The Utility of Visually Nontraditional Scores in the Collegiate Voice Studio

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THE UTILITY OF VISUALLY NONTRADITIONAL SCORES IN THE COLLEGIATE VOICE STUDIO

By

Jennifer Voigt

A DOCTORAL ESSAY

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THE UTILITY OF VISUALLY NONTRADITIONAL SCORES IN THE
COLLEGIATE VOICE STUDIO

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The incorporation of learning science into vocal pedagogy has been a slow process with advancements in biology and physics dominating change in the field. However, recent research into learning styles and the processing of motor skills has revealed areas that could be enhanced within standard vocal teaching procedures. This study addresses the possibility of filling these gaps with the inclusion of visually nontraditional scores as a teaching tool. Specifically, this paper examines the utility of these scores within the collegiate voice studio. Visually nontraditional scores can contribute to a variety of learning needs and facilitate the acquisition of new technical and artistic skills. Repertoire is reviewed for each level of collegiate voice study.
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Chapter 1
Introduction

The purpose of this study is to examine the utility of visually nontraditional scores in the collegiate voice studio. In this study, the terms “visually nontraditional” will be used to refer to any music notation which possesses a visual element not typically found in the standard, Western style notation used in most art song and opera scores. Three research questions will be considered. 1. How can visually nontraditional scores facilitate different learning styles in the voice studio? 2. How can visually nontraditional scores help a student develop into a well-rounded vocal artist? 3. Is there literature utilizing this notation that is appropriate for singers with various levels of experience?

Background

Many advancements in the field of vocal pedagogy over the centuries have changed the way instructors teach classical voice. With the invention of the laryngoscope in 1815 by Manuel Garcia II, for the first time in history, singers could see the production of vocal sound from its source.¹ This breakthrough solidified some scientific theories and provided new perspective on the anatomy of the voice. Still, some teachers and researchers saw this invention as a detriment to the craft of pedagogy.² Voice pedagogue Philip Duey claimed that Garcia’s discovery simply gave pedagogues more to argue about, “[broadening] the field of controversy where the problem of correct singing is involved.”³ Despite the inherent controversies that can be created with a new discovery,

2. Ibid, xxii.
other researchers refer to Garcia’s invention as the dawn of a scientific approach to singing.⁴

The next major stimulus for change occurred with the invention of sound recording in the late 1800s.⁵ Sound recording made the singing world more international. It created new standards for interpretation and tone. Where national preferences in repertoire, timbre, and nuance were once strongly defined, a more homogenized set of ideals began to form. Other scientific advancements, such as software that translates sound into spectrographs, have provided valuable information about the specific acoustic properties of each singer's voice. With each new discovery in physics and anatomy, the vocal community finds new insight into the way the voice works and how to train it.

Though vocal pedagogy has evolved over the centuries, in many ways it has stayed the same. There continues to be a wide variety of opinions regarding tone and breathing reflected in the national schools of singing.⁶ The materials and media used to teach voice have also remained fairly consistent with the exception of anatomical models and spectrographs. In general, most of the advancements in vocal pedagogy seem to have been in the scientific realm. However, research regarding learning science within the voice studio is still very young.

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⁶ Richard Miller, National School of Singing: English, French, German, and Italian techniques of singing revisited (Lanham, MD: Scarcrow Press, 1997).
Problem

The problem addressed in this study is the lack of attention paid to using visually nontraditional scores as teaching tools in the collegiate voice studio. There may be benefits in using an alternative visual stimulus to reframe students' musical perception, facilitating healthy singing and artistic growth.

“Singers have an instrument that cannot be seen or touched and only they can play.”7 Because of this, singing can be a challenging skill to learn and teach. Popular treatises in today’s pedagogy indicate most voice instruction is delivered in an auditory or kinesthetic manner. Visual stimulus takes up a smaller percentage of voice instruction. Most vocal pedagogy literature spends a great deal of time discussing anatomy and the science behind breathing, phonation, and resonance. The remainder of each text is usually focused on diagnosing technical flaws based on the student’s sound, posture, and physical tension, with possible solutions to each problem. The authors of these treatises rarely include references to teaching different types of learners, including any visual tools or learning aids.

In light of the following statistics, this is clearly a problem. According to the Visual Teaching Alliance, the majority of secondary level instruction - around 80 percent - is delivered aurally, even though only 10 percent of the general population prefers auditory learning.8 This is even more surprising given that around 65 percent of the population is made up of visual learners.9 This high percentage makes sense considering


9. Ibid.
90 percent of the information that enters the brain is visual. These statistics should be considered within the context of the collegiate voice studio.

To validate the importance of different types of learning and teaching in the voice studio, it is necessary to verify whether visual stimulus has any effect on the way people perceive music. Studies have confirmed that visual stimulus can affect the way a person hears music. Research has indicated that observers place a higher quality value on performances they can see. A study conducted in 2009 by Boltz, Ebendorf, and Field, determined that “visual displays extend their influence by altering the perceived acoustical parameters that typically convey emotions within music.” According to this research, musical perception is affected by visual stimuli, and it can affect the listener’s perception and auditory memory of music.

It is therefore important to determine how voice teachers are utilizing visual stimuli in the studio. Based on a survey of today’s vocal pedagogy literature, the tools being used in voice studios that engage students in visual learning are mirrors, anatomical models (mostly of the larynx), spectral analysis, modeling and scores. While modeling and mirrors are often used with success, they are generally used to address technical issues visually manifested outside the body. Mirrors can help adjust posture and relieve


12. Ibid, 44.

13. Ibid.
tension, but they do not address what is happening on the inside of the body. Modeling is wonderful for showing a student what proper technique can look like, but it can sometimes result in students trying to force certain shapes or sensations. This can encourage excess body tension. Furthermore, all of these stimuli are based on explicit or conscious learning, instead of implicit or subconscious learning, an approach found to be more beneficial for learning motor skills. Currently, computer programs exist which show students and teachers a spectral analysis of their sound as they sing. This interesting visual model provides valuable information with regard to the resonance and quality of a student’s sound; however, it is not readily available for most students, and can be difficult to read and understand for beginning singers.

Scores are the most universally used visual stimulus in the voice studio, but they come with their own problems. Scores used to teach Western classical, music theater, and jazz styles of singing are written almost exclusively in the Western traditional style of notation. Reading this style of notation has become the standard if a performer wants to learn music and work in the music industry. Scores are widely used, but if scores have any effect on the development of a singer, the way we perceive notation must be related to the way we perceive aural music. To support this statement, this study must address whether the perception of notation is a natural or a learned skill.

Several recent psychological experiments have focused on the relationship between notation and perception. Research conducted in 2009 observed musically untrained college students’ interpretations of musical notation: sound, silence, loudness, duration, and temporal order. After collating and comparing these results with past

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studies, the researchers concluded that non-musicians assume music will sound just the way it looks, iconic interpretation instead of symbolic representation. The results suggest that though some things are natural to human perception in standard notation, while others are not.\(^\text{15}\)

Music psychology researcher Robert Walker gathered data related to this subject in two separate studies in 1978.\(^\text{16}\) Both studies sought to find out if a perceptual bias with a systematic trend existed. In the first study, nonmusicians were shown symbols and asked to verbalize how they would be played. In the second study, the participants were asked to listen to sounds played on percussion instruments by the experimenter and draw a graphic to represent each sound. The results suggested that some parts of standard Western notation are arbitrary, where the sound is not directly represented by the graphic, and others are ordered, representing the sound directly and not requiring further explanation. The researchers further concluded that “non-traditional notational symbols are capable of direct phonetic interpretation through perception of correlation between auditory and visual space.”\(^\text{17}\)

This result is very exciting because of the many pitfalls in traditional notation that contribute to technical issues in singers. For instance, the obsession with the representation of “high” and “low” pitches on a staff can often cause physical tension,

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“reaching” for high notes and depressing the head for low notes), resulting in problematic laryngeal placement.

Furthermore, scores that venture outside of the Western traditional style of notation are seldom if ever used in the vocal studio today. Vocalises are always written in traditional notation, and pieces written with graphic notation are rarely discussed in the studio and programed into collegiate repertoire. There has been a trend of shying away from scores that are visually unfamiliar. Though some singers may find the unfamiliar look of these scores to be intimidating, they represent an important part of music literature and have the potential to be of great value as a teaching resource.

**Need for Study**

Students who prefer visual learning have fewer learning tools within the voice studio than those who prefer auditory learning. The devices that are often utilized seem to have limited availability or have technical consequences for a young singer. Vocal pedagogues should address this issue so that each student in a diverse group of singers is able to learn in the way that is most productive for him/her. Scores are imperative in meeting this need. Though a classical singer can be trained for a career without the use of mirrors, models, and software programs, it is nearly impossible to work as a classical singer without learning how to read and interpret a traditional, Western style score.

Though traditional scores are essential for young singers, in many ways, traditional notation is arbitrary and not symbolic, or intuitive. There are only certain

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19. Ibid.
aspects of notation that are intuitive, but even these aspects can hold pitfalls for young singers. One illustration is relative pitch. Relative pitch is the pitch of a tone as determined by its relationship to other tones in a scale.\textsuperscript{20} Studies show that relative pitch's relationship to the vertical axis is intuitive; however, this does not make scientific sense for someone who is learning the skill of singing. A vertical axis implies high and low, but the difference between a “high” pitch and a “low” pitch is the speed, or frequency, of the sound wave, not vertical space. Within the body of a singer, relative pitch is characterized by a change in muscular action causing a thickening/thinning of the vocal folds. There is nothing up/down, or high/low about it. Yet, an observer can still consistently see singers reaching for high notes with their chins and depressing for low notes. This visual image of high/low or up/down in this case has caused a physical action that can often result in a poorly placed larynx and tense sound.

Another example of this phenomenon is the element of legato. Voice pedagogues spend countless hours unlocking the feeling and execution of legato for their singers. This effect is often not intuitive for a singer and can initially be very difficult to achieve. When a singer sees music written on the page, the melody of song appears as a series of note-heads or dots. There is nothing about a series of small dots that is indicative of continuous, smooth sound or a steady stream of air. If anything, melodies written this way visually represent “note to note” or non-legato singing. In this way, notation can be frustrating if those dots are the only stimulus for a visual learner while practicing a legato exercise.

If traditional notation is indeed creating issues in the development of singers, nontraditional notation may be able to help to alleviate them. Pieces that utilize this notation could facilitate the development of new skills in a singer, especially a visual learner, and perhaps counteract some of the traditional technical issues that young singers face. Research on the utilization of visually nontraditional scores for the purpose of informing vocal instruction would provide new strategies for creating a more balanced voice curriculum that reaches a wider variety of learners.

In order to examine the utility of these scores in the collegiate voice studio, the following research questions will be considered. How can visually nontraditional scores facilitate different learning styles in the voice studio? How can visually nontraditional scores help a student develop into a well-rounded vocal artist? Is there literature utilizing this notation that is appropriate for singers with various levels of experience?
Chapter 2
Literature Review

To address the previously stated research questions, the literature reviewed for this study has been broken down into five categories: learning styles in vocal pedagogy; perception of notation; developments in notation and performance; acquisition of skills; and improvisation. The literature in the first category applies to research question one. The literature in categories two through four applies to research question two. Literature reviewed in categories two and three, and a list of specific scores, will be used to answer research question three. All literature discussed in this chapter is presented first by general category and then chronologically by publication date.

Learning Styles in Vocal Pedagogy

In the past few decades, music educators have been more closely examining learning science and its application to music learning. This has worked its way from the field of general education, to the music education curriculum, and finally into the private voice studio.

Robert Cutietta’s research as a collegiate music educator explores the possibility of developmental stages in college students, much like Piaget’s stages for young children.\(^\text{21}\) He first discusses William G. Perry Jr.’s work on the developmental stages of college students, and then applies them to his work as an educator of collegiate musicians. He indicates that the way students learn and process information at the collegiate level is often seen as static; however, Perry’s research suggests that it changes as students encounter new experiences. Perry divides this development into three general

stages and nine specific positions. Cutietta discusses only the general stages: dualism, multiplicity, and relativism.

At the time of high school graduation and entry into college, students are within the developmental stage that Perry calls “dualism”. During this stage, students analyze the world in opposites. They identify what they encounter as either right or wrong, good or bad. At this stage, students expect the teacher to provide knowledge. They place the responsibility of learning on the professor rather than taking ownership of the learning process themselves. They measure success with quantity over quality. This applies to pieces of music, assignments, and recitals. They judge a performance to be better if it is faster, higher, louder, etc. They are more concerned with how much they have learned instead of the quality of the information. Students in this stage expect the teacher to be an authority figure in the classroom and give direct instruction in a predominately lecture based format.

Cutietta asserts that this is the most difficult stage for teachers of applied lessons, or private instruction, because the collaborative nature of lessons seems strange to the student, who sees the professor as having all of the knowledge and sees him/herself as only the recipient of that knowledge. At this stage, it is also difficult to introduce different styles of music to students. Music that ventures outside the norm is seen as wrong because it breaks the rules. Because of this, the dualism stage is not an ideal time for teachers to introduce students to ethnomusicology or contemporary music. Though these students are set in a right versus wrong mentality, college is an environment where

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23. Ibid.
students find themselves suddenly challenged in their opinions by the diverse group of people in their new community. Not knowing how to process such a variety of differing opinions within a dualist mindset, students are compelled to move into a new developmental stage.

The stage following dualism is multiplicity. During this stage students began to “sense that some questions truly do not have answers.”24 They, therefore, begin to see all answers and opinions as being valid and equal. This is accompanied by questioning authority figures who believe otherwise. Cutietta believes that this stage is beneficial in the study of music because it is prone to subjective questions. Personal opinions determine value during this stage. These students do not like being taught with absolutes, and spend time and energy finding exceptions to rules. The best methods for teaching during this time are based on interactive, rather than lecture based, learning. This includes student motivated project research and essays based on personal interpretation. Assignments based in self-expression are particularly successful during this stage. Cutietta indicates that this is the best stage to introduce new types of music, or other unfamiliar things, to students because they are more open-minded and willing to defend their own personal interpretations. However, as students begin having to make logical decisions in their studies, they realize that decisions cannot be made if every option is equally valid. This instigates another transition.

The last stage of learning development in college students is called relativism. In this stage students realize “diversity of opinion derives from a variety of sources and can be judged in context on the bases of logic, analysis, comparison, and… personal

values. Knowledge is relative and judged by its quality and rather than its quantity. Cutietta states that students in this stage begin to appreciate many different kinds of music and learn to place them in a hierarchy. The responsibility of learning becomes transferred to the student. This is reflected in the students’ preference for group discussions and individual research. Students judge the quality of teaching based on their personal growth and cognitive stimulation. Cutietta stresses that not all college students will reach this stage during their undergraduate education.

Don Ester also stresses the importance of learning style consideration with a focus on its application within a choral setting. In his article “Taking Advantage of Learning Styles in the Choral Rehearsal,” he confirms the current mode of thinking that most people have a preference for learning by either hearing, seeing, or doing. He refers to these teaching styles as visualization, audiation, and locomotion. With regard to visualization, Ester stresses the importance of using visual aids (symbols written in music, writing on the board, modeling, etc.) and mental images to introduce new concepts to visual learners.

Katherine Verdolini's research echoes these ideas while referring to the disproportionate way learning science and physical science have been applied to voice

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26. Ibid.


28. Ibid.
teaching.29 She contends that, thus far, physical science has had a greater contribution to advancements in the field. In her research, Verdolini argues that perceptual-motor learning — training your singing muscles — and book learning are very different. She states that these two types of learning/memory are often referred to in research as procedural/implicit, meaning subconscious learning, and declarative/explicit, meaning conscious learning. Verdolini stresses that over the past century, studies have revealed that motor learning relies heavily on non-conscious processing or procedural/implicit learning. She points out that some studies have even “indicated that explicit verbal instructions about mechanics are useless or even harmful to learning.”30 Experiments that have examined motor learning and implicit memory have reported that sensory or perceptual processing is key, not verbal processing. Verdolini claims that this information does not match the way voice pedagogues teach in the studio, which is often filled with too much verbal feedback and not enough experience.

Verdolini refers to Tim Gallwey’s book, “The Inner Game of Tennis,” which states that simply noticing what is happening during singing can encourage sensory processing by drawing attention to certain sensations.31 She believes this can be achieved through visual models as well. Research supports that success is also closely tied to student cognitive effort, claiming that too much teacher feedback instead of self-correction can get in the way of skill acquisition. Verdolini makes another valid point

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31. Ibid, 47-51.
stating that if a student is “trying too hard,” the implicit processing becomes explicit, making the skill more difficult to gain.

The relevance of the consideration of learning styles within the private voice studio is further confirmed by Carl Swanson’s research, which states that good educators adjust their teaching to fit the needs of students. In his article, Swanson lays out what the visual, auditory, and tactile/kinesthetic types might look like within the setting of a voice studio. He describes a visually oriented voice student as one who prefers to learn melodies from written music rather than by ear, takes notes and draws picture while learning, pays close attention to body language and facial expression, and gets distracted by visual disturbances during performance. He describes a tactile/kinesthetic voice student as someone who actively explores their environment while learning and may have a hard time sitting or standing still.

In addition to the three learning styles mentioned above, Swanson references other forms of categorizing learners. He cites Howard Gardner’s Theory of Multiple Intelligences which include the following: linguistic, logical-mathematical, bodily-kinesthetic, musical, interpersonal, intrapersonal, and spatial. Anthony Gregorc’s theory of Mind-Styles, which breaks down adult personalities into concrete-sequential, abstract-sequential, concrete-random, and abstract-random, are also mentioned. Swanson advocates for finding a student’s learning style early through questionnaires and adjusting voice teaching to serve their needs.


33. Ibid.

34. Ibid.
Lynn Helding’s research explores the eternal struggle between the scientific and the intuitive schools of vocal pedagogy. In her background research, Helding points out that the study of motor learning, which includes voice pedagogy, has expanded since the 1940's beyond mere physical education and has branched into neurophysiology, psychophysiology, and learning and information theory. She defines motor learning as "a several step process by which muscular skills are acquired, retained, and ultimately repeated automatically." She also divides this into five components, describing it as: 1. a process, which is 2. inferred, leading to 3. relatively permanent changes in 4. potential, due to 5. practice/exposure.

Helding further points out several aspects of this learning process that plague young singers. One is the difference between permanent vocal change and temporary performance shifts. Because of the nature of motor learning, students must experience an improvement or sensation once and then receive the guidance of a teacher on multiple occasions to understand how to recreate that moment, turning it into a permanent change. For this reason, master classes and breakthroughs can be incredibly frustrating for voice students. The first situation leaves them unable to recreate the moment without further guidance from the visitor, and the second creates a temporary destabilization in the voice while the new skill is being stabilized, making the student feel insecure. Additionally, the author points out that a negative performance or experience can actually be a positive


36. Ibid, 417

sign that a student is working through a transitional period during which they are stabilizing new technique.  

Much of Helding’s article discusses the conflict between using controlled and automatic processes. Control process is a form of teaching in which the teacher draws attention to a student's action and helps them to change that action. Automatic process is a form of teaching in which the teacher avoids drawing direct attention to an action and works more with psychological responses. Throughout the article, Helding advocates a balance of both types in voice teaching. Each can be beneficial as well as harmful. Control process can be harmful since drawing direct attention to a physical aspect of singing can often cause tension in voice students, or cause students to overthink. Additionally, asking more advanced students to “try harder” to do a certain physical act can increase tension and get in the way of building trust for the skills they already have, which can lead to “choking”. Automatic process can be harmful as well, since metaphors and psychological thoughts may not mean the same thing to both teacher and student. There is even research supporting the finding that self-correction has the highest retention rate and is therefore the most beneficial way of acquiring skill.

In support of intuitive learning, Helding states that "Left-brain thinking, which tends to be analytical, often stifles biomechanics; therefore commands that highlight mechanics are tracked into a region where they are lost in translation and smothered. Alternatively, intention that focuses on creative process and sensory information, thought


39. Ibid.

40. Ibid.
to be the domain of the right hemisphere, is conductive to biomechanics.”

This implies that intuitive, emotionally expressive teaching triggers an area of the brain in which motor learning takes place. This does not mean that drawing attention to learning is bad. Research supports using focused direction in learning. However, it also argues that an external focus is more beneficial than internal focus - drawing attention to the action itself - which can inhibit both immediate and long-term learning. Studies even indicate that too much teacher feedback can detract from learning. Lastly, Helding argues that though the science of voice teaching must not be ignored, there are other qualities that are necessary in order to develop into a complete singer: creativity, expression, acute psychological insight, interpersonal warmth, and charisma.

Perception of Notation

When considering how notation affects the way singers perform, it is vital to examine the ways in which visual stimulus and specifically notation affect the way people perceive music. A study conducted by A. J. Cohen in 1993 confirmed what current research has supported; musical soundtracks can “influence…interpretation and [memory] of visual information.”

Furthermore, several studies have indicated that


42. Ibid, 417-428.

observers judge the performance of an experienced musician to have a higher quality if they can see the performance while they listen.  

Similarly, a study by John Geringer on reactions to excerpts from Disney’s *Fantasia* showed that observers had a “greater emotional involvement” in musical/video excerpts than solely musical excerpts. This was “primarily attributed to a composition’s tempo, instrumentation, and dynamics.” This means that participants, for instance, described a video excerpt to be happier because it was faster or louder even though both the video excerpt and the purely audio excerpt were musically identical.

This research instigated a study done in 2009 by Marylin Boltz, Brittany Ebendorf, and Benjamin Field, during which researchers sought to find out if “visual displays extend their influence by altering the perceived acoustical parameters that typically convey emotions within music.” The experiment was broken into two parts.

In part one, five musical excerpts — all in major mode with a narrow pitch range, predictable rhythm and moderate tempo — were selected and described by researchers as “ambiguous” and relatively “unknown.” This indicates that they had no obviously positive/negative associations to the average listener. A set of movies and still photos played in a slideshow format were also selected and classified through specific testing by affect. They were deemed as either positive or negative to the average observer. Researchers further described them as moderately arousing and unknown.

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45. Ibid, 45.

46. Ibid.

47. Ibid.
The five ambiguous musical selections were matched at random with two videos - one positive and one negative - and two photo montages - one positive and one negative - with one control melody matched to no visual stimulus. Sixty participants, mostly non-musicians, were asked to watch/listen to all five matches, one being music only, and rate them separately in terms of affect, activity and likeability. The results showed that musical samples paired with positive imagery were judged as more positive, active, and likable, while the opposite was true for those paired with negative imagery. Furthermore, data showed that positive visual stimuli had a greater effect on perception than negative visual stimuli. Participants described music paired with positive imagery as “louder, faster. [and] more rhythmic.”

Part two of the experiment surprised participants by asking them to listen to two melodies and choose which melody was identical to the one they heard before. In each set, the first was the original melody played during part one of the experiment. The second melody in each set was the same melody altered slightly in pitch, tempo, or both to match the positive/negative imagery paired with it in the beginning. Results concluded that positive/negative stimuli did affect the acoustical memory of the participants, but again, positive stimuli showed a greater affect than the negative. In addition, memory of tempo was the most affected. This study supports the assertion that visual stimuli can affect one’s perception and acoustical memory of a piece of music.


49. Ibid.
Notation is one form of visual stimulus that singers come into contact with every day. Several experimental studies have been conducted with regard to notation. Robert Walker gathered data related to this subject in two separate studies in 1978.\textsuperscript{50} During the first study, 155 non-musicians, age nine to adult, were shown a graphic and asked to verbalize how each graphic would be played. The study sought to find out if a perceptual bias with a systematic trend existed.

Results showed that most participants equated the size of the figure with loudness, i.e. the larger the symbol, the louder the sound. The rest of the results based on each image’s other physical traits corresponded to age, showing more agreement in cross-modality, a direct correlation between visual stimulus and the perceived musical sound, among persons 15 years of age or older. Based on this work, the second study targeted 437 non-musicians ages 8 to 15. Participants were asked to listen to sounds played on percussion instruments by the experimenter and draw a graphic to represent each sound. Results showed that size was again associated with dynamics. Additionally, results regarding changes in pitch were consistent with the previous study, related by most participants to the vertical plane. This was not true of the younger participants who associated pitch with size.\textsuperscript{51}

This study brought out an interesting point. Most of the musical examples, incorporating a change in pitch inspired graphics that were “arbitrary,” meaning they were not directly represented by the graphic and would have needed further explanation. Musical examples incorporating a change in volume were mostly categorized as


\textsuperscript{51} Ibid, 31.
“ordered,” meaning they had a direct representation of the sound not requiring further explanation.\textsuperscript{52} Though there were differences based on age, results were more uniform among the adults. The author concluded that “nontraditional notational symbols are capable of direct phonetic interpretation through perception of correlation between auditory and visual space.”\textsuperscript{53} With regard to the study above, Robert Walker said this about notation: “its visual parameters do not in themselves enable the perceiver to read off intended relationships and changes in terms of sound.”\textsuperscript{54}

Research revealed further study on how observers instinctively interpret traditional musical notation. A study done by Siu-Lan Tan at a Midwestern college in the USA in 2009 observed musically untrained college students’ interpretations of several aspects of musical notation: sound, silence, loudness, duration, and temporal order.\textsuperscript{55} The goal of the study was not only to collect data on the students’ ideas, but also to decide if those ideas were common or unique to the individual. Additionally, subjects’ interpretations were compared to standard interpretations of music notation. A previous study, done by Tan in 2002, revealed that people’s interpretation of music notation did not always match standard conventions because participants believed that notation should sound the way it looks.\textsuperscript{56}


\textsuperscript{53} Ibid, 24.

\textsuperscript{54} Ibid, 21.


\textsuperscript{56} Ibid, 8.
The 2009 study targeted 50 undergraduate students at a Midwestern college with an average age of 20 who were asked to take a questionnaire regarding their interpretation of standard music notation. The students were asked to choose which symbols from a table represented sound, silence, and loudness, and then to arrange them by value. They were also asked to identify factors that affect pitch, timbre, and temporal order.

After collating and comparing these results with past studies, the researchers gleaned that non-musicians assume “iconic interpretation” instead of “symbolic representation;” they believe music will sound just the way it looks. Vertical space is associated with pitch, horizontal space with rhythm and tempo, size with loudness, and shape with timbre. The authors of the study concluded that though some things are natural to human perception in standard notation, others are not. However, these unnatural, learned elements of reading allow musicians to see and hear music and its relationships in different and more detailed ways.

**Developments in Notation and Performance**

When considering how musical notation affects trained performers, it is necessary to look at its development. The evolution of musical notation over time has been slow and specific. Researchers correlate its development with the desire for identical repetition in performance. Notation’s first developments began as a way to unify worship through

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58. Ibid, 19.

chant in the Christian church. It allowed congregations to perform chants in a uniform manor, even though churches were not located in the same geographic area. As time passed, the need for repetition remained, but instruments, music theory, and style continued to evolve. These innovations created a need for more detailed notation to facilitate accurate repetitions in performance.

The complexities and new issues created by advancements in musical style and composition have led many music theorists, composers, and performers to examine the use of notation in modern music and how it relates to contemporary performers. Kurt Stone highlights the complexities involved in trying to portray new ideas with standard notation. In his discussion in Problems and Methods of Notation, Stone references vocal notation and its innovations and details. He points out that in past periods of strict performance practice, composers used scores as a “map designed to guide the performer toward the composer’s artistic vision.”

However, today’s scores are so detailed that instead of fulfilling their intended purpose, they set out such a detailed manual of instructions that “performances are mere stabs in the directions of the composer’s envisioned perfection of execution.” Furthermore, they leave very little room for a performer’s interpretation. David Behrman echoes this sentiment in the same book. He deems the musicianship of a performer as an important quality in the realization of a score; however, the detail found in today’s


62. Ibid.
traditionally notated scores leaves very little if any room for interpretation by the performer.63 Both authors attribute this phenomenon to an increase in writing solely electronic music, since composers have complete control over the performance product of electronic music.

**Acquisition of Skills**

Though the study of using nontraditional scores in the voice studio is still very new, there has been research suggesting their correlation to the development of certain skills. The inadequacies of traditional notation and the need for nontraditional scores in the representation of singing are mentioned in multiple studies.

Robert Walker’s contribution to this research stemmed from his previous studies in music perception.64 As was previously stated, Walker discovered that traditional Western notation is more of a pneumonic representation than a metaphor for the sound. In more recent studies, he explored what implications this discovery had when related to a particular culture. He contends that traditional Western notation holds certain cultural biases that make it inappropriate for all types of music. Through his studies, he seeks to develop a system of notation that is cross-cultural. Though he recognizes the inclusion of varying types of notation in contemporary music, he argues that most of this notation is also arbitrary and not metaphorical. He deems any symbolic representation of sound, not

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metaphorical, as having a cultural bias. Additionally, he claims these new notations are too complicated and need too much explanation to be understood.\(^{65}\)

In his brief review of the history of western notation, Walker recognizes melodic contour as the central component of notated sound.\(^{66}\) He states that purity of pitch is not imperative for all cultures and types of singing. An example of this is found in the way speech relates to song in various cultures. There is an inherent difference between musical pitch and vowel pitch. This is confirmed by examinations of patterns in infant voice recognition. Therefore, music based on speech-like vowel pitch, such as that in indigenous cultures, is inherently different from that based on musical pitch and cannot be represented in the same manner. This has implications for the tone color of a sound. Walker argues that tone color is not part of traditional notation, but could be helpful to professional performers when replicating sound across cultures. In general, Walker points out that his previous studies on how non-musicians expect sound to be represented suggest that there is a basis for a more metaphorical representation of sound.\(^{67}\)

Another researcher, Stephanie Stadler Elmer, has focused her work specifically on representing singing sounds in the most faithful way. She describes singing as an “unstable patterning of vocal sounds.”\(^{68}\) Like Walker, Elmer states that “musical training

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66. Ibid.

67. Ibid.

implies strong biases towards culturally established meanings and symbols which may or may not be present in the phenomena.”69 She argues that even though pitch is often the first and main focus of analyzing a vocal performance, deviations in pitch are recognized by listeners as artistic and expressive, especially in terms of vibrato. This is not often represented in standard notation. Another limitation of standard notation is the difficulty inherent in notating unfamiliar sounds. Within traditional notation, there is no method for representing sung sounds that are outside of cultural norms. As a result, listeners often resort to verbal descriptions that may or may not be commonly interpreted by all parties involved. It is a shared cultural background between two or more parties that makes this type of description possible, but the communication across cultural boundaries is limited. Hence, there is no current way to clearly and visually show someone a sound created outside of their cultural norm.70

Elmer proposes several important elements when searching for culture-free ways of describing singing. One is recognizing the prolongation of vowels over time.71 Another recognizes that singing in children generally stems from the desire to play with their sound, usually involving body movement of some sort. Finally, it is important to note that music is often used to create or recreate an affect in oneself or someone else. Aside from


70. Ibid, 23-42.

these ideas, all song is considered to be “shaped sounds that express somehow cultural conventions”.  

Elmer states that when song is invented freely, impromptu rules are created to govern the sound. In contrast, reproduced music follows pre-established rules. She concedes that elements of both are found in every performance. Even when reproduced and written down, music generally leaves certain elements to the discretion of the performers, allowing them to stray from preconceived rules for the sake of interpretation.

In addition to the shortcomings of traditional notation, research has found that using nontraditional scores can fuel the acquisition of certain skills. A study done by Myung-Sook Auh and Robert Walker in 1999 fits this description. The purpose of this study was to observe the differences in compositional strategies and musical creativity by those using both traditional and nontraditional notation for composition. Participants included thirty-eight seventh-graders in South Korea, all of whom had high musical, academic, and verbal achievements. The participants were given 20 minutes to compose a short solo piece for any instrument and then perform it. They subsequently answered a questionnaire regarding structure, expression, motivation, judgments, and decision making in their pieces.


73. Ibid, 13-20.

Researchers used results taken from this data and feedback from a panel of judges to examine each piece’s compositional strategies and musical creativity. Musical creativity in this experiment was defined as “the ability to think divergently in creating music to come up with original, structured, and artistically sensitive music.” Both qualitative and quantitative analyses were conducted on the data. The results reported that creativity levels were significantly higher in compositions using nontraditional notation. These pieces consistently had a more diverse use of strategies and more evidence of divergent thinking. Also, the composers of traditional scores were more concerned with structure, while the nontraditional composers focused on expression and uniqueness.75 This study shows that the use of graphic notation in an educational setting can stimulate creativity in students.

A study done in 1999 by Yvette Sullivan and Robert Cantwell “investigated the planning strategies of university music students learning a traditionally and nontraditionally notated score.”6 Fifty-three music students from an Australian University participated. They were asked to read two scores, line by line, from a computer, while their reaction times were recorded. Within each set of scores, one was traditionally and one was nontraditionally notated. They were then given the full score of each and asked to verbalize their plan for preparing the score for performance. The learning strategies were categorized by level as either deep, meaning understanding in a structurally


complex way/big picture, or surface, meaning understanding in a structurally basic way, breaking down into smaller parts. The strategies were further categorized by low, meaning repetition, mid, meaning altering/chunking/scanning, and high, meaning interpretive/patterning/prioritizing. The results indicated that participants reading the traditional scores showed a greater use of high level strategies. Participants reading the nontraditional scores had a slightly lower number of high level strategies, but more diversity in the strategies being used. This group of participants also showed a significantly higher level of deep learning. This means that their approach to learning was more open-ended and had a “greater possibility of imposing personal meaning on the data being analyzed.”

Arguably the most practical study of visually nontraditional scores in voice teaching, however, was conducted by Jeannette LoVetri and her colleagues. LoVetri tested the visual and kinesthetic effects of melodic contour on singers. In her research, she found that a singer’s head position tended to be raised and lowered depending on the contour of the line being sung. She tested a group of professional singers with a traditionally notated version of the first phrase of “Somewhere Over the Rainbow.” Participants were first asked to sing it while letting their head follow the contour of the melodic line, then only with a raised head, and finally only with a lowered head.


79. Ibid.
After this was completed, the singers uncovered the last score, which showed inverted intervals of the melody. They were then asked to allow their head to follow the contour of that score while singing the original melody. Results showed that the last exercise produced the most effective production of sound and tone color, indicating that visually altered notation can be used to disengage classical and musical theater singers' head movements from the melodic contour of a musical phrase.\textsuperscript{80}

\textit{Improvisation}

The nature of nontraditional scores, especially graphic scores, includes a level of indeterminacy. This means that the performer will be using some degree of improvisation in the piece. Improvisation is a musical skill that can be learned and honed. Though several studies have been done in implementing jazz and theatrical improvisation into music curriculum, free vocal improvisation in adults outside of jazz has been neglected. Still, current research has suggested a wealth of benefits that can be derived from its inclusion in pedagogy.

In 2009, Judith Lewis conducted a study to explore the nature of the inner dialogue created in improvisation.\textsuperscript{81} Since group improvisation is often referred to as a conversation, Lewis wondered whether or not solo improvisation would constitute a monologue. Her 18 month study consisted of teaching weekly individual lessons in improvisation to three accomplished pianists over the course of a semester. Lessons were


focused on developing a personal voice for each student. She gathered data from her interactions with each pianist during lessons and their developing reflections and skills from each week. From her observations, Lewis concluded that solo improvisation was not a unidirectional monologue, but rather a two-sided inner dialogue.82

There were many times during Lewis’s lessons, when a student would describe the awkward feeling of creating an unexpected sound and then having to decide how to respond to it. Lewis explained where this sensation comes from. “Once externally embodied, [a] thought is related to [by the performer] differently than when it was merely floating around in [their] head—it has become the material of dialogue.”83 As Kanellopoulos (2011) writes, “the process of improvisation can be seen as the musical analogue of the unfinalizability of selfhood, that is of otherness within a person, [of] her ability to be always another, unpredictable and free, to act and to remain the other and another to all others and even to herself.” Generally, the pianists learned how to think on their feet and interact with what was happening in each performance.84

In conjunction with the inner dialogue, Lewis noticed the development of skills in her students such as decision-making, divergent thinking, willingness to embrace ambiguity, risk-taking, problem-seeking, accountability, and self-assessment.85 Decision-making skills were related to the process of making responsive choices within the inner dialogue. Divergent thinking and embracing ambiguity were related to the fact that pieces

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83. Ibid, 257.

84. Ibid, 255-261.

85. Ibid.
could not be planned. The performers had to respond to inner-dialogue events in real
time. Risk-taking and problem-seeking were developed as students learned to calmly
recognize unintended sounds and discover new ways to utilize them. Self-accountability
and assessment skills were gained through necessity. There was no score or person in the
room who knew more about the music being played than the student playing; therefore,
they had to make their own assessments about their work and quickly move on from
unexpected results. Lewis states that the need to self-reflect during a performance “forced
[students] to confront deeply engrained musical assumptions and stereotypes.”

Accepting unexpected events and finding ways to creatively incorporate them are
beneficial artistic skills. Green (1988) describes this as “the capacity to surpass the given
and look at things as if they could be otherwise.” Students gained the ability to change
their situation. As Freire (1970) describes it, they begin to view the world “not as a static
reality, but as a reality in process, in transformation.”

Of all the sociocognitive skills acquired by those who practice improvisation,
creative thinking is the most often identified. Webster (1990) defines creative thinking in
music as “a dynamic mental process that alternates between divergent (imaginative) and
convergent (factual) thinking, moving in stages over time.” Furthermore, Gruhn (2005)
has found this skill to have a positive effect on intelligence, decision-making, and

86. Judith Lewis, “Dialogue as a way of knowing: understanding solo improvisation and its
implications for an education for freedom,” Psychomusicology: Music, Mind, and Brain 23, no. 4

87. Ibid.

88. Ibid.

89. Ibid.
problem-solving skills. The relationship between improvisation and creative thinking has been most recently investigated in children.90

In a 2009 study, Theano Koutsoupidou and David Hargreaves observed the effect of improvisation instruction on children’s creative thinking in music.91 Two groups of six-year-old children were selected for the study. One group was given improvisation instruction over the course of six months. The other, a control group, was given standard music instruction by the same instructor. Quantitative surveys were given to both groups before and after the six-month instruction period. Results of the study showed that creative thinking skills in music were significantly increased for the experimental group, especially in the areas of “flexibility, originality, and syntax.”92

In addition to the sociocognitive skills listed above, studies have shown that improvisation has a positive effect on self-efficacy and self-image in relation to music. This in turn helps students cope with music performance anxiety, or MPA. This plays an important role in performance.

A study conducted by Youngshin Kim in 2003 tested this concept on college musicians.93 Thirty female college pianists with various levels of untreated MPA participated. Students completed a lab performance, pre-test, six weeks of music therapy


92. Ibid.

intervention, another lab performance, and a post-test. One of the groups was treated based on improvisation-assisted desensitization, using improvisation and relaxation exercises to gradually re-associate stressful performing situations. STAI, State and Trait Anxiety Inventory, and MPAQ, Musical Performance Anxiety Questionnaire surveys were utilized along with index finger temperature to collect data on anxiety levels. Despite the type of treatment each group received, all groups played standard repertory pieces during lab performances. By the end of the study, participants in the improvisation-assisted desensitization group showed a significant decrease in tension and a general increase in finger temperature. These results along with the positive written feedback from participants indicate that improvisation-assisted desensitization can contribute to the treatment of MPA. Kim states that success of the treatment is largely based on the personality and experience of the musician. Additionally, the participants who used improvisation as a warm-up or focal shift during their regular practice found more success than those without previous exposure.94

In 2011, David Hirschorn conducted a study on the effects of improvisation training on thirty-five adolescent choral musicians.95 Students were engaged in daily improvisation sessions for 16 weeks. During sessions, participants were slowly desensitized to any anxiety involved with improvisation. They worked progressively from smaller group work to eventual solo vs large ensemble exercises. Data was collected from a quantitative self-efficacy survey created for this experiment. This survey was


administered five times throughout the course of the study along with interviews, written reflections, and field notes. Two sources - mastery experience, measured by increased vocal range, and peer vicarious experience/community support - instigated an increase in self-efficacy for participants. Musical/creative growth and self-regulatory actions increased positive musical self-image. Kannelloupolus (2007) describes identity and improvisation this way: “improvisation entails a particular approach to and conception of identity through actions that do not demonstrate what one has already gained, but rather at surrendering to the openness of discovery.” An increase in positive self-image and self-efficacy contribute to a reduction in MPA symptoms.

In a similar study done by Robert Allen in 2011, 36 elementary, middle, and high school students took part in an improvisation-based treatment for MPA. The students were divided into three groups. The first group was given individual improvisation instruction sessions once a week for six weeks and played an improvised piece in the final performance. The second group was given both improvisatory and traditional instruction and played one improvised and one traditional piece in the final performance. The third group was given only traditional instruction, and played one traditional piece in the final performance. Sources used to collect data included MARS, STAIC, subject reviews, a parent questionnaire, and performance videos. Results supported the conclusion that, of the performers in all groups who reported a consistently medium to


high level of anxiety, groups one and two had the lowest levels of anxiety in the final performance.  

Furthermore, one study points out the importance of learning listening skills from improvisation. In 1999, Keith Sawyer reviewed data he took from a six-year study involving observation and participation in both Chicago-style improvisational theater and jazz group improvisation. Within this study, he points out that improvisation is not just an ‘anything goes’ art form, but there are structures, motives, and transitions used in very specific ways. When an actor or musician begins a thought or phrase, there is already a general road map of an idea, structure (motive/schema), or technique that is implied to the other performers. It is then the other performers’ task to recognize this from previous knowledge, say “yes” to it by affirming its validity, and then choose to develop or interrupt it. To do this, improvisers need to be expert listeners with an advanced perception of the present moment and their relationship to it. The development of detailed listening skills can be beneficial in both musical ways, such as knowing how the piece as a whole is communicating, and dramatic ways, such as picking up subtle dramatic cues from a colleague.


100. Ibid.

Chapter 3
Method

While the act of visually changing notation for a student is occasionally mentioned as a teaching tool in voice pedagogy books, very little research has been focused on this topic. Those studies that have been done address only vocalises, and give little to no background or reasoning for the study.

To find out if these scores address the study problem effectively, the first research question must be explored. This question addresses how visually nontraditional scores can facilitate different learning styles in the voice studio. Three main research databases were utilized to find literature on this topic: Google Scholar, ProQuest Dissertations and Theses, and International Index to Music Periodicals. Search terms such as “learning styles and singers,” “learning preferences in the voice studio,” and “visual learning and singers” were used to locate literature. The results consisted mostly of articles from peer-reviewed journals, all discussing different learning/personality styles and how they relate to teaching music.

First, each system of categorizing the learning styles that was found in the literature was listed. They were accompanied by characteristics that may be displayed by the student in the context of the voice studio. Then, the needs and descriptions of each student type were be used to evaluate the relevance of using visually nontraditional scores.

The second research question explores how the use of visually nontraditional scores can help a voice student develop into a well-rounded artist. This study defines a well-rounded artist as a singer possessing both technical skills, such as vocal technique and score preparation, and nontechnical skills, such as creativity and intrapersonal skills.
Most of the vocal treatises reviewed for this study focus solely on issues of vocal technique. Many mention the need for other nontechnical skills to be cultivated in a performer, but do not suggest ways of developing them within the context of the voice studio. To answer this research question, literature has been gathered that relates nontraditional scores to the development of both technical and nontechnical skills.

In order to identify skills that will be gained or strengthened using visually nontraditional scores, it is necessary to consider the general population's perception of notation. To address this topic, terms such as "notation and perception" were used to search ProQuest dissertations, psychology of music journals, JSTOR, and Google Scholar. Results showed that during the past few decades, researchers have conducted several studies in the field of music psychology, exploring notation and the way it affects our perception of music. These effects were catalogued and followed by a discussion on how they may or may not be pertinent to singers. A collection of essays by relevant theorists and composers regarding notation and its evolution were also utilized to determine the effect notation has on performers today.

A second group of music psychology studies were consulted that compare how traditional notation and graphic notation influence musicians. To gather these studies, search terms such as "graphic notation," "nontraditional notation," and "notation and singers" were used within ProQuest dissertations, Google Scholar, and music psychology journals to locate relevant literature. The resulting studies encompassed both technical and nontechnical skills. A review of these studies was done to gauge their relevance to singers and determine what skills and benefits are uniquely acquired through the use of visually nontraditional notation.
The third research question investigates how this tool can be utilized in the performance environment. This was accomplished by synthesizing a list of vocal solos that have a visually nontraditional aspect to their scoring. Since there is no existing catalogue of this repertoire, the list was taken from the suggestions of experts in the field and personal experience. The list is meant to be a sampling of possible repertoire choices and not an exhaustive list. The repertoire was then divided into difficulty levels 1, 2, and 3. Level 1 repertoire is appropriate for freshman/sophomore undergraduate singers and above, level 2 is appropriate junior/senior level singers and above, and level 3 is appropriate for graduate level to professional singers.

Difficulty level was determined based on categories of length, notation specificity, language, determined range, visual familiarity, and difficulty of interpretation. Length refers not only to the length of the score, which can complicate learning, but also the timed length of the piece, which affects vocal stamina. Notation specificity refers to the quantitative indeterminacy inherent in the piece. Pieces that have more detailed notation were judged to be harder than those that are more indeterminate, granting more freedom to the performer. Language was taken into consideration by assuming that each singer’s first language is English and that they have the most singing experience with English and Italian texts. Determined range refers to both actual notated pitches and implied tessituras, keeping in mind that those pieces that remain high or low for an extended amount of time can be challenging.

Since the brain organizes information based on what it already knows, visual familiarity also played a role in determining difficulty, assuming that the less familiar it is, the more challenging it is. Interpretation refers to the necessary ability of the student to
interpret the piece aside from basic musical execution. This includes decisions about character, timbre, and dynamics. At least one nontraditional piece was selected to represent each level of difficulty and discussed based on these criteria. This research was then used to draw conclusions about which skills can be obtained by studying each piece specifically.
Chapter 4
Learning Science and Vocal Pedagogy

The past few decades have contributed a body of research regarding learning styles and how they are related to music classrooms. Likewise, this topic has begun to be applied to vocal pedagogy. This research can be organized into three categories: developmental stages in college age learners, learning styles in vocal pedagogy, and brain processing with regard to the skill of singing.

Developmental Stages

Within the field of education, several pedagogues have studied the developmental stages of children and adolescents. These stages have been deemed valuable by educators because of the information they share regarding how students process information and their preferences for learning. It would be difficult today to find an educational program that does not at some point investigate Piaget’s developmental stages of young children.\(^{102}\) Successive generations of researchers have adapted Piaget’s theories first to college-aged learners in general, through the work of William G. Perry Jr, and then to music students specifically, with the work of Robert Cutietta.\(^ {103}\)

Cutietta’s focus on the stages of dualism, multiplicity, and relativism and how they relate to classroom music teaching gives pedagogues clues as to what type of teaching and assignments might be best at certain levels of stages of development.\(^ {104}\)

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103. Refer to Table 1 in Appendix 1 for Cutietta’s Chart of Perry’s Developmental Stages.

It is also important to gauge how this information is applicable to vocal repertoire choices and the applied lesson environment.

The polarities inherent to the dualism stage are beneficial for freshman entering the voice studio. Freshman year is generally a time to start building a student’s vocal technique from the ground up. Thus, having a student who accepts a professor’s word as authority may help establish those skills more effectively. This may also make repertoire assignments simpler, since the student is looking to the professor for their best judgment. However, given that the voice is an instrument that cannot be seen and can only be felt by the students themselves, teaching voice must be very collaborative. At this stage it can be difficult to glean information from students or encourage them to self-assess their practice and performance.

For similar reasons, this may also be a difficult time to teach students to find repertoire on their own or introduce them to styles outside of their comfort zone. Though each student should be evaluated individually, this information suggests that freshman year may not be the best time to introduce students to visually nontraditional repertoire. Though it is prudent to consider these stages when determining teaching style and repertoire choices, Perry states that it is change and the experience of new things that stimulate the transition into a new stage of development. Thus, some brief exposure to unfamiliar styles and notations may help nudge a student into the stage of multiplicity.

105. Refer to Appendix 1 for Cutietta’s Chart of Perry’s Developmental Stages

According to Cutietta’s data, the stage of multiplicity, which generally begins sometime during the sophomore year, is an excellent stage for applied lessons.\textsuperscript{107} Students now prefer assignments where they can discuss and ascribe personal meaning, providing an ideal mindset for studying/interpreting the character within a piece. After one year of focusing on technique, this can be an appropriate time for students to begin focusing on such details. The students’ newly found appreciation for a variety of opinions and experiences also makes this a great stage for introducing unfamiliar genres and notation. Nontraditional notation is compatible with this stage’s more collaborative learning style, which is often subconscious and requires self-direction and assessment. According to Cutietta, some students may remain in this stage for the rest of their undergraduate academic careers, while others will move on to the stage of relativism.\textsuperscript{108}

It requires logic, analysis, and experience to make educated decisions about the quality of a piece of music. These skills are gained during the relativism stage of development.\textsuperscript{109} This stage is also characterized by a desire for personal growth and stimulation and a preference for student-motivated research projects, all of which are excellent for applied voice lessons. Students in this stage can effectively give opinions and make decisions regarding multiple interpretations of a piece of music. They also have the drive to dig deeper into a score and make it their own. This would be an ideal stage


\textsuperscript{109} Refer to Appendix 1 for Cutietta’s Chart of Perry’s Developmental Stages
for giving students the opportunity to choose their own repertoire, as well as encouraging them to find pieces within certain unfamiliar genres and styles.

Though the study and performance of nontraditional scores is not congruent with the demeanor of every stage of development, it fits well within the learning preferences of the multiplicity and relativism stages during which students spend most of their undergraduate years. Nontraditional scores are also useful as an unfamiliar stimulus that ushers students into the next level of maturity.

**Learning Styles in Vocal Pedagogy**

Aside from developmental stages, the work of current pedagogues has also related learning styles to the field of vocal pedagogy. In general, more research has been done in the field of physical science than in the process of learning. Still, many pedagogues praise the consideration and use of different learning styles within music education. This research generally refers to three types of learners: auditory, visual, and kinesthetic.

These three learning styles may look different when encountered within the voice studio. For example, auditory learners prefer to learn by ear, learning best through sound modeling and metaphors, whereas a visual learner may be tied more to a score, picture, or mirror. Kinesthetic learners rely on experience, which is often related to subconscious

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learning and self-assessment.\textsuperscript{113} Both of the latter traits are commonly associated with the interpretation of a visually nontraditional score, suggesting that such scores could be used to enhance the learning of students with both visual and kinesthetic preferences.

In his article, Carl Swanson mentions Dr. Anthony F. Gregorc’s work with “Mind Styles,” regarding adult learning personalities, breaking them down into four basic types: concrete-sequential, abstract-sequential, concrete-random, and abstract-random.\textsuperscript{114} Swanson’s article includes a unique and helpful table of teaching suggestions for each learning personality that highlights how one can relate to the student’s strengths and improve on their weaknesses.\textsuperscript{115} This table also describes how certain personalities prefer to prepare a piece of music. Some prefer to look at the big picture and add details later while others prefer to delve into details right away.

This type of information can be used to determine which pieces would be best for each student. For example, visually nontraditional scores are generally best approached from what the student recognizes, such as vertical and horizontal spacing, text, etc. This suggests that random learners might be more easily able to understand these types of scores in general. However, some repertoire, such as Berio’s \textit{Sequenza iii}, are hyper-detailed scores that require a great degree of subtlety and exact timing. The detail of these scores might more readily engage sequential learners. Concrete-sequential learners may find visually nontraditional scores more challenging because of their difficulty processing abstract concepts.


\textsuperscript{114} Refer to Table 2 in Appendix 1 for Swanson’s Adaptation of Gregorc’s Mind Styles.

\textsuperscript{115} Refer to Table 2 in Appendix 1 for Swanson’s Adaptation of Gregorc’s Mind Styles.
Processing Motor Skills

One interesting angle on voice education, explored through the work of Katherine Verdolini and Lynn Helding, is based on how people process singing as a skill. Learning to sing is a mixture of both subconscious and conscious learning and as such needs a balance of sensory and perceptual processing, which is doing and seeing, and verbal processing, which is discussing. These are not currently balanced in most voice studios today, which are more focused on verbal processing. Though the planning strategies for learning a nontraditional piece may require more initial discussion, the actual interpretation and performance of such pieces requires more sensory/perceptual processing. Therefore, using visually nontraditional scores could be a way to balance these two types of processing within the voice studio.

Singing is a motor skill, and motor skills are mainly processed in a part of the brain that houses the creative process and sensory information. Therefore, learning in these ways delivers information immediately to the correct part of the brain, better facilitating and promoting motor learning. Though this is not accomplished through verbal processing, visually nontraditional scores could increase a student’s creative and sensory processing and therefore enhance their motor learning. Additionally, automatic/subconscious processing can lend itself more to self-correction, a tool that has been found to have a greater impact on learning.


117. Ibid, 48.

Researchers are starting to apply learning science to collegiate music classrooms. Attention is being given to how the brain processes the skill of singing, suggesting the importance of subconscious learning and self-correction. New research centered on developmental stages in young adults gives us insight as to most appropriate times to apply new repertoire and teaching methods. Visually nontraditional scores could facilitate a type of learning that would not only reach visual and kinesthetic leaners more effectively, but also enhance certain developmental stages and create a more efficient process of learning and developing the motor skill of singing.
Chapter 5
Notation and the Well-Rounded Artist

Development of New Skills

In this chapter, the literature review in chapter 2 is utilized to determine how visually nontraditional scores can help a student develop into a well-rounded vocal artist. Again, this study defines a well-rounded artist as a singer possessing both technical skills, such as vocal technique and score preparation, and nontechnical skills, such as creativity and intrapersonal skills. Pedagogues agree that skills other than technical prowess are needed to become a well-rounded artist.\textsuperscript{119} After surveying the literature, it is evident that there is much to be gained from the performance and study of visually nontraditional scores. A number of these skills relate to shortcomings inherent in traditional notation. In this study, the term “standard notation” will refer exclusively to the standard Western style notation utilized in most art song and opera scores.

Shortcomings Inherent in Traditional Notation

As previously stated, some researchers have bemoaned standard notation, due in part to the difficulties it can create for performers. There is an inherent cultural bias in most styles of notation, including standard notation.\textsuperscript{120} An individual interprets notation based on their experiences. They impose style, ornamentation, etc. that is not written in the score based on what they have witnessed. This style may not be shared by someone from a different musical culture, creating difficulty in repeated performance. A more


intuitive form of notation could counteract this effect. This notation would need to be simpler, requiring less explanation for unfamiliar interpreters.

Robert Walker’s research, particularly concerned with the importance of melodic contour and tone color, insists that a more instinctual, or metaphorical, form of notation would make the duplication of sound across cultures and the sharing of musical ideas easier.121 Walker’s observations are insightful and relevant. If there were not a cultural bias involved in the interpretation of standard notation, singers could become more self-reliant in honing musical style and nuance. The exact timing of a grace note, regardless of when and where the piece was written, would be more self-explanatory. Changes in trills, appoggiaturas, and ornamentation would be clearly marked for the less experienced interpreter. Performance practice in general would be more universally accessible.

Pitch deviations, such as portamento and vibrato, are considered important vehicles of artistic expression, and yet only some are consistently and clearly represented in standard notation. Any changes in vibrato, for example, are usually marked by the words “senza vibrato” meaning “without vibrato.” Any other reference to vibrato in standard notation is uncommon. And yet, one often hears a performer begin in straight tone and “bloom” into the middle of the phrase. Straight tone singing is utilized heavily in the choral setting. Undergraduate singers often spend twice as much time in a choir setting as they do studying solo singing. Given that variations in vibrato and tone are used frequently in the performance of vocal music, it is surprising that these effects are not more specifically notated.

**Technical Skills**

One of the most practical arguments for the utility of visually nontraditional notation rests in the work of voice pedagogue Jeannette LoVetri’s study on how inverse melodic contouring can be used to disengage singers’ head movements from the shape or movement of the vocal line.\(^{122}\) This study differs from previous research in that it tries to play against our instincts. As previously stated, people naturally associate higher pitches with “up” and lower pitches with “down.” LoVetri’s research seeks to use this natural instinct to change the way the singer is responding to a melody by inverting the notation/contour of the melody.

This concept has been tested twice so far with positive results, including freer tone and more relaxed production of sound. If this is the case, there may be other technical pitfalls that can be eliminated through the use of visually nontraditional notation. This would allow voice pedagogues to work on the technical aspects of singing through the purposeful manipulation or design of notation, possibly eliminating communication barriers that often exist between teachers and students within the studio.

One of the most difficult skills to foster in young collegiate singers is preparation. Students often come into lessons not having thoroughly learned a piece of music. The preparation of vocal music has multiple layers that are often neglected by young singers. It is not enough to simply learn the notes and rhythms; one must also understand the style, phrasing and nuance of each line. Text also requires preparation, including proper singing diction, direct translation of a foreign language, and paraphrasing. If the piece is

from a larger work, the singer must understand the dramatic and musical context, which includes studying the character and his or her goals. In addition, singers must foster a personal connection and interpretation, deciding what the piece means to them. Navigating this type of preparation takes years to hone and understand. However, research suggests that the preparation of a score can be influenced by its notation.

Students preparing a graphic score utilize a greater variety of learning strategies and deeper learning than those preparing a traditional score. This includes the ability to make a more personal connection with the piece. It is important for singers to be able to encounter and interpret pieces on their own. Furthermore, personal connections and meanings aid performers in communicating with an audience.

**Nontechnical Skills**

Aside from providing an alternative to certain pitfalls in standard notation and promoting technical skills, research has revealed several additional skills tied to the use of visually nontraditional scores. These skills, which are not strictly musical skills, will from this point on be referred to as nontechnical skills. Included in this group are creativity, socio-cognitive skills, and self-efficacy.

Research has tied increased creativity and uniqueness in music to the use of nontraditional notation. Creativity is a beneficial attribute for singers to possess. Honing creative skills can help a singer generate a more distinct interpretation of a song,

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an aria, or a role. This, in turn, can help that singer stand out in an audition, or give a young stage director a fresh look at a piece of music. It also impacts the future of the field of music performance by creating new experiences for audiences or allowing them to rediscover an older work in a new way.

In addition to enhancing creativity, the interpretation of visually nontraditional scores often involves a degree of improvisation resulting from indeterminacy. Indeterminacy refers to a situation in which the final product of a piece is not preplanned. Several researchers have found benefits in including an element of improvisation in education. Students who improvise learn how to accept and interact with unexpected situations in performance, a skill with obvious benefits for singers.\textsuperscript{125} It also strengthens decision making, willingness to embrace ambiguity, risk-taking, problem-solving, accountability, and self-assessment. These are all skills that encourage singers to step outside of their comfort zones and take advantage of all opportunities offered to them. Through improvisation, students also learn to listen critically and respond to other performers on stage, which in turn will enhance nuance and dramatic narrative in their own performances.

In addition to the socio-cognitive skills listed above, studies on music improvisation have been linked to an increase in self-efficacy, or self-confidence, and a reduction of musical performance anxiety, or MPA. Students who practiced and performed improvisation on a regular basis show an increase in self-efficacy and a

reduction of MPA symptoms during planned performances. This research is highly relevant to singers because it means that by simply incorporating improvisation into a student’s practice routine and lessons can give them a consistently calmer and more confident mindset during traditional performances. MPA is an incredibly difficult hurdle for young and old singers alike. Nerves can significantly impact the quality of performance and are difficult to conquer. Incorporating scores and exercises into lessons that require improvisation and indeterminacy can be a simple and effective way to stave off this problem.

The practice of improvisation and vocal play required for many nontraditional scores could help students acquire valuable nontechnical skills that do not usually receive special focus in most vocal programs. This includes critical listening during performance and the imitation of sounds and styles. Both of these skills are essential when learning about performance practice and musical style.

After surveying current research, it is evident that the use of visually nontraditional scores can facilitate the development of several technical and nontechnical skills. Though it is improbable that one could successfully transition all vocal music to a new form of notation, it does appear that periodic use of alternative notation would be a useful aid in developing technical and creative skill.

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Chapter 6
Repertoire

A review of the available literature through database searches combined with suggestions from current pedagogues and performers compiled a small body of repertoire that utilizes visually nontraditional scores in vocal solos. Within this collection, there is repertoire appropriate for any level of collegiate voice study. These levels, 1, 2, and 3, are referred to in the literature review. An example of each level is examined below.

John Cage’s Aria

The first piece to be examined is John Cage’s Aria written for solo voice.

Figure 2. John Cage, Aria, (New York: C. F. Peters, 1960), 1.
John Cage, a ground-breaking American composer, was known for his desire to question the nature of music itself. *Aria* was premiered in 1959, inspired by Cage’s good friend, mezzo-soprano Cathy Berberian, and her ability to make quick vocal and dramatic shifts. Each page of this thirty page score is designed to last about thirty seconds, but most performances last approximately ten minutes. Like many of Cage’s other works, *Aria* is indeterminate and leaves several musical elements up to the interpretation of the performer. The graphic notation is made up of a series of squiggled lines in various colors. Each color represents a different style of voice (e.g., jazz, baby voice, opera singer, folk song, etc.). The performer is given the freedom to choose which voices he or she wishes to use and with which voice each color will be associated. The text is a series of isolated phonemes and foreign words taken from five languages: Armenian, Russian, Italian, French and English. The vocal phrases are sometimes interrupted by a black box on the bottom of the page. Each box represents a different unsung sound chosen by the performer.

After considering several aspects of the piece, it is reasonable to label *Aria* as difficulty level 1 or 2. While it is longer than many songs and arias, its other stylistic elements render it less vocally demanding than a Strauss art song or a lengthy aria. The lack of specificity in the notation creates more freedom for some singers or more stress for others, given that it requires a unique frame of mind and approach to preparation. The quick changes in the language of the text can also be challenging, but will likely improve the singer’s diction during the study of this piece.

Though *Aria*’s score is compositionally graphic, there are also several familiar notational elements that are present. It is read in the usual direction, left to right and top to bottom. The vertical spacing on the page represents pitch range, giving the student a sense of the tessitura of each figure. Additionally, the melodic contour of each phrase is represented in the vertical spacing of the line. One easy way to begin preparing *Aria* is to experiment with different types of voices. Giving the student a homework assignment such as choosing vocal timbres for three colors, for instance, can make preparation less stressful. The student can then practice like colors together, eventually preparing a page at a time. This strategy, sometimes referred to as “chunking,” can make the piece less intimidating for younger singers.

*Aria* is a pedagogically beneficial piece of repertoire because it encourages exploration for the singer. There is no predetermined pitch material or range for this piece. Timbral and melodic choices are left entirely up to the performer. As a result, the singer is free to explore different parts of their range and mimic various styles and voice types, which can bring new colors out of the voice. Furthermore, the implied dramatic space between each vocal phrase forces the student to become more comfortable with dramatic and musical moments of silence within a piece.
Cathy Berberian’s Stripsody

The next piece to be examined, Stripsody, was written by Cage’s muse herself, Cathy Berberian.

Berberian did not consider herself a composer, insisting that “new music [had] two clowns: Kagel and [herself].” Commissioned in 1966 by Hans Otte on behalf of the Bremen Radio for the Festival of Contemporary Music, Stripsody highlights some of Berberian’s most endearing artistic qualities. The score is truly graphic, made up of a series of cartoon images and onomatopoeia. It is set up as a glossary from A to Z.

interrupted by scenes of sounds that go together. The indeterminacy within this piece requires the interpreter to have a mature stage presence. Vocal versatility is highlighted as the score shifts from sound effects and bodily noises to operatic fragments, pop music quotes, and famous cartoon personalities. The vocal and dramatic shifts occur in rapid succession within the piece, a skill for which Berberian was known along with her inclusion of humor and wit in art.\textsuperscript{130}

\textit{Stripsody} can be sung by anyone who can imitate a melody, making the piece difficulty level 1 or 2. It is particularly fitting for performers who have dramatic strengths, but can also be used to enhance these skills in those who do not possess them. Of all the pieces presented in this study, this is the most indeterminate. This is because the timing and pitch material is the least specific and the images are left up to the complete interpretation of the performer. \textit{Stripsody} can generally be performed in approximately six to eight minutes. There is no precise pitch material other than the two melodic quotes, which can be sung in any key. The text is simple, comprised of English song quotes and several onomatopoeias.

Because of the level of indeterminacy, it also has the least amount of recognizable elements. For this reason, it is important to point them out to the student. As usual, the piece is read left to right, top to bottom. There is a staff-like structure that allows the student to make assumptions about the horizontal space, as it relates to pitch, and the vertical space, as it relates to time. This informs not only pitch range, but also the pacing of the piece. Double barlines separate the piece into sections, creating a distinction between “scenes” of sounds that are related and individual sounds that are strung

together. The grouping of the scenes informs the way each sound is created. Though it is not included in the instructions, the size of the letters and images may be an indication of volume along with the nature of the sound being simulated. For example, a belch will be louder than a buzzing bee. This size-to-volume association is supported by the previously mentioned research in music perception.\textsuperscript{131}

The images and words in the score refer to old cartoons or comic book sounds with which the performer must be familiar. The difference between television cartoon sounds and radio cartoon sounds is important in the interpretation of this piece. These differences make the need for gestures essential during performance. Additionally, there is little to no repetition. Thus, this piece can best be learned by discovering each sound individually page-by-page and practicing scenes of sound together.

*Stripsody* can be used to hone many artistic qualities within a student. It is a great outlet for dramatic exploration and encourages the student to make decisions about dramatic body movement. Dramatic timing is also essential and can be strengthened through the preparation of this piece. Vocally, *Stripsody* invites the singer to explore his or her possible range and timbres. The student is asked to create vocal effects and color that they have in all probability never before experienced. The score also challenges the singer to separate the figures into different parts of their range without a reference pitch, encouraging vocal play in various tessituras. Furthermore, *Stripsody* reinforces the unrestricted release of air through the rapid transitions between spoken and sung sounds, supporting good breathing habits. As an added bonus, this piece allows the student the

chance to perform without taking themselves too seriously, infusing humor and wit into their art.

*Luciano Berio’s Sequenza iii*

Another piece inspired by the vocal style of Cathy Berberian is *Sequenza iii*.

![Figure 4. Luciano Berio, Sequenza iii, text by Markus Kutter (London: Universal Edition, 1968).](image)

The difficulty inherent in this piece merits a level 2 or 3, appropriate for advanced seniors, graduate students, and professional singers. *Sequenza iii*, for solo female voice, was written in 1965 by Italian composer Luciano Berio.\(^{132}\) It is part of a larger set of sequenzas that explore all the capabilities and limitations of various instruments. The score consists of three pages broken up into measures that take place within ten-second

The piece is designed to last exactly eight minutes and forty seconds, a standard length for this genre, but lengthy when compared to most art songs and arias.

The pitch is represented on staves with one line representing spoken sounds, three lines representing general tessitura and relative pitch, or five lines representing exact pitches. Though exact pitches are used, the instructions state that only the intervals need to be exact during performance and the pitches may be transposed to suit the singer’s range. Though range is not an issue, the specificity of the intervals and pitch material makes this piece is more difficult than the indeterminate pieces mentioned above. The performer must have a good ear, good intonation, and strong pitch memory.

Expressive markings take the place of dynamics and change frequently, sometimes with each note of the phrase. Every shape and marking is defined in the instruction manual included in the score, which involves some physical movements with the hands. The various elements used in the score provide a platform for free vocal and dramatic exploration by the singer, but the instructions are so intricate that this exploration is in fact highly controlled by the composer. The detailed specifications in the score are described below in the composer’s own words.

The voice carries always an excess of connotations, whatever it is doing. From the grossest of noises to the most delicate of singing, the voice always means something, always refers beyond itself and creates a huge range of associations. In Sequentia III I tried to assimilate many aspects of everyday vocal life, including trivial ones, without losing intermediate levels or indeed normal singing. In order to control such a wide range of vocal behaviour, I felt I had to break up the text in an apparently devastating way, so as to be able to recuperate fragments from it on different expressive planes, and to reshape them into units that were not discursive but musical. The text had to be homogeneous, in order to lend itself to a project that consisted essentially of exorcising the excessive connotations and composing them into musical units. This is the “modular” text written by Markus Kutter for Sequentia III.

Give me a few words for a woman
to sing a truth allowing us
to build a house without worrying before night comes

In *Sequenza III* the emphasis is given to the sound symbolism of vocal and
sometimes visual gestures, with their accompanying “shadows of meaning”, and
the associations and conflicts suggested by them. For this reason Sequentia III can
also be considered as a dramatic essay whose story, so to speak, is the relationship
between the soloist and her own voice.  

The text used in *Sequenza iii* presents another challenge. The modular poem is in
such disarray within the score, it may be difficult for the student to understand the
thought behind the disjunct text. Furthermore, its rapid delivery requires careful
preparation and attention to detail.

Upon scanning the score for visual familiarity, the student will find that the piece
is read from left to right and top to bottom as is customary for most Western classical
music. *Sequenza iii* also has the luxury of measures separated by barlines, providing
manageable sections for learning. With regard to pitch, there are moments of exactly
notated pitches on a traditional staff that can serve as melodic guideposts. The intuitive
elements of vertical and horizontal spacing are present and essential for interpreting
general tessitura in the three line staff.

There are several pedagogical benefits associated with *Sequenza iii*. The student
learns to take command of the diction in the poem, alternating quickly between phonemes
and words. The student’s melodic memory will almost certainly strengthen when they are
asked consistently to recall a series of intervals in between periods of rapid speech. These
melodies often include rapid register changes and leaps that must be navigated with

134. Luciano Berio, “Sequenza iii,” accessed March 1, 2015,
lightness and versatility. This requires keeping both the speech and sung sounds on the breath without interruption of the airflow. Each vocal figure is labeled with a specific dramatic description, encouraging students to explore new timbres and colors in the voice which are appropriately linked to a dramatic purpose. Perhaps most of all, it teaches spacing and dramatic timing even in the midst of nervous energy.

**George Aperghis’s Récitations**

The final piece to be examined is *Récitations*, written from 1977-1988 by Georges Aperghis.

Aperghis, a Greek composer, is known for writing pieces that challenge the orchestral and theatrical norms of traditional instrumental and vocal music. Though the difficulty level mostly depends on which movements are being prepared, *Récitations* generally merits a difficulty level 3. It is a serialist piece that mixes complete French words with individual phonemes, creating a flow of nonsense sentence fragments that play with the color of the various languages. There are fourteen movements, all vastly
different. Therefore the length of the performance is generally dependent on how many and which movements you choose to present. The notation of pitch and rhythm is extremely specific with regard to rhythm and pitch. Some movements are comprised of rhythmically spoken texts while others are serialist tone rows, assigning specific pitches to specific phonemes. The singer must have reliable intonation and pitch memory. Some movements require a consistent E6, adding to the necessity of a mature high soprano voice. Daniel Durney describes the piece this way:

By the time Georges Aperghis was writing Récitations in 1978, he had already commenced experimenting with the unlikely blending of sounds and words and in so doing had discovered that logic more often than not begins to stray in such alchemy…the music seemingly finds its strength as the words gradually fade in meaning, a process which endows these compositions with a haunting beauty…automatic repetition puts all meaning to flight and is rendered more poetic by the sight of the schoolchild reciting by heart she falters, she catches up, fal ters again.¹³⁵

Movements 8, 9, and 10, for example, are all similar in style. Rhythmically spoken text is interrupted by random bits of melodic material, all introduced in an additive manner. The dynamic markings are descriptive French words that give expressive intent rather than volume markings. There are some barlines that help organize the rhythm, but the figures are complicated to count and some move very quickly. The score for these movements looks like a series of mountains with options to be read in multiple ways.

The visually familiar, or intuitive, elements present in this piece include the fragmented text, measures with barlines, and familiar note shapes indicating duration. There are also moments of a traditional staff with specific pitches. While the reading direction for this piece is left to right, top to bottom, it is possible to read some

¹³⁵ https://voiceisalanguage.wordpress.com/2010/04/06/sound-georges-aperghis-recitations/
movements in multiple ways, which may disorient a student at first. Given that the piece was written for an actress, the performer’s preparation and commitment to dramatic interpretation is important. These pieces can be performed semi-staged. As a starting point, the expressive French words used as dynamic markings allow the student to study the sounds each phoneme and word is producing and what effect it has on the overall musical line.

Preparing and performing this piece can equip a student with many skills. Given the need for rapid French speech, diction will need to improve and become buoyant. The rapid changes between spoken and sung material require a steady flow of supported sound that encourages improvement of breath control. With no assistance or support from another instrument, pitch memory and relative pitch will be strengthened. Also, the student will be exposed to a composer of whom very few other vocalists have heard, let alone sung. The most intriguing skill to be gained from Récitations is the ability to create brief vocal colors that are not directly tied to a character’s long narrative. This exercise aids the singer in developing a unique command of their instrument.

There are vocal solos that utilize visually nontraditional notation appropriate for every difficulty level within the collegiate voice studio. Each piece contains both familiar and unfamiliar elements that can strengthen existing and help develop new technical and nontechnical skills. The repertoire reviewed for this study also includes options that will appeal to various types of leaners. Though most of the unaccompanied vocal solos available are more appropriate for female voices, if the search were broadened to include different performing forces, there could be a greater variety of options from which to choose.
Chapter 7
Discussion

This purpose of this study was to determine the utility of visually nontraditional scores in the collegiate voice studio. With that end in mind, these scores were closely examined and evaluated based on their effectiveness and relevance in developing and utilizing the different learning styles in vocal pedagogy, acquiring and cultivating new technical and nontechnical skills, and the availability of repertoire in this style. Three specific research questions guided this examination: How can visually nontraditional scores facilitate different learning styles in the voice studio? How can visually nontraditional scores help a student develop into a well-rounded vocal artist? Is there literature utilizing this notation that is appropriate for singers with various levels of experience?

Recent research into learning science is becoming more geared toward music classrooms. This has resulted in a closer investigation into how developmental stages, learning personalities, and information processing relate to the voice studio. Current research suggests that visually nontraditional scores could be a positive addition to the voice studio for visual learners and students who are shifting into a more mature developmental stage. Likewise, there is repertoire available for both detail-driven and more structurally based personality types. Research also suggests that using these scores during a stage, or with a personality, that is less compatible might encourage students to grow and mature. Furthermore, information on brain processing suggests that the subconscious processing involved in interpreting a nontraditional score engages a part of the brain that is most compatible with learning a motor skill.
This study defined a well-rounded artist as a singer possessing both technical skills, such as vocal technique and score preparation, and nontechnical skills, such as creativity and intrapersonal skills. The connection of various visually nontraditional scores to important nontechnical skills was an important focus for this study, as many current vocal treatises stress the need for said skills. The list of skills associated with the utilization of these scores was significant. Vocal technique, freer tone quality and enhanced preparation skills, as well as additional nontechnical skills such as interpretation, creativity, self-efficacy, and the reduction of performance anxiety have been linked to the use of such scores.

Since using visually nontraditional scores as vocalises within the studio appears to be both possible and helpful, it was also important to identify plausible repertoire for different developmental stages and genders. This study examines four examples of pieces that fit this description. While all levels of study are represented within this list, there are only two pieces that are practical for the male voice. In general, unaccompanied vocal solos have been written almost exclusively for the female voice, leaving very little material for male students. If this study were broadened to include chamber pieces, including pieces for voice and piano, there would be a greater variety from which to choose. After examining the results of these research questions, one can link positive learning outcomes to utilizing a variety of repertoire or vocalizes available to students of all levels within the voice studio.

This study has laid groundwork for future research. There are new scores being written every day, providing new material for students. Additionally, there have only
been two studies published on using nontraditional notation to correct technical issues in singers. These two studies both addressed the same issue – head and neck position. Future studies could focus on legato, breath, coloratura, release of tension, dynamics, and other common issues for singers. This information could then be easily transferred to a book of vocalizes using this style of notation and, later on, perhaps even an anthology of new commissions for nontraditionally notated pieces that address certain vocal technique challenges, gender, and levels of study. Visually nontraditional notation is a beneficial tool that has yet to be fully explored in the field of vocal pedagogy, but has the potential to pave the way for more instinctual and student-motivated learning.
Table 1. Robert Cutietta’s Description of William Perry’s Developmental Stages

<table>
<thead>
<tr>
<th>Position 1: Dualism</th>
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<tbody>
<tr>
<td><strong>Learning Style</strong></td>
</tr>
<tr>
<td>• characterized by contrasts of “good” vs. “bad,” “right” vs. “wrong,” “us” vs. “them.”</td>
</tr>
<tr>
<td>• assumes the attitude that “the authorities know: if I study hard, I will know too.”</td>
</tr>
<tr>
<td>• takes for granted that knowledge is quantitative</td>
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<tr>
<td><strong>Successful Teaching Strategies</strong></td>
</tr>
<tr>
<td>• lecture</td>
</tr>
<tr>
<td>• demonstration</td>
</tr>
<tr>
<td>• computer assisted instruction</td>
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<tr>
<td><strong>Student Evaluation of Learning</strong></td>
</tr>
<tr>
<td>• involves the questions “How much?” and “How long?”</td>
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<tr>
<th>Position 2: Multiplicity</th>
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</thead>
<tbody>
<tr>
<td><strong>Learning Style</strong></td>
</tr>
<tr>
<td>• assumes that “everyone has a right to their opinions; none can be called wrong.”</td>
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<tr>
<td><strong>Successful Teaching Strategies</strong></td>
</tr>
<tr>
<td>• small-group discussions</td>
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<tr>
<td>• creative activities (assuming that there are no wrong answers is fun)</td>
</tr>
<tr>
<td>• reaction reports</td>
</tr>
<tr>
<td>• lecture with interaction</td>
</tr>
<tr>
<td><strong>Student Evaluation of Learning</strong></td>
</tr>
<tr>
<td>• involves the question “How much”: “pure” creativity</td>
</tr>
</tbody>
</table>
Position 3: Relativism

Learning Style

• assumes that knowledge is qualitative: it is not absolute but is made meaningful in relationship to other things
• students realize their roles as makers of meaning

Successful Teaching Strategies

• seminar format
• individual presentations and research
• small-group discussion

Table 2. Swanson’s Application of the Gregorc Mind Styles

<table>
<thead>
<tr>
<th></th>
<th>CONCRETE SEQUENTIAL</th>
<th>ABSTRACT SEQUENTIAL</th>
</tr>
</thead>
</table>
| **Strengths Upon Which to Build** | • Explore the detail of a new song first, and then sing it through.  
• Share your planned agenda with the student at the beginning of the lesson.  
• Establish routines.  
• Give clear and exact directions.  
| **Weaknesses Upon Which to Improve** | • Encourage the student to explore the imagery of the song.  
• Help the student to find songs in which he or she can become emotionally invested.  
| **Strengths Upon Which to Build** | • Explore the details of a new song first, and then sing it through.  
• Encourage the student to take notes.  
• Use posters, drawings, diagrams, and other visual aids to demonstrate your point.  
• Use physical demonstrations before asking the student to try a task.  
• Vary exercise to avoid boredom.  
| **Weaknesses Upon Which to Improve** | • Encourage the student to sometimes sight read a song without delving into the details first. Encourage the student to explore the feelings and emotions behind the song.  
• Work with the student to maintain concentration during repetitive tasks such as warm-ups.  

Table 2 Continued

<table>
<thead>
<tr>
<th>CONCRETE RANDOM</th>
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<tbody>
<tr>
<td>Strengths Upon Which to Build</td>
<td></td>
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<tr>
<td>• Sight read the whole song first, and then explore the details.</td>
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<tr>
<td>• Set goals for future performance.</td>
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<tr>
<td>• Explore a variety of options to obtain a goal.</td>
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</tr>
<tr>
<td>• Relate songs to the student’s won experience.</td>
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</tr>
</tbody>
</table>

Weaknesses Upon Which to Improve

• Encourage the student to take notes.
• Set your planned agenda with the student at the beginning of the lesson.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Strengths Upon Which to Build</td>
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<td>• Sight read the whole song first, and then explore the details.</td>
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<td>• Encourage the student to explore the feelings and emotion behind the song.</td>
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<td>• Pick repertoire that is appealing to the student.</td>
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<tr>
<td>• Work one-on-one, not in a group.</td>
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Weaknesses Upon Which to Improve

• Work to remove the anxiety from competitions.
• Concentrate on one song at a time.
• Help the student to accept positive criticism
• Plan the lesson’s agenda at the beginning of the lesson.

References


