned that he would take a closer look at students in attendance that came from areas where jazz music was not easily accessible. To him, this meant that those students may not be able to find expert musicians as easily as a student from a city with a thriving jazz community like New Orleans or New York City. Because access to the domain is not as readily available, either the student has an exceptional innate ability, or an above average work ethic that allowed them to find jazz musicians using technology or travel. Either answer demonstrates a level of task-commitment associated with giftedness (Renzulli & Reiss, 2012).

His line of thinking caused me to reflect on how I could potentially use technology to aide students in creating a community of gifted musicians. This led me to create an online community of musicians engaging in deliberate practice who may want to share their progress with a larger audience as a form of external motivation. As previously stated, musicians often refer to practicing as “shedding” or “going to the
woodshed” as the conceptual space where deliberate practice takes place. Taking a piece of music to the woodshed meant you were going to spend a considerable amount of time working until you had that piece of music “under your fingers” which meant that you had practiced the piece to a level where it was included in your repertoire. These online communities are networks where musicians can highlight and share the effort put into their performance.

_The Shed_ started as a Google+ site was taken down as Google phased out the Google+ platform in its entirety. This caused me to move the hosting of this community to Instagram and Facebook where connections must be rebuilt. Although I lost the small following that had joined the first account, switching to these platforms supplies access to a larger community of musicians through the use of hashtags and the volume of subscribers.

The Instagram page is primarily a resource for musician to post pictures of them practicing or “In the Shed” and garnering the attention and support of colleagues in a network outside that which you may have readily available in the local community. One of my first interactions was with a trumpet player in Australia who suggested we trade playing portions of an etude that I posted myself practicing as a way of “steel sharpening steel” and collaborating across the world. These types of interactions could be beneficial for students who live in remote areas and need to leverage technology to engage within a community of serious musicians. I look forward to finding additional ways to leverage this tool as a support for students across the world in the days and years to come.

The Shed is an online community for musicians who are deliberately practicing with the intention of improving their skills toward expertise as well as experts who want
to share the things they are adding to their repertoire. This allows those who are not in
thriving musical communities to connect with others who share their passion but are
geographically distant. With pages on Instagram and Facebook, there are over 100
accounts that interact with The Shed either through liking the posts or viewing the
resources.

Each page provides resources that are publicly available from expert musicians or
institutions that are valuable to students who are studying jazz music. They also celebrate
those who are already sharing videos on these platforms of what they are currently
practicing which could be helpful in other students following through as well. As students
continue to pursue musical knowledge using technology, I hope this will become an
increasingly valuable resource for them.

The NFL combine, which is one of the most public identification processes,
measures athletes’ ability to isolated tasks—run 40 yards, high jump, bench press 225
pounds, and so forth—to predict how well each participant will perform in their
respective roles if drafted into the league. Rather than arbitrary standards for expected
performance, these categories are used to compare newcomers to professionals to predict
their performance. There are varying expectations tailored for each position on the team
each having norms for performance levels. This type of identification process utilizing
isolated fundamental skills is worthy of further investigation.

It is possible that additional domains could benefit from studying isolated
fundamentals. This is equivalent to novelists practicing creating metaphors,
foreshadowing, and other literary elements, or a scientist who focuses on their ability to
measure, extract, or hypothesize without conducting an entire experiment. There is more to learn about how this practice of isolating the fundamental components of a domain to improve them through deliberate practice is replicable in other domains.

Conclusions

This study sought to answer questions about the properties and dimensions of the talent development process for jazz improvisers. A broader goal was to contribute to the literature around creativity and creative talent development. This study uncovered dimensions of talent development that show creativity to be developable and provides guidance to aid in its development. The role of the student’s support system to include mentors, teachers, and family members were explored which provided insight into their impacting exposure to the domain and guidance throughout.

The Giant Steps model created during this study give an initial look at the properties and dimensions of talent development process of jazz improvisers. I believe this study has uncovered several areas of further research that can be used to help educators of the gifted become more effective and efficient in developing talent in their students.

By gaining a better understanding the developmental trajectory of jazz improvisers, I hope to aid teachers who may not have a methodology to follow in how they are providing guidance and support to their students. This study uncovered several areas that have potential for improving talent development throughout many domains and brings forth new knowledge in terms of understanding creativity and its development.
### Appendix A

#### Descriptors

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<tr>
<th>ID</th>
<th>Birthplace</th>
<th>Sex</th>
<th>Instruments</th>
<th>Musical Family</th>
<th>Gifted Child</th>
<th>College</th>
<th>Gospel</th>
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<tr>
<td>1</td>
<td>New Orleans, Louisiana</td>
<td>Male</td>
<td>Flute, Clarinet, Tenor Saxophone</td>
<td>Yes</td>
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<td>No</td>
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<td>2</td>
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<td>Male</td>
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<td>Trumpet</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>7</td>
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<td>Male</td>
<td>Bass Clarinet, Baritone Saxophone</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>8</td>
<td>Washington, D.C.</td>
<td>Male</td>
<td>Bass</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
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<td>Male</td>
<td>Percussion</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<td>10</td>
<td>Tel Aviv, Israel</td>
<td>Male</td>
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<td>No</td>
<td>No</td>
<td>No</td>
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<td>11</td>
<td>Cincinnati, Ohio</td>
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<td>Trumpet</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
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</tbody>
</table>
Appendix B

Semi-structured Interview Schedule

Exposure
- What was your first experience with jazz?
- What musical skills came easy to you?
- Who was the first person who noticed your talent?
- Were you more talented than others at your age?
- When did you first fall in love with jazz?
- Did anyone else in your family/household play jazz?

The Choice
- When did you begin to study seriously?
- What influenced this decision?
- What changed as a result of this decision?
- Describe the progression of learning activities and things you practiced throughout your development.
- Which were most influential or impactful to you?

Practice
- What did you practice when you first began to improvise?
- How did you know that you were accomplishing the task you set out to achieve when you were practicing?
- Do you still practice?
- What do you practice?
- Is there a difference between practicing and playing? Why or why not?
- To what extent has the way you practice improvisation changed over time?

Teachers and mentors
- With whom did you study jazz? In what ways did these individuals provide instruction?
- On which aspects of playing did they focus?
- To the best of your ability, categorize the different types of learning activities your respective teachers assigned. What skills do you feel are necessary to be a jazz improviser?

Improvising
- How would you describe your creative process when improvising?
- Has your creative process changed since you began improvising? How? Why?
- To what extent does your ability to think creatively while improvising transfer to other activities?

Identification
- If you were selecting students to play jazz from among students with no experience, what skills and dispositions would you seek?
- What are the fundamental skills necessary for jazz improvisation?
- What skills, if any, cannot be taught?

Instructional Activities
GIANT STEPS: CREATIVE TALENT IN JAZZ IMPROVISATION

- How important is the study of classical music to the development as a jazz improviser?
- Is it more classical repertoire or technique that is necessary?
- Why is transcribing important to improvising?
- How did you develop your harmonic knowledge?

Experts vs. eminence

- What are the distinguishing factors among experts?
- How do you separate those who "can play" from those who have not achieved a level of greatness?
Appendix C

Researcher as Instrument Statement

As a child, I had very little exposure to jazz or jazz improvisation. In my neighborhood in inner-city Detroit, I would often hear Motown Record label greats such as The Temptations, The Four Tops, and Marvin Gaye. As an adult, I realized that these songs often included samples of instrumental improvisation. However, my musical understanding as a youth was limited and did not include any knowledge of improvisation. Once I reached high school, I began to study music seriously. I was becoming more intrigued with the study of the trumpet and the possibilities for developing my skills as a jazz trumpet player. The jazz band at my high school was led by locally renowned educator, Dr. Benjamin Pruitt, and comprised of some of the best musicians in city, partially because membership in the highest instrumental performing ensemble was a pre-requisite.

My first experiences really listening to improvisation came shortly after I joined the high school jazz band. I borrowed cassette tapes of songs and performances from members of the band. My mother also supported my budding interest by purchasing compact discs of jazz music that I played frequently. Eventually my listening repertoire grew to include artists like Max Roach, Louis Armstrong, Clifford Brown, James Carter, Wynton Marsalis, Duke Ellington, John Coltrane, Miles Davis, and several others. I read about their lives, their pastimes, the people they associated with, where they grew up and lived, and anything about them made them unique. I learned that each of these musicians brought a unique perspective to their playing based on their environment, experiences, skills, preferences, and several other variables. I discovered that musicians that grew up
playing in church would often have gospel inflections in their improvisation, those with extensive classical music backgrounds would play complex passages that were difficult to navigate for even an advanced improviser and the New Orleans brass band tradition is evident in the playing of most musicians from that region of Louisiana. I was beginning to understand that my life would be on display as an improviser and that my life’s experiences would be a part of the story I told through my playing, as was the case for every jazz improviser.

My first formal lessons in improvisation came from trumpeter Bill Lucas of the Detroit Symphony Orchestra. He instructed me to create improvised melodies using only three notes to garner understanding of his philosophy that improvising was as much about how you played the notes as it was what notes you played. Mr. Lucas boasted of his study of jazz trumpeter Freddie Hubbard. He had done what every improviser is tasked to do; find a musician who plays in a manner you enjoy and begin to imitate them. Jazz educators encourage the novice improviser to study and recycle musical ideas from legendary performers. I admired the ballads of Miles Davis as well as the Be-Bop style of Dizzy Gillespie and the conversational nature of Clifford Brown’s improvisation, so I began to learn their solos and compositions. I attempted to understand their playing the way my teacher had done Freddie Hubbard. This type of musical case study on eminent musicians coupled with learning “jazz standards” made up my first lessons in improvisation.

After studying with Bill Lucas, I was fortunate to study with several musicians of the Detroit Jazz legacy to include Marcus Belgrave, Charlie Gabriel, and many others. Each of these musicians provided me with additional skills and guidance regarding my
jazz studies. I continued to study with each of the remaining living teachers I have had when our schedules align.
Appendix D

Visual Data

Figure D1 Wynton Marsalis speaking to students
Figure D2. Carlos Henriquez of Jazz at Lincoln Center demonstrates for student. Castleton, Virginia. 2016
Figure D3. Charles Gabriel of Preservation Hall Jazz Band demonstrates during interview. New Orleans, Louisiana. 2016

Figure D4. Wynton Marsalis writing music with Ali Jackson after a concert.
References


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GIANT STEPS: CREATIVE TALENT IN JAZZ IMPROVISATION


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GIANT STEPS: CREATIVE TALENT IN JAZZ IMPROVISATION


GIANT STEPS: CREATIVE TALENT IN JAZZ IMPROVISATION

Anthony Washington
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Curriculum Vitae

EDUCATION

College of William & Mary, Williamsburg, VA June 2019
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Emphasis: Gifted Education Cognate: K-12 Administration

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Committee: Tracy L. Cross, Ph.D. (Chair), Carol Tieso, Ph.D., Rena Subotnik, Ph.D.

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Master of Music (M.M.)
Music Performance & Composition

Thesis: “A Comparison of the Suzuki Method of Talent Development to the Common Practice of Public School Instrumental Music Education”
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PUBLICATIONS


CONFERENCE PRESENTATIONS

Differentiation in the Gifted & General Education Classroom. Guest Lecture at University of Richmond, Richmond, Virginia, February 2017, September 2017.
Giant Steps: Creative Talent Development. Distinguished Lecture Series Speaker, Southern Methodist University, Dallas, Texas, December 2014.
Identifying High Potential in Underserved Populations. National Curriculum Network
Developing Your Child's Talent in the Arts. Focusing on the Future Conference, 
College of William & Mary, Williamsburg, Virginia, January 2011 & 2012 

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International Baccalaureate Coordinator
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June 2012 – February 2018 - Richmond Public Schools
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Dean of Students, 2016 - 2018
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August 2010 - June 2012 - College of William & Mary, Center for Gifted Education
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Assistant Director, Camp Launch 2011-2012
Editor, Bridge Newsletter, 2010-2011

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August 2008 - July 2010 - I.C. Norcom High School, Portsmouth, VA
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Director of Bands & International Baccalaureate Music Instructor
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Instrumental Music Teacher

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President, Graduate Education Association
3rd District Undergraduate Affairs Chairman, Omega Psi Phi Fraternity, Inc.
Board Member, Virginia Association of Supervision and Curriculum Development
Member, National Association of Gifted Children

CERTIFICATIONS

Certified Trainer, Google Apps for Education
Virginia Post-Graduate Professional Teachers’ License 2015 - 2019
School Leadership Licensure Assessment (SLLA) Score – 180
International Baccalaureate Certified PYP, MYP & DP
TECHNOLOGICAL COMPETENCIES
Blackboard, PowerSchool, SPSS, Dedoose Qualitative and Mixed Methods Data Analysis Software, Finale Music Notation Software, WordPress