ARTISTIC DECISION MAKING AND IMPLICATIONS FOR ENGAGING THEATRICALLY GIFTED AND TALENTED STUDENTS IN NON-ARTS CLASSES

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This cognitive ethnographic study explored the mental processes that professional actors used when making artistic choices while engaged in creative practices to begin a conversation about how the theatrically gifted and talented population is viewed, researched, and educated in non-arts subjects. Professional actors at two sites were observed, videotaped, and interviewed over several rehearsals during play production. The major thematic findings indicated that artistic decision making results from actors engaging in a cyclical process of private work, affective validation, and collaboration. Implications for teaching theatrically gifted students call for classroom environments and processes that echo theatrical rehearsal structures, while engaging the imagination through personal connection and discovery.

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Introduction

What makes a theatrically gifted and talented theatre (TGT) student thrive in one class and wither in another? Gifted and talented (GT) research is abundant in topics such as the GT personality, ways to engage these students, and their needs. However, very little attention is paid to artistic GT students, more specifically, TGT students. Artistic GT students are not recognized as a learner type in their own right by educational processes; thrown into the GT curriculum spectrum, it is assumed artistic students are the same as academically gifted students and will benefit from the same approaches (Karnes & Stephens, 2008). What do we really know about *how* artistically talented students think and learn in school if there is no body of research?

Artistic Ways of Knowing (Haroutounian, 2014, 2015), the Theory of Conceptual Blending (Fauconnier and Turner, 2002), and other theories of embodied cognition create an image of artistic students that learn using their whole bodies in a manner that requires a personal connection between the learner and the information. If these theories are valid, the question then becomes: do artistically gifted students only use these modes of knowing in the arts or do they consistently use them in all learning and experiential matters? Furthermore, how might this effect their learning in non-arts subjects? If cognitive structures and processes define how humans interpret their world then, just like any other bodily function, it is plausible that some people use some systems more effectively than others. In other words, perhaps TGT students have more effective access to affective mechanisms in their cognitive processing than non-artistically talented students. Undeniably, you can teach every student to read, write, do math,

run a mile, or memorize a script. But some students seem to have a natural affinity for certain areas, behaviors, or physical actions. They may all be able to "do it," but some seem drawn to it, delighted by engaging in it, or naturally gifted at it. If theatrically gifted students may perceive, gather, and reflect knowledge differently from non-artistic students, then why would we teach them in the same manner? Better yet, how might we design curriculum to better reach theatrically talented students?

The purpose of this study was to explore the mental processes that professional, highly skilled actors use when making artistic choices while engaged in creative practices. Learning more about the cognitive processes in adult theatre artists may aid in the development of pedagogical and curricular practices used to teach TGT students. By observing and interviewing adult actors, patterns of mental and physical behavior in which artists engage may be identified. These patterns may then be used as a lens for teaching TGT students in schools, possibly leading to more impactful curriculum design and classroom experiences in non-arts classes.

Research Questions

The following research questions guided this study:

1. In what ways do actors experience and embody artistic ways of knowing while engaged in artistic decision making processes?
2. What are the implications of these experiences for identifying and teaching Theatrically Gifted and Talented (TGT) students?

Theoretical Frameworks

Artistic ways of knowing and the theory of conceptual blending underlie this study as they offer explanations about *how* and *why* TGT students may think and perceive their world and

experiences differently from non-arts students. Haroutounian (2014, 2105) defined artistic ways of knowing as the perceptual and cognitive processes specific to the arts. These ways of knowing include:

- discrimination and perceptual awareness (a heightened ability for observation and discrimination)
- metaperception (internalizing perceptual awareness through manipulation and mental experimentation)
- creative interpretation (the process of making inner manipulations public representations)
- dynamics of behavior and performance/product (a cyclical process between performance and audience resulting in refinement of artist performance/product)
- critiquing (reflecting and revising using metaperception and creative interpretation resulting in performance/product refinement).

Haroutounian theorized that artistically gifted students employ these ways of knowing while engaging in the creative processes in their respective disciplines. For an extended discussion of ways of knowing, please see Appendix B.

The other theoretical underpinning of this study is Fauconnier and Turner's (2002) theory of conceptual blending (TCB), which explained the behind the scenes mental processing of the brain. They argued that all human thinking is based on metaphoric blends created by bodily experiences. Human development grows out of learning and navigating these blends. TCB is used to explain how humans advanced from survive to thrive; how we create; and how we think artistically, scientifically, and linguistically; and how we think in everyday processes.

According to TCB, new information is compared to and connected with previous experiences, knowledge, schemas and then blended with existing knowledge into new knowledge.

A review of research literature revealed that academia is not studying how theatre students learn. Research touched on artistic personality types, theatre as a vehicle for learning and a social institution, and the value of theatre for improving other academic subjects and school culture. There is research on the theory of embodied cognition and how it relates to teaching acting, performance, and audience studies. However, there is a large gap when it comes to understanding how TGT students think and learn.

Who are theatre students: As a sub-group, artistically talented students are lumped in with the general GT population. There is a significant amount of research on the characteristics of GT students, a smaller amount on artistically gifted students, and even less on TGT students. What has been researched is a general artistic personality. These characteristics have been identified as passion for the arts, interest in improving artistic skills, the ability to focus on a particular art form, intrinsic standards, and a sensitivity to aesthetics (Renzulli, Smith, White, Callahan, Hartman, Westberg, Gavin, Reis, Siegle, & Sytsms, 2002). Reis and Housand (2008) more narrowly defined general artistic characteristics as the use of "elaboration; creating varied, unique, and unconventional products; setting high standards of quality; being self-critical; having a heightened sensitivity to the environment" (p. 73). Sternberg and Davidson (1985) described artists as concerned with aesthetic values and those who were introspective, self-sufficient, imaginative, and those who may embody radical thoughts and actions. Winner and Martino (2003) posited artistic students view the world in a qualitative manner as compared to non-arts students. Per Miller and Sloan, "artists are more likely to be aggressive, cold, egocentric,

impulsive, and tough-minded" (p. 13). They reject group norms, are open to experiences, are original, sensitive, and curious. Miller and Sloan also noted that is it possible that some artistic traits are due to the difficult nature of creating a livelihood in the arts and therefore as adults, only the strongest personality types persist

Research specific to the performing arts and drama/theatre personality type finds theatre artists as more social, more privately self-conscious, and more sensitive to the behaviors of others than non-artists (Hammond & Edelmann, 1991). A 1999 study of the personalities of actresses compared to non-actresses by McKenzie, DaCosta, and Phol found traits of imagination, experimentation, lower contentiousness, less agreeable, more independent, emotionally intelligent, and open to new experiences. Renzulli et al. (2002) described dramatic characteristics as those who easily tell stories, are adept at improvising, identify with the moods of others, communicate effectively with gesture and facial expressions, and are physically poised. Haroutounian (2014) ascribed effective mimicry; heightened awareness of other's behaviors, expression, feelings, and vocal qualities; sensitivity to environmental detail and aesthetics; perseverance in dramatic tasks; self-confidence, and risk-taking as indicators of theatrical personalities.

Other research has identified strategies for engaging artistic students for general academic achievement. Cukierkorn's (2008) research noted the importance of building "self-confidence in their own intelligence and habits of mind" (p. 29). Artistic habits of mind, from Cukierkorn's point of view, include the use of metaperception as artists engage in working, reflecting on, and refining products. To support artists, this process should be highlighted and taught in arts classes, but depending on the non-arts subject, may or may not take place in other subject areas. Theatrically gifted students need to be able to see the parallel ways to engage in

artistic habits of mind in non-arts classes. Cukierkorn also found that arts students are comfortable with engaging in cooperative tasks relating to authentic problems. Experiential, collaborative, and problem- based learning strategies would engage theatre arts students more readily in non-arts classes.

Caroll's (2008) research called for non-arts teachers of artistically talented students to teach in a manner that is highly visual; incorporates opportunities for movement; includes lessons well framed with clear structure, expectations, and goals; are flexible to allow for more time to process ideas; utilize physical materials for engaging the senses; and highlight connections to real life, real world ideas, people, and events. Any material that engages a theatre student in the process of personal or affective cognition in a constructivist, experiential manner is a bridge to connecting the student's world of theatre to non-arts courses.

Neurobiology, cognition, and the arts. Cognitive research is revealing brain processes and structures that support the idea of how artists, and TGT students, may more effectively access certain systems. As research on the brain and cognition has improved with scientific capabilities, it has revealed a brain with integrated emotional, sensory, and cognitive systems (Duncan and Barrett, 2007; Medina, 2008; Zull, 2002). Previously, affective and cognitive processes were seen as separate entities within the brain. Today, we are beginning to recognize a brain that utilizes affective and cognitive processes together to make meaning and store and retrieve memory. This opens the door to wondering if artistically talented persons may intuitively utilize specific brain functions more quickly, effectively, or intensely than non-arts persons. Is it possible that TGT students were born with neurobiological systems or activity predisposed to creativity, imaginative thinking, and superior control of or more efficient access to their affective systems? If humans use past embodied experiences, which are imbued with perceptual

sensations and emotions, to make sense of new information and new experiences (Duncan & Barrett, 2007; Immordino-Yang & Damasio, 2007; Lakoff & Johnson, 1999), then exploring ideas of embodied cognition and the tight connection between affective systems and cognitive thinking processes could allow educators to better understand students who traffic in human emotions, narrative, and character creation.

Duncan and Barrett (2007) theorized that affect was a type of cognition, in the phenomenological sense. They argued that "people experience core affective feelings phenomenologically distinct from thoughts and memories…the circuitry that implements core affect serves as a core feature of cognitive processing in the human brain" (para 3). Duncan and Barrett pointed out that while previous research assumed that the brain used cognitive and affective functions separately, neuroimaging reveals that no one area of the brain is strictly for cognitive or affective functions. The brain operates as a distributed network that uses all sections congruently. This is due to the circuitry that translates sensory information from outside the body to inside the body into meaning. This means that "conscious perceptions of the external world are intrinsically infused with affective content" (para 22). This network of circuitry is spread through the brain in such a way that affective systems and cognition are intertwined.

The manner in which actors prepare for and perform reflects metacognition of an interconnected mind and body that allows for using embodied cognition as a theoretical base for arts cognition. TCB (Fauconnier and Turner, 2002) and other theories of embodied cognition are noted by Blair (2013), Cook (2007), Duffy (2014), Lutterbie (2006), McConachie and Hart (2006), and Shaughnessy (2013) in their work as integral to understanding the cognitive aspects of the acting process, student learning, audience involvement in performance, and performance and cognition. McConachie and Hart (2006) connected TCB and Lakoff and Johnson's (1999)

Embodied Realism, as together these theories offer "a material and experiential explanation for the inherent doubleness of theatrically – the fact that performing human beings exist simultaneously in both real and fictitious time-space" (p. 18).

Understanding neurobiological processes lends support to the possibility that TGT students could be cognitively different in much the same way as other GT groups are seen as separate from the average student. This, in turn, opens the door for re-considering the pedagogical needs of TGT students. For an extended discussion of the literature on cognition and the arts, see Appendix C.

Methods

A cognitive ethnography approach was employed by observing adult, professional theatre artists making creative choices in the rehearsal process. Cognitive ethnography (Hutchins, 1995; Kirsh, 2009; Kuhn, 2000) seeks to study cognitive processes as they unfold in their aligned context/environment. "Unlike traditional ethnography, which tends to emphasize the *what* and *why* of meaning making, cognitive ethnography focuses on the process of *how* meaning is made" (Kantrowitz, 2014, p. 2). Observing internal artistic decision making processes and asking actors to verbalize a largely unconscious event requires multiple processes for data collection and analysis. Observation, video, interviews, surveys, research memos, and textual monologue interpretation were used to collect data.

Participants and Research Sites

Research sites. Two research sites were chosen based on convenience and the ability to obtain permission to observe rehearsals through the personal connections of the researcher. As the process of theatre is one that traffics in emotion and human vulnerability, it is not easy to gain admittance into a rehearsal process. Therefore, instead of being able to randomly select sites

based on equal demographics, the data were collected at convenience sites that allowed researcher access. Sites were similar in nature in terms of the scope of work, mission statements, and their status in their respective communities. Both sites were in the southwest United States, in a major city. All participant and site names have been changed to ensure anonymity.

Participants. Participants volunteered for the study. The researcher presented the scope of the study to the cast members of each production. Four actors, two males and two females, volunteered.

Pauline Powell. A female in the 50-59 age range, Pauline was born outside of and experienced her adolescent education outside of the United States. She studied acting at a professionally recognized acting studio program on the west coast of the United States.

Mark Norton. A male in the 30-39 age range, Mark has a B.F.A and M.F.A in acting from two large universities, both of which are recognized for their training programs. He has additional training in acting, stage fighting, and directing from other studios on the east coast of the United States. Mark is also a drama teacher at a local middle school.

Lily Lynd. A female in the 50-59 age range, Lily experienced education outside of and within the United States. She has a B.F.A from a conservatory program at a university in the southeast United States.

Edward Whitman. A male in the 40-49 age range, Edward attended a well-known drama academy on the east coast of the United States, post-high school.

Procedures

Each actor was videotaped and observed at three separate points in the rehearsal process (beginning, midway, and the end). During rehearsals, the researcher videotaped and took field notes regarding the time and nature of interaction between actors and directors that might

indicate moments of artistic decision making. After each observed rehearsal, the actors' reviewed video segments with the researcher. The semi-structured interview goal was to walk the actor through segments of researcher perceived artistic decision making to recapture the actors thought processes in those moments. Interviews were audio taped and later transcribed for analysis. The researcher wrote memos after each observation to record impressions, issues, and thoughts. Each actor was given a monologue unrelated to their production and asked to mark it as they would a script when creating a character for performance. The monologues were discussed in an interview, collected, and analyzed for data. Each actor completed a demographic survey to ascertain age, gender, and previous training experience.

Data Analysis

Data coding and analysis were approached inductively. Several layers of coding were employed to organize and conceptualize data. In the early stages, data were coded using Descriptive Coding (Miles, Huberman, & Saldaña, 2014; Saldaña, 2016; Wolcott, 1994) to organize and categorize interview data. Process Coding (Charmaz, 2002; Hennink, Hutter, & Bailey, 2011; Saldaña, 2003, 2016), was employed in ounds 2 and of analysis to better conceptualize data and allow the voice of the participants to drive findings. After exhaustive coding, Thematic Analysis (Auerbach & Silverstein, 2003; Braun & Clarke, 2006; Saldaña, 2016; Smith & Osborn, 2008), a method of identifying patterns within data, was applied. Word Clouds and visual maps were created from coded data to add other perspectives to the Thematic Analysis process. Data from interviews, research memos, and video were triangulated for authenticity.

Results

From the hematic nalysis process, two major themes and several minor themes were identified. The themes fell under two categories: artistic decision making and how they learn. Themes about artistic decision making revolved around shared practices for making artistic decisions. Themes and sub-themes generated from data reflected the need for individual and public work that was internally validated through feelings. Themes of learning data highlighted participants preferred subjects that allowed them to make use of their abilities in imagination and creativity. Even as adults reflecting on their younger selves as learners, it was evident they preferred subjects that involved their aesthetic and metaperceptive abilities. Within the Artistic Decision Making category it was clear that participants engaged in a cyclical process of similar elements despite the participants varied backgrounds in theatre training. While participants also had varied experiences in schooling, they gravitated towards the same types of favorite subjects and preferred processes of learning. Under these larger themes were connected sub-themes reflecting how participants engaged in these processes of artistic decision making, and how these participants preferred to learn. For example, a sub-theme of the collaboration process is that collaborative interactions take place through table work, questions, and unspoken gestures. A sub-theme of artistic decision making processes is that actors engage in private work to create character through imagination, connecting to personal experiences, and base these choices in script work and personal acting styles.

Thematic Findings

Artistic decision making results from actors engaging in a cyclical process of private work, collaboration, and affective validation. This theme reflects the personal and public processes Lily, Edward, Pauline, and Mark engaged in while rehearsing for performance and

preparing a monologue for audition. While these processes are unique to each actor and are shaped by specific training methods, there were universal commonalities shared by all four participants. This category is further broken down into three specific types of processes: Private Work, Affective Validation, and Collaboration. These processes are cyclical in nature as the participants frequently moved back and forth between processes as they moved through the rehearsal process.

Private work. Represents all the individual processes actors engage in to create character through imagination, connection to personal experiences, and information provided by the script/text. Actors artistic choices are based in information gathered from the script/text, the director's vision of the play, and the actor's own personal processes. The text or play script was the basis of information for the participants. When they read the text, most talked about reading it multiple times and for different reasons.

> *What I would normally do is read the whole play over and over and over and over. Just to get a sense of what they're saying, the story that they're telling*. (Pauline, I3P)
>
> *The first time I read it, I just read it and score a couple things. Then I start to say the words out loud eventually, after I've read it a few times.* (Mark, I3M)
>
> *I read through it a couple…I keep reading through it*. (Edward, I3E)
>
> *I would read through it casually, and then I would pick out the things, the hooks, and sit on the hooks*. (Lily, I3L)

After understanding the entire story and the context of their own characters, participants review the script looking for meaning and motivation behind words and actions described in the script. Each participant discussed very different ways of marking their scripts, but all involved personal notations that served as guideposts for their interpretations of their character. Edward described doodling and circling things in his script; Pauline would write thoughts as they came to her about the character; Mark used symbols similar to music scoring when marking his script; Lily was more likely to draw visual images, focusing on color in hers.

The artistic choices made were guided by the actor's personal style of character building. Creating character is the result of a layering of choices based in intellectual work. The central purpose of acting processes is to understand and connect to the essence or core of the character: why do they say their words, what motivates their actions, and how can the actor inhabit them. All the participants involved in the study had different training backgrounds, which lead to slight differences in how they engaged in private work. However, all their individual processes shared larger, more universal tasks. All private work involved some form of comprehending the entire story or the play, a system to break apart the text into smaller chunks, processes to connect to the character on an emotional and intellectual level, and participation in collaboration which validated or refined participants' choices.

There is an interesting mental juggling act that occurs as actors struggle to reconcile their preparatory work to create a character, and how they perform in rehearsal and onstage. Actors intentionally divert their critical minds away from their preparatory work, in order to be in the moment on stage. Being in the moment refers to focusing their attention on their scene partner, or the current action on stage. The participants described the mental struggle to integrate their preparation to an almost subliminal state; to perform on stage as if they were unaware. Mark noted that "the actor knows what's coming but the character cannot anticipate." Edward considered it a "parallel process" in which he fought to stay in the moment emotionally while being aware intellectually. Lily saw it as an effort to trick her brain into "getting out of the way." This metacognitive struggle speaks to the heightened awareness these participants have of their physical, emotional responses, and their previous intellectual work creating a character during performance.

Affective validation. The process through which actors' judge decisions regarding character development and portrayal. These decisions are led by emotions, impulses, a mind/body connection, or a feeling of organic engagement. Participants referenced how something felt, a gut reaction, a feeling of truth, an impulse to try something, or a feeling of organicness to justify choices made regarding their character during rehearsal.

> *You know, it's that thing that it smells right. It feels right. It just…there's a slide or a friction to it, like just…it's like whooh, there that goes. That's just in it. You can't really describe it.* (Lily, I2L)

> *Because when I stood up when we rehearsed it, it felt false. Didn't feel like I had a reason. I didn't need to get up*. (Mark, I1M).

> *I do feel some urge to get that, but I didn't, so it's an untrue moment. It didn't work. I knew it didn't work.* (Edward, I2E)

These participants relied upon a strong mind/body connection that was guided by feelings of truth, or a sense of rightness or goodness. These emotional guides were a valid indicator that they were making artistic decisions best fit for themselves and the production. Attending to impulses in rehearsal is one way in which participants engaged in affective validation. They tended to listen to or immediately act on creative impulses, as this was a way to test out how a physical action or emotional reaction felt. Pauline described looking for impulses in her fellow actors during rehearsal, but also being sensitive to her own. Lily called impulses "beautiful discoveries" that must be tried out. Mark remembered the frustration of needing an impulse to act during rehearsal, and it didn't come. When it felt right, good, or was viewed as organic in nature, the impulse achieved validity as an artistic choice.

It was also evident that participants had strong reactions to requests from directors that contradicted their internal emotional validity. In speaking of those moments, participants would recall the urge to stop rehearsal to discuss the incongruities between their feelings and what was happening on stage.

> *I felt very strongly and I felt I had to stop and say something because I just could not, under the circumstances that we were in right now, get on my knees and ask for her forgiveness…There was a part of me, there was 'red light, red light.' It's not… this isn't going to happen.* (Edward, I2E)

> *The direction was, "the scene is lighter, play it much lighter." We got to that and it was like, that now feels false to do that and sort of like, I'm joking and lightening and then spit. It was like I can let that go but I try not to…It was like I'll let it go and if he wants it back I'll put it back but it feels, that impulse, I had to honor that. It was, I feel like that seems to be the truth at the moment, of not to do it*. (Lily, I2L)

Positive and negative feelings and emotions were indicators to the participants that they were making good or untenable artistic choices. Affective validation is how they knew the artistic decisions they made were right for that character in that moment.

Collaboration. A process of interaction between and among actors and the director as they rehearse. Observing the participants in rehearsal revealed that collaborative interactions can occur through table work, questioning, and unspoken gestures. Repetition through the rehearsal process was an important part of the collaborative process as it allowed the participants to learn through failure, feed off their peers' creative energy, and ingrain physical movement into their subconscious. Pauline and Edward both noted that space and time were required to conduct their private work prior to interacting with the director and cast members.

> *I like table work and everything like that, but it takes a couple of times before doing a scene or doing something before that table work pays off. I think the repetition of it takes a little bit longer because you got to get it into your body.* (Edward, I1E)

> *Once the main players have been chosen, the director, the space, the actors, the story, the idea, we all work towards it to unearth what that is*. (Lily, I3L)

> *All I had was a question. That's where theatre becomes a real collaborative art. Where it's like, I don't know what we're going to do about this but let's work it out.* (Mark, I1M)

Participants viewed the directors as a dominant voice in shaping the production and the choices that participants made. Mark referred to the director as a conductor; Pauline noted that her first instinct is to fulfill a director's request; and Edward preferred a director with a strong vision for the show, but who was still interested in being able to dialogue about differences. It

was clear the participants felt a sense of ownership over their characters and would engage in conversation with the director to align the actor's and the director's personal visions of the character. Interacting with the director was described as collaborative process, a process over time, a process that involves listening, questioning, and adjusting. It was noted that disagreements were common, but it was important to reach common ground with the director for the sake of the production.

> *I guess one thing it does force you to do is to reexamine and make sure your beliefs are strong. Then if you can come up with those beliefs and your reasons why you're doing something that's opposed to what they think, and then it forces you to explain it back, which is helpful…I think you just have to talk through it.* (Edward, I1E)

> *It's a collaborative art. Yes, they are the superior. I will listen to them. Then, I feel as if they should give me, the way a teacher gives a student, an opportunity to speak back.* (Mark, I2M)

> *For me, I just get to share impulses. That's what it is for me. I don't even…not to say that I haven't pushed back and still do…. They were talking about cutting something and I was like, "oh, the reason I liked that line was this but it's up to you but this is what I saw."* (Lily, I1L)

Part of the process of collaboration involves the repetition of rehearsal, which forced the participants into a process Pauline described as "tripping, tripping, tripping." At some point, actors leave their private work behind and are on their feet in rehearsal with cast members. Here all the layering of intellectual work collides with physical work, and the vision of the director. The struggle to integrate these areas, is a process in learning through failure. The participants struggled to recall lines, engaged in conversation with the director and their peers, and used feedback and affective validation to refine artistic choices.

> *In this case, when there's so many different balls in the air, so to speak, metaphorically speaking, between the drunk work and the destinations that you have to get to and what you're doing for moment to moment, especially in the scene with the erratic nature of the behavior, you can't track it, you can't make sense of it. You just have to continue to repetitively live it over and over again until you find some things, that you understand the impulses.* (Mark, I3M)

> *It's frustrating because it breaks your momentum. Yeah, no, it's frustration. It makes you mad. I mean, everybody has to call for lines. Everybody's learning and everything, but especially when you're really on something and it just breaks the momentum, it's frustrating.* (Edward, I1E)

> *What you think is at the table, what works great sitting down and on the page, you get on your feet and you're like, "That's unplayable. That doesn't feel right."* (Lily, I1L)

Collaboration also includes audience members during performance. Mark described "feeding off" audiences' energy, and making adjustments on stage as they felt and heard audience's reactions. Lily described the connection to the audience as communal and Pauline felt it was spiritual in interviews. The ability to evoke laughter from an audience, according to Edward, was powerful.

These participants learn best through hands-on, repetitious activities that engage them creatively and emotionally in an environment with known structures for success through failure. Participants preferred to learn through experience, making personal and emotional connections, and understanding the motivation behind the purpose. Pauline, Mark, and Edward all mentioned engagement in repetition or multiple attempts to gain mastery was a large part of their learning process. An aesthetically pleasing or positive emotional environment was cited as a factor by Pauline and Lily. For Edward, Pauline, and Lily the ability to ask questions and discuss the subject matter was viewed positively, as it created an avenue for making personal connections to the subject matter and an understanding of why the subject matter needed to be mastered.

Perception of subjects and how they don't learn. English, English Literature, History, and Visual Arts were cited as the most favorite subjects, with math being the least. Interestingly, while Mark, Pauline, Lily, and Edward felt comfortable being uncomfortable on stage, they did not like to feel that way in other subjects. The feelings of 'not knowing how to do it' was cited as reason to not prefer a subject. Edward and Lily recalled being uninterested in subjects when

they didn't engage their creative abilities. Mark, Edward, and Lily all noted that the involvement of discovery or layers of information connected to the use of imagination, creativity, or a narrative aspect were favored.

Discussion

In What Ways Do Actors Experience and Embody Artistic Ways of Knowing while Creatively Engaged?

In this study, there was evidence of Haroutounian's Artistic Ways of Knowing as the participants engaged in creative processes while rehearsing for performance. The processes identified in this study as Private Work, Affective Validation, and Collaboration reflected artistic ways of knowing through the way participants engaged in and revised their decision making in personal acting approaches; and how participants engaged with their peers, the director, and the audience to adjust and solidify their choices. The findings from this study are further discussed in alignment with Haroutounian's Artistic Ways of Knowing.

Perceptual awareness and discrimination. Defined by Haroutounian (2015) in theatre as a "fine-tuned sensory awareness" (p. 13) that is embodied through a heightened ability for observation and discrimination, these practices were observed in the participants through interviews regarding their Private Work processes, and during Collaboration with the director and their peers. The participants were attuned to their personal impulses and emotions as they made decisions while creating their characters. Their use of imagination and applying their own personal experiences to their characters revealed vivid sense memory capabilities. The participants would comment on their memories of how they felt during a past experience in their own lives, or vivid details of a particular environment and how it impacted them emotionally.

Observing them in rehearsal highlighted a heightened attunement to the atmosphere in the room; they picked up on tensions, nervousness, or approval in more subtle ways. They might stop and react to the expression on the director's face, or the tone of the director's voice - it was as though they were constantly reading the undercurrents in the room and reacting to them. For example, during one rehearsal, there was a moment that required Lily to strike Edward. There had been no prior verbal discussion of whether they would go forward with the physical hit in that moment, as opposed to marking it. As they came to the point that called for the slap in the scene, there was an exchange between the two participants that was conducted solely through facial and body language. There was no broad gesture of asking to be hit or not, it was a split-second exchange of facial expressions in which one participant gave permission to the other to hit them. When discussing it later in the interview, Edward recalled that, "we had this little look like we were going to do it, but she obviously didn't feel comfortable enough to do it…" In that moment, the two participants were so attuned to each other, that they could pass this fleeting exchange to each other non-verbally, using the slightest facial expressions.

Metaperception. Internalizing perceptual awareness through manipulation and mental experimentation, resulting in a creative product or artistic interpretation; this concept encompasses how actors make artistic decisions. In this study, Metaperception was seen in the participants use of Affective Validation, and their Private Work processes to build characters and make choices. Each participant in this study was a unique individual with different theatre training experiences, coming from a variety of backgrounds, making their approach to decision making highly personal. Despite all the differences, there were some universal processes they all shared. The script was ground zero for the initial, basic information regarding characters and the context of their world their world. Participants engaged in methods to mine beneath the text to

understand the meaning beneath the words spoken by their character, what motivated their character to speak, to move, and to react as described in the text. Private Work processes had participants engaged in thinking about the character, applying imagination and/or personal life experiences, and included reading the text aloud and silently in different ways to mentally engage with the character. The repetition of multiple rehearsals of the material provided the opportunity to be aware of and follow different impulses of how to portray the character. Affective Validation led the participants to accept or discard choices for character portrayal. A participant might portray the character or react to their peers' choices in one manner during a rehearsal, but based on how they felt about those choices could lead them to try an entirely new tactic during the next rehearsal. Feeling good or right about their choices would cement that choice as the correct one for their character in that moment.

Creative interpretation. The process of making the inner manipulations public representations is most evident during the rehearsal phase of theatre production. In this study, Creative Interpretation was observed during Collaboration between and among participants and the director for each production. Participants came into rehearsal with ideas about their characters, these ideas were played out during rehearsal. The response from the director and reactions from fellow actors would lead to a cycle of revision for each participant. Sometimes these revisions took place harmoniously with general agreement between cast members and the director. At times, the revision became intense if the participant's Affective Validation was at odds with the director's request. The participants observed in this study engaged in conversations with the director to find common ground between the director's vision of the play and the participants' emotional instincts of right and wrong choices for their character.

Dynamic of behavior and performance/product. The cyclical process in which the performer and the audience engage, as the audience reacts to the performance and the actor revises and refines their performance based on the reaction of the audience. While this study did not include observations of formal performances, the interview process did reveal the participants' perceptions of a connection with the audience members during performance that was collaborative in nature. The participants commented on the powerful feelings of bringing an audience to laughter, or the energy they felt coming from the audience. The audience reaction had the power to propel or shut participants down. The audiences' strong reaction to the performances could lead to revision of artistic choices.

Critiquing. A cycle of reflecting and revising which reengages metaperception and creative interpretation, leading to refinement of performance and artistic choices, was evident throughout this study as participants engaged in self-critiquing while engaged in their Private Work processes and received public critiquing through Collaboration in the rehearsal process. As participants engaged in script work to make artistic decisions, they would mark their scripts, or read them in different ways all while judging their decisions through Affective Validation – did it feel right, did it fit the character, did it fit the story, did it make sense to the participant? When engaging in Collaboration, the director's vision of the production would lead to critiques of artistic choices. The participant would respond to critiques based on the Affective Validation of their choices. Sometimes changes were made, and sometimes the case for the choice was strong enough that the director acquiesced. Critiquing was also evident during the interviews discussing the role of the audience in performance. The audiences' reacting to artistic choices were a critique to the participants that may or may not require a change in artistic choices.

What Are the Implications for Identifying and Teaching Theatrically Gifted and Talented (TGT) Students?

Haroutounian's perspective is knowing how artists think and perceive can aid educators in identify artistically gifted and talented students at earlier ages to provide the appropriate resources for them, and to adapt these processes for curriculum to stimulate artist thinking processes in the rest of the education population. Supporters of arts-integration curriculum in "core" subjects would agree with Haroutounian, as the purpose behind arts-integration is to encourage student's appreciation of the arts, stimulate their creative and aesthetic sensibilities, strengthen their socio-emotional capabilities, and deepen their understanding of non-arts subjects by creating personal, imaginative, and emotional experiences with content.

The impetus behind testing for GT students in K-12 is to allow identification at an early age so that students' educational needs will be met. It is believed that without the proper support and encouragement, GT students may not fully develop their capabilities (Karnes & Stephens, 2008). Part of Haroutounian's theory of Artistic Ways of Knowing focuses on identifying artistically gifted students. Haroutounian's identification process accounts for the different skills sets for each area of the arts: dance, music, visual arts, and theatre; and further advocates that the nurturing of artistic potential is equal to nurturing budding mathematicians and scientists (Haroutounian, 2015). If brain research does support the notion of 'use it or lose it' within the structures of the brain (Eagleman, 2011), then it is possible that unidentified artistically gifted students may weaken their intrinsic skills and abilities if these skills are not encouraged and exercised.

Identifying artistically gifted student at a younger age could potentially aid them in non-arts classes. If curriculum continues to move towards a more individualized experience, then

curriculum differentiated to engage students who perceive the world through artistic habits of mind might find more enjoyment and success in non-arts classes. As our world continues to become more globally intertwined and the economy of the future is increasingly geared towards jobs requiring creative collaborators and problem solvers (Araya & Peters, 2010; Carlile & Jordan, 2012; Sawyer, 2012), then the goal must be to nurture creativity in schools, not kill it. Creativity comes from diversity (Fairweather & Cramond, 2010; Sawyer, 2012), and what is more diverse than artistically gifted students engaged in non-arts subject matter? Wouldn't those students be able to contribute a unique perspective to a subject and perhaps add to the understanding and innovation of it?

The data in this study created a picture of theatre artists that learned best through experimental modes, with multiple attempts, in an environment that had known procedures for learning through failure. While these four participants are not a large, randomized sample representing all theatre artists; it is intriguing that all the participants, despite their varied backgrounds and training methods, preferred English and history to math. This does not mean that they weren't capable of understanding and doing well in math, however, the reasons they preferred English and history over math can be extrapolated and used as a basis for thinking about and generating more engaging methods for teaching TGT students. These participants were drawn to subjects that utilized their artistic ways of knowing. They preferred subjects that gave them space to investigate meaning beneath the immediate surface, that allowed them to consider the subject matter in a variety of ways, and that they felt safe in making attempts to express their understanding.

Of interest was the shared feeling that the participants were fine with not knowing how to do something on stage, but did not like to feel that way in non-arts classes. In theatre, there are

well-known support systems for what Pauline referred to as “tripping.” Actors call for lines and receive them without judgment as they struggle through early rehearsals; actors prepare on their own prior to sharing their artistic interpretations with the director and peers; artistic choices that aren’t working for the director or cast are generally resolved through discussion and repetition that allows actors to try out alternate approaches. There is a strong sense of personal ownership over the character by the actor, but the hierarchical structure of the production is generally respected. Knowing they are free to experiment and make the wrong choice provides the actors with the support and freedom to engage in artistic practices without the fear of failure in the final sense of the word.

This study focused on adult professional actors, who have spent years training and performing to reach their level of expertise. A critical question moving forward in research is, are artistically talented students born that way, or do they become immersed in artistic ways of knowing through a life time of training and performing? Haroutounian would say there is evidence of these artistic leanings in young children, and they can be nurtured or ignored. Surely almost every teacher has had the experience of teaching a student that they described as destined for the stage. The data from this study suggests there are abilities and artistic ways of knowing present early on in these participants’ lives. As they reflected on their school experiences, there were indicators they preferred to learn through their inherent artistic abilities and cognitive processes. The “actor” in them didn’t leave them when they were in the classroom, it was a part of their personality and how they understood subject matter. Some students are born with artistic inclinations. These inclinations can then be fully developed through a lifetime of training and producing. It takes both nature and nurture.

How, then, could a teacher design or differentiate curriculum for a TGT student in non-arts subjects? Based on the findings from this study, it is recommended to approach subject matter from the perspective of where and how this topic fits into the larger context of the subject and the outside world. Connecting to the history or people involved in the topic is helpful as it creates a narrative for the TGT student to engage. This connects to their interest in narrative and the underlying meanings and motivations of people and story.

Creating a class culture that supports and acknowledges multiple attempts, and clearly outlines the process of learning through failure in this subject would connect to the TGT student's experiences of preparing for performance. This known process of learning through failure provides the scaffolding for the TGT student to more confidently engage in non-arts subjects.

Find as many ways as possible to allow for problem solving that engages creative and imaginative thinking strategies in individual, small, and large groups. Structuring classwork that allows for individual preparation, small group collaboration, and whole class collaboration gives the TGT student time to make preliminary choices and then refine those choices through interaction with peers and the teacher. This mimics the collaborative process actors engage in when preparing for performance.

As the instructor, it would be helpful to be open to engaging in constructive dialogue with TGT students when they are struggling with content. The process of dialogue through questions and answers puts them in a position of ownership of their learning processes, while still being guided in an established hierarchy. This process reflects the manner in which artists engage in collaborative artistic decision making. Are there ways to connect a TGT student's instinctive use of Affective Validation to accepted practices of decision making in the subject matter? Try to

guide the student to back up their affectively validated decisions with objective facts or theories in the subject matter.

Anytime it is appropriate to the subject matter, engage TGT students in higher level operations of using their imagination to think of alternatives, make inferences, project forward in time, or project the content into a human form with its own thoughts, emotions, and motivations. See Table 1 for a list of appropriate curricular strategies based on the data from this study that suggest how to best engage TGT students.

Any child can be taught to read from a script and experience using their imagination but some students take to it naturally, it is their favorite moment in school, it brings them joy to engage in it, and they stand out from their peers. The larger implication then becomes that artistically gifted students are just as in need and deserving of support and encouragement as athletically and academically gifted students. If it seems unreasonable to ask an academically gifted student to recite multiplication tables when they are ready for pre-algebra, then the argument may be made that it is not unreasonable to teach artistically gifted students in way best suited for their cognitive processes.

Table 1

Suggested Practices for Teaching Artistically Gifted Theatre Students

Strategy
Use of inquiry and project based lesson plans situated in ill structured problems
Flipped classroom models
Grade not only for final products, but also the process of creating the product; include grades for revisions or stages of development
Lesson plans that model, include, and encourage different perspectives of the subject matter
Work procedures that utilize individual, small group and whole class activities
Provide frequent, specific, constructive feedback to students
Find areas that allow for the inclusion of Affective Validation; guide students towards connecting their gut feelings with factual evidence, if possible
Have clear procedures/scaffolding that are evident to the student for learning through failure in your content area
Find moments for students to engage in creating personal connections to subject matter
Include assessments that allow for student-designed products or student input into the assessment
Find a variety different methods for reviewing content or skills
Create lesson plans that are based in experiential learning
Be sure to explore real life applications to the subject matter: why is it important to learn this? Who are the real people behind this topic or theory? What is the historical context of the subject matter?

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APPENDIX A

DEFINITIONS OF TERMS

Affective Systems: neural mechanisms of emotion; how something affects one; emotions; part of sensory and cognitive processing.

Arts Integration (AI): a method of teaching in which students build and reflect understanding through a particular art form.

Artistic Habits of Mind: cognitive processes utilized by artist as they work on, reflect on and refine products.

Artistic Ways of Knowing: cognitive and perceptive processes specific to the arts.

Aesthetic: nature of, principles of, and/or appreciation of beauty or artistic tastes.

Cognition: mental processes for understanding and acquiring information.

Cognitive Ethnography: methodology of observation of participants engaged in cognitive practices.

Creativity: the interaction among aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context (Plucker, Beghetto, & Dow, 2004).

Creative Interpretation: artistic process of making inner mental manipulations public presentations.

Critique: an internal or public assessment of artistic qualities.

Discrimination: an artistic awareness of details, a fine-tuned ability to differentiate, distinguish and recognize; a qualitative awareness of the world.

Divergent Thinking: cognitive process of generating multiple solutions to a problem; ability to make connections between separate concepts.

Drama: a literary work designed for performance; an approach that utilizes imagination as a learning medium; to act.

Dynamic of Behavior: connection between performer and audience through which both react and refine an artistic product.

Embodied Cognition: a theory that describes the mind and body as inseparable in cognitive processes; emphasizes the role of environment in cognition.

Executive Functions: brain functions (shifting, updating, inhibition) that allow cognitive capabilities of storing and retrieving information.

Gifted and Talented (GT): Gifted individuals are those who demonstrate outstanding levels of aptitude (defined as an exceptional ability to reason and learn) or competence (documented performance or achievement in top 10% or rarer) in one or more domains. Domains include any structured area of activity with its own symbol system (e.g., mathematics, music, language) and/or set of sensorimotor skills (e.g., painting, dance, sports; National Association for Gifted Children, n.d.).

Inhibition: a process that allows the brain to suppress certain functions for other functions to take precedence.

Metaperception: the artistic equivalent of metacognition; mental manipulation and experimentation resulting in an artistic product or interpretation.

Mindbody: the dynamic quality between the body and embodied experiences (Hayles, 2002).

Outlier: a value outside a set of values in a data set; a person differing from other members of a group.

Perceptual Awareness: an artistic heightened ability for observation and discrimination.

Plasticity: ability to alter shape or function to adapt to changes in an environment.

Shifting: process through which the brain moves between tasks.

Theatre: building or space for dramatic presentations; activity of producing plays; a collaborative form of fine art.

Theatrically Gifted and Talented (TGT): an individual with outstanding skill and interest in theatre and drama.

Theory of Conceptual Blending: theory that human thinking is constructed and understood cognitively in metaphorical blends (Fauconnier & Turner, 2002).

Updating: brain's process of replacing older information with new information.

APPENDIX B

EXTENDED EXPLANATION OF ARTISTIC WAYS OF KNOWING IN THEATRE STUDENTS

Perceptual Awareness

In theatre, perceptual awareness is a "fine-tuned sensory awareness" (Haroutounian, 2015, p. 13) that is embodied through a heightened ability for observation and discrimination. TGT students may notice details of gestures, sounds, facial expressions, and may instinctively exhibit bodily awareness in terms of their own communication styles or imitating the gestures and communication of others. A student skilled in these areas may excel at group work and class presentations. Their heightened perceptual awareness may aid their interpersonal skills in working with and responding to the moods and meanings of peers and adults. TGT students might do well on assignments that are detail oriented or require the organization or synthesizing of large amounts of material, and might be challenged by attending to the broad scope of information as opposed to small details, or may have difficulty engaging with assignments or information that lacks sensory components or details.

Metaperception

Metaperception is the artistic equivalent to metacognition. Haroutounian (2015) described it as internalizing perceptual awareness through manipulation and mental experimentation, resulting in a creative product or artistic interpretation: "It is a process that uniquely intertwines cognition, sensory awareness, and expression" (p. 42). In theatre, metaperception is an internal artistic decision making process. This process may begin with an imaginative impulse. The student then enters a divergent/creative thinking cycle by generating multiple thoughts that go beyond the most obvious, revising/rejecting ideas, and then narrowing down to one final idea in order to distill the imaginative impulse into an artistic decision, act, or interpretation. Haroutounian cited similarities of metaperception to Eisner's (1986, 2005) theory of mental representations and Csikszentmihalyi and Csikszentmihalyi's (1998) Flow Theory in

creative work. A student with strong metaperceptive skills may struggle meeting assignment deadlines. They may not be able to hurry their internal creative process to meet arbitrary deadlines or fulfill assignments that call for immediate responses. Their heightened ability to process sensory input may make it difficult to engage with curriculum that has no personal or experiential meaning for the student. On the other hand, the amount of sensory and imaginative detail generated may allow them to more deeply connect with, store, and retrieve material from long term memory and make connections between disparate conceptions. Their heightened internal manipulations of concepts may make them more creative and innovative problem solvers.

Creative Interpretation

Creative interpretation is "exploring ideas internally (metaperception) and applying them to a developing artistic work or performance… that is communicated to others" (Haroutounian, 2015, p. 45). It is the process of making the inner manipulations public representations. Creative interpretation in theatre is seen in young children playing make-believe, may be experienced collaboratively between an improvisational group and cast members in a musical, or may be an individual experience as an actor creates a character. Creative interpretation is the result of the internal metaperceptive process refined and rehearsed into public performances. TGT students may perform academically better when they have an audience to receive and critique their ideas or projects. They may need to hear peer or teacher reviews of their work and want to go back and revise and refine it until they feel it is acceptable. A theatre students' idea of a finished product may be beyond what the teacher needs or expects, or may take too much time causing missed deadlines and personal angst for the student. They may be more sensitive to critiques of their work if they have invested significant amounts of time and personal worth in creatively

interpreting something. A heightened ability for creative interpretation may aid TGT students in innovative and creative problem solving, making them highly valuable in collaborative projects. On the other hand, TGT students may struggle to engage with projects that aren't "creative" in nature, or that don't allow them to reflect and revise, or problem solve.

Dynamic of Behavior and Performance/Product

The dynamic of behavior and performance/product is a "subjective experience, dependent on the listener's or observer's unique tastes and level of listening or observation, as well as the contextual setting of the performance" (Haroutounian, 2015, p. 65). The performer and the audience are connected in a cyclical process as the observer receives and reacts to the performer/artistic product and the performer/artist revises and refines their artistic product based on the reaction of the observer. Theatre, next to musical performance, has a very strong audience/performer dynamic. Actors frequently remark on the energy of an audience or how the audience is receiving a performance and its effect on their artistic ability. Applause, laughter, and silence in the "right" places give immediate feedback to actors on stage. If the audience response is not supportive, then actors can revise artistic choices to elicit a different response from the audience. This dynamic is not just shared with a formal audience, the audience may be other actors in the scene, classmates, or the director. The dynamic is made up of the action/reaction/revise/action cycle actors engage in when in the process of acting. Haroutounian noted similarities between this dynamic and Stanislavski's (Daw, 2004) creative state of mind in which actors think in a purely perceptual mode that relies on sensory input and allows them to bring "inner sensing and emotion outward through dramatic actions" (Haroutounian, 2015, p. 73). A TGT student's need to engage in a dynamic relationship with an observer may cause them to appear needy or dependent upon others for validation on work or ideas. They may seem to

seek out signs of positive reinforcement from teachers and peers, and may falter in environments where they cannot use observer cues to guide them. TGT students may become leaders in the classroom, as they may be comfortable with giving and receiving feedback, working in ensembles, and speaking in front of groups. They may also be models for non-arts students in reflecting on and revising work, and creative problem solving.

Critiquing

"The process of reflecting, evaluating, and translating artistic perceptive qualities into words" (2015, p. 83) is the act of critiquing, which may be an inner self-assessment or a public assessment by a director, teacher, fellow actors, or audience reaction. This process engages artists/performers in refining artistic choices, and using discrimination and perceptual awareness through a cycle of constructive, informative assessment that eventually ends in a summative evaluation. In theatre, artistic choices in terms of character development, interpretation, portrayal, and script analysis are critiqued. These choices are the result of metaperceptive and creative interpretation. Critiquing creates a cycle of reflecting and revising which reengages metaperception and creative interpretation, leading to refinement of performance and artistic choices. TGT students may offend non-arts students who are not used to receiving criticism. TGT students may be overly critical of their own work and the work of others. However, in an environment of constructive feedback, a theatre student may excel as they are attuned to the process of receiving feedback and then revising work.

APPENDIX C

EXTENDED LITERATURE REVIEW

Research and the Arts

As the educational environment became increasingly research-based throughout the 1990s, so too did the arts. An uptick in empirical and qualitative research shed light on the power of the arts (Arts Education Partnership, 1999; Catterall, Chaplueau & Iwanga, 1999; Deasy, 2002; Hetland & Winner, 2001; Rabkin & Redmond, 2004) and disproved some arts educators' most ardent claims regarding transfer of knowledge from the arts to other academic subjects (Burton, Horowitz & Abeles, 1999; Catterall et al., 1999; Hetland & Winner, 2004). As more research on the efficacy of arts was conducted and published, a clearer picture of the need for the arts as a part of a student's well-rounded education began to take shape. Suddenly, arts education leaders understood that instead of remaining in a defensive position, now was the time to become offensive in terms of advocating for the arts.

In 1994, President Clinton signed the *Goals 2000: Educate America Act*, establishing a National Education Standards and Improvement Council (Civic Impulse, 2016). Arts advocacy groups lobbied their way into legislation as a core academic subject and became the first academic subject to create standards under the new law (National Arts Education Association, 2014). A consortium of arts organizations, supported by a grant from the United States Department of Education, developed the National Standards for Arts Education which would became a foundational document for arts educators and arts curriculum across the United States.

The National Coalition for Core Arts Standards (NCCAS) released the National Core Arts Standards (NCAS) in 2014. This web- based document served as a voluntary set of curricular standards for arts educators in the United States, whose purpose is to "guide the delivery of arts education in the classroom with news ways of thinking, learning, and creating" (National Arts Education Association, 2014, p. 4). NCAS appeared as a proactive step for the

arts education paradigm its policy is rooted in arts practices, but shaped by empirical research that is arts focused. This policy could become the foundation for the recognition of the arts as an academically rigorous subject matter, capable of existing in an assessment - oriented world. It remains to be to how arts educators will use and adapt NCAS.

How Do We Currently Research and Understand the Phenomena of Theatre in Education?

Research Conducted on the Arts and Theatre in Education

Advocates for arts in education generally speak for all arts together and a large amount of arts research refers to the arts group instead of focusing on the individual disciplines. Until recently, arts education research has been seemingly focused into general areas – the benefits/deficits of arts-integration (Aprill, 2001; Covay & Carbonaro, 2010; Mishook & Kornhaber, 2006; Seidel, Tishman, Winner, Hetland, & Palmer, 2009); how the arts support student cognition and achievement (Aprill, 2001; Arts Education Partnership, 1999; Burton et al., 1999; Gullat, 2007; Hamblen, 1997; Sousa, 2006; Winner & Hetland, 2000); the value of in school vs. out of school arts (Colwell, 2005; Mishook & Kornhaber, 2006); the value of the arts as their own experience and process of learning (Arts Education Partnership, 1999; Sousa, 2006; Winner & Hetland, 2000); and how the arts have declined since the introduction of No Child Left Behind (NCLB) (Chapman, 2005; Colwell, 2005; Mishook & Kornhaber, 2006). This body of research generally reflects a top down, policy and achievement orientation centered on the value that the arts bring to education.

In What Areas Are Research on Theatre and Students Taking Place, and What Are the Major Themes in Terms of Research Intent/Inquiry?

In thinking about the arts and education, a brief survey and thematic analysis (Braun & Clark, 2006) of current research connected to students and theatre seemed appropriate. Because

theatre exists in school in multiple dimensions such as performance, drama studies, creative drama, and arts integration it is important to have a grasp of the size and scope of the field. The search terms 'theatre' and 'drama' were utilized, as the definition of these words vary among practitioners. Each term was paired with other search terms to gather a wide range of research on students and theatre. 'Theatre and' and 'drama and' were connected to the following terms: writing, at-risk, social studies, science, social development, student impact, creative drama, literacy. The Education Source databased was utilized, restricting the articles to 2000-2015. Table C.1 shows the results of the search. Themes for each search term were identified based on the titles of the research articles. From there, overarching trends/themes were pulled to form themes (Table C.2).

This brief, thematic analysis shows a heavy emphasis on research using theatre/drama to teach other subjects – usually literacy/writing. The topics of research were teacher-centric: teacher perceptions, experiences, lesson plans, models, etc. The use of the term 'theatre' pulls research more performative in nature and the term 'drama' pulls more educationally focused research. What does this mean? Researchers are focusing on what the arts can do for achievement in other subject areas through arts integration and not on the specific academic and non-academic outcomes for theatre students. This approach reflects a gap in the research that ignores arts students themselves. How are the individual disciplines different? How are they the same? What defines an artistically gifted visual artist, vocal artist, dancer, or actor? What are their common characteristics and what are their differences? How do these students perform in non-arts classes? What is their lived school experience? To legitimately speak of the purpose and benefits of arts in education, we must better understand arts in education.

Table C.1

Research Survey Results

Search Term	Number of Articles	Topics
Drama and literacy	450	Lesson plans, teacher perspectives, student achievement, models of, stories about
Drama and writing	1,017	How-to, social issues, pedagogical contexts, teaching writing
Drama and social studies	121	How—to, lesson plans, teacher perspectives
Drama and science	767	Effects of, how-to, teacher perspectives, student learning outcomes
Drama and social development	83	How-to, teacher perceptions, techniques, autism, self-esteem, emotional growth
Drama and student impact	30	Teacher reflections, teacher perceptions, teacher creativity, student achievement (standardized tests)
Creative drama	154	Effects on student attitude, test results, teaching content through it, enhancing creativity, emotional support, teacher perceptions
Drama and at-risk	102	How-to, specific programs, models, practitioner experiences
Theatre and literacy	276	Script production, health issues, how-to, student engagement, student motivation, social issues
Theatre and writing	609	How-to, social issues, ESL, specific theatre genres and their applications, TIE
Theatre and social studies	126	Pedagogy, social issues, how-to
Theatre and science	857	Pedagogy, how-to, models of practice, subject specific
Theatre and social development	96	Autism, community development, socio-emotional development, PD for educators, social identity, TYA
Theatre and student impact	39	Performance spaces and its effect on students, language skills, attitudes, creativity, fluency, outcomes, how-to
Theatre and at-risk	126	Incarcerated youth, program models, student and practitioner experiences, HIV/AIDS, about at-risk, PD for educators, student relationships

Table C.2

Research Survey Themes

Overarching Trends/Themes	Sub Themes
Majority of research is in language arts and theatre.	
Studies identified using the search term 'theatre' are more performative in nature than educative.	
Research is teacher perspective oriented.	How-to, models, practices, experiences and specific curricular subjects, health issues, social issues dominate the literature.
Theatre/Drama used as a vehicle for other content.	Science, social studies, at-risk, social development, creative dramatics (in numerical order) are the focus of research.

What Is Theatre's Position in Education?

Theatre Arts and Education: Its History and Contributions

The Greeks through Modern Europe. Historically, theatre was a training instrument before it appeared in schools as a curricular subject. In ancient Greece, non-wealthy boys were trained as chorus members for the theatre, which itself was born out of a religious ceremony to honor the god Dionysus. Per Philip Coggin (1956), who traced the history of drama in British education, wealthy patrons paid for the chorus boys to be costumed and trained for performance. Within this training were elements of dance, language arts, singing, and improvisation to develop the whole person. Attending the theatre began as a religious practice and evolved into a "great public institution for the dissemination of knowledge" (p. 4). As the practice of Christianity rose, the theatre went into decline, only to reappear in the Middle Ages in the form of verse recitation to aid in language pronunciation. Monastery schools used dramatic pedagogy in the training of potential priests, and used drama in services to teach the illiterate masses stories of the bible

(Allen, 1979). By the end of the Middle Ages, miracle and morality plays were performed outside of church and had developed their own schools to train actors to perform the roles.

The latter half of the 16th century brought the Renaissance and a renewed interest in the study of the Latin language. Drama was again used in the teaching of language and its pronunciation through verse and dialogue recitation. The Quintilian model of oration was the dominant form which utilized gesture and elocution in its process. This renewed interest in Latin led to a renewed interest in Greek and Roman playwrights and scripts. In 1527, Cardinal Wolsey required students at his Ipswich school to study Terence and his comedies as the Cardinal felt that drama was an effective manner to exercise speaking skills. The rise of the Puritans brought about a decline in professional theatres in England, but drama in schools remained. There are records of school performances from France, Germany, Spain, the Netherlands, and Norway throughout the 16th century (Coggin, 1956).

The 18th century saw drama again employed to teach literature and language (Robinson, 1980). Hornbrook (1989) noted the use of drama in progressive schools stemmed from an interest in Rousseau's model of pre-civilized man in conjunction with Romantic era ideals regarding man's innate goodness and the expression of true feeling. English progressive schools of the late 1800s served a newly prosperous social class created by the industrial revolution. This class was interested in removing themselves from the gritty industrial world and cultivating children's sensibilities, imagination, and creativity (Hornbrook, 1989). The later part of the 18th century also contained an appearance of theatre in girls' education. The practice fell under the paradigm of teaching young women social graces: acting, dancing, and singing.

While there was a general absence of drama in public schools at the beginning of the 19th century, there is some evidence of it in boarding schools for the privileged. Coggin (1956) noted

"it was deemed an activity less dangerous than idleness" (p. 192). According to Coggin, the use of drama in education in the 19th century was to provide for entertainment, linguistic training, and the appreciation of Shakespeare. Drama in grammar schools in the 20th century was utilized as a literary tool, with theatrical productions usually taking place in out of school time. However, it ranged widely from school to school. Some schools might have a yearly play, while others studied the dramatic arts as a part of the curriculum. An 1898 Board of Education Report supported drama as a part of the school academics as it could teach boys the difference between good and bad art, proper speaking, personal development, and was described as a tool for rational amusement (Allen, 1979; Coggin, 1956). Drama in British schools in the 1930s and 1940s taught speech, performed plays, and encouraged self-expression (Robinson, 1980).

Theatre and education in the United States. Theatre in education in the United States had a much later debut that its European counterparts. Interestingly, theatre has a longer history in American colleges and universities than grammar schools with plays being performed in 1702 at the College of William and Mary, and in 1759 at Harvard (Coggin, 1956). Prior to 1900, wealthy students studied under private tutors and in boarding schools that may or may not have utilized drama as a pedagogical tool while theatre was largely non-existent in public schools. McCaslin (1997) cited a pervasive American prejudice against theatre and an emphasis on a traditional school curriculum for the lack of theatre in public schools. There were a few progressive schools in the early 1900s that included theatre, such as the Dewey's Laboratory School. The Dalton school released a drama policy in 1916 for its school noting that drama was useful as a summary of final learning, taught students' collaboration and "habits of working" (Coggin, 1956, p. 203), and aided in personal and emotional growth of students. *Child Study* and *Education* magazines featured a few articles from 1910 referencing the use of music and art in school curriculum.

Theatre did exist outside of school in community plays, particularly in settlement houses for immigrants. Theatre was used for entertainment and to teach English and American culture to immigrants. Thus, like religious institutions using drama which led to a resurgence of drama in schools in Europe, drama slowly began to take root in American public schools (McCaslin, 1997). By the 1930s and 1940s in America there were classes and/or drama clubs in more elementary, secondary and colleges. The 1950s and 1960s saw drama as slowly being recognized as "one of the greatest unifying agents in the curriculum" (McCaslin, 1997, p. 88). Universities created programs for the training of theatre arts educators.

The federal government began to support and fund arts activities in schools through the National Foundation in the Arts and Humanities Act, The National Endowment for the Arts, The Elementary and Secondary Education Act, and the Economic Opportunity Act. These foundations and legislation allowed public schools to fund after school arts programs, artists in residency programs, and raised the recognition level of the importance of the arts in communities and schools (McCaslin, 1997). The Arts Impact research study provided a million-dollar grant from the government creating a national experiment to improve teacher training in the arts and arts curriculum in schools. The project's goal was to rebalance the arts and academics in schools, develop high quality arts programs in each school, and "develop ways to infuse the arts into all aspects of the school" (McCaslin, 1997, p. 227).

Advocacy for theatre arts in schools continued to grow through the 1970s and 1980s. America had shifted from a total lack of arts in public schools to a 1992 Harris poll, cited by McCaslin (1997), showing 75% of Americans believed the arts should be a part of the regular school curriculum and 91% felt learning artistic skills in school was important. The American

2000 Arts Partnership was a nationwide initiative to encourage arts in schools through the creation of standards, curricular frameworks, assessments, and a research conference.

Theatre curriculum development. Intermixed in the actual presence or absence of theatre in schools was how theatre curriculum developed. Historically, theatre has been used to teach other subjects and was a tool of refinement for wealthy young women and men. Its usage ranged from verse recitation, to script study, to performance. The emergence of interest in child psychology created a divide between theatre and drama whose reverberations remain to this day (Allen, 1979; Hornbrook, 1989; Robinson, 1980). Theatre as a performative act, and all the skills that support it slowly gave way to drama in education as a developmental, non-performative, child-centered tool. Henry Caldwell Cook's (1917) *Play Way* was a book of reformist ideas regarding drama in education. This began a slow turn of drama transforming from "the frivolous diversion described by Rousseau to an essential ingredient of a child's balanced development" (Hornbrook, 1989, p. 8).

Peter Slade's (1954) seminal *Drama Child* shifted drama even further from theatre by viewing drama as therapy (Allen, 1979; Robinson, 1980). Slade advocated separating child drama from adult drama, positing that the child activity could not be measured by adult standards. Classroom drama should be child-centered and reflect real life as opposed to the artifice of performing theatre. Slade "pushed drama into the mainstream of progressive education and strengthened its ideological framework with concepts of child psychology and liberal philosophy (Robinson, 1980, p. 147). Drama was an activity that developed a child through creative self-expression. Ken Robinson (1980) noted when theatre activities were "uncoupled from drama in education in the 1950s and 1960s, it was…part of an accelerating change of direction which ran through arts education as a whole" (p. 148). Brian Way's (1967)

Development through Drama rejected Slade's drama therapy approach, but furthered the distinction between drama and theatre. Way saw drama as a way for students to practice for adult life, and that drama should be used to develop self-confidence, self-disciple, and personal awareness. Dorothy Heathcoate (1972) redefined drama in education as a learning process. Educators following her methods utilized terms such as 'drama for understanding' and 'drama for knowing.' Heathcote's practices were teacher directed, largely improvisational, and created authentic experiences.

The early 1990s saw a shift from Heathcote's creative dramatics back to arts for art's sake. Hornbrook (1989) cited the 1992 Arts Council of Great Britain's *Drama in Schools* as the legislation that moved curriculum from drama in education to drama education. The Arts Council proposed a framework for drama curriculum that moved it back into the arts paradigm by focusing on skill building, performing, and creating a continuity between drama in school and theatre outside of school.

Currently, American theatre curriculum is shaped by state and national standards. In addition, university led teaching and research has shaped content and pedagogy. Joan Lazarus (2012) based her research on hundreds of observations of theatre/drama teachers in the field, interviews with theater educators, and her own position as a professor. Lazarus highlighted the development of learner-centered practices in middle and secondary theatre curriculum, and noted that comprehensive theatre education, which "encompasses a core of holistic study of the theatre disciplines and expands and intersects with work across other arts disciplines" (p. 223), utilizes the Discipline-Based Theatre Education (DBTE) model of practice. This model utilizes the roles of researcher, playwright, critic, audience, director, actor, technician, and designer to holistically experience theatre with the student as an active participant. Lazarus further described

interdisciplinary arts education in which teachers created interdisciplinary projects across curriculums in the school or community. Hopeful that theatre curriculum and pedagogy is leaning the Industrial Age factory model of schooling and heading towards a leaner centered pedagogy, Lazarus felt that

> As a field, however, we are just on the verge of change, still at the crossroads traditional practice, barely glimpsing these others possibilities. To change *what is*, we must continue to look at the best of *what could be*…and intentionally shape what will be. (p. 317)

The arts and arts-integration. In the United States, in addition to a divide over theatre or drama curriculum, there was a rift between arts for art's sake and arts integration into other non-art academic subjects. Since the publication of *A Nation at Risk* (National Commission on Excellence in Education, 1983), arts practitioners found themselves on a slippery slope caught between the inclusion of arts in school and the need to prove legitimacy as an academic subject (Colwell, 2005). As the United States turned more towards standardized curriculum and assessment driven education, the arts became increasingly marginalized (Chapman, 2005). Within the arts education paradigm erupted two camps, those that fought for "arts for art's sake" (Aprill, 2001) and those that saw the arts as a vehicle to improve student learning in other subjects (Mishook & Kornhaber, 2006). As more in school arts programming fell victim to budget cuts, a cottage industry of non and for-profit companies, existing solely to bring arts and artists into schools, fed by 21st Century grants for after school programming sprang up. Arts were increasingly moved from in-school to after-school as arts experiences were led by a collection of professional and non-professional groups (Brice Heath, 1999). In an attempt to keep arts in schools, led by outside entities and fueled by federal grant money, arts educators began to introduce the arts into English, science, and math classrooms in a process called arts-integration. Arts-integration's purpose was to improve student learning experiences by using the arts as a

mode of learning content. The invention and implementation of arts-integration could be early evidence of attempts to bridge the perceived differences in the value and purpose of arts education in an increasingly assessment- based education world. This need for a bridge emerged as arts education struggled to maintain a hold as a legitimate subject for study in schools.

Theatre and the transfer of skills. Burton et al. (1999) conducted research on the transferability of drama skills to other non-arts academics. The five-phase study was situated in 12 elementary and 12 middle schools. Researchers wanted to capture the students' perceptions of their arts experiences. Findings did not indicate clear evidence of transfer; however, researchers did note the existence of a relationship between learning in the arts and content areas. Calling it a "constellation of cognitive elements," Burton et al. saw this "constellation emerged in other subject matter disciplines in contexts that call for juggling divergent perspectives, imagination, and layering of relationships among ideas and associations in the construction and representation of meaning" (p. 253). This constellation was evidence of a more complex relationship between learning in the arts and its effects on performance on other subjects. Previously seen as a one to one transfer, this research data gave "ground to speculate that learning in the arts and other subjects consists of a dialectic involving the cumulative effects of participating disciplines" (p. 253).

Hetland and Winner's (2004) REAP study was a seminal look at how researchers and advocates talk about the arts and their effects on learning. Ten separate meta-analyses were conducted on a group of 200 studies to ascertain causal links and false claims attributed to the arts. In drama/theatre, Hetland and Winner found causal support for the claim that drama positively impacts verbal achievement, creativity, and self-concept. The use of drama in the classroom had a positive impact on written story recall, oral language, reading readiness, and

writing. Hetland and Winner noted that while the transfer of skills between subjects needs to be taught, in "the field of classroom drama, however, transfer appears to be naturally designed into the curriculum…if teachers of classroom drama did more to teach explicitly for transfer, these effects might be even stronger" (p. 143).

Theatre in education today. Even today theatre, as a part of school curriculum in America, struggles for qualified teachers, time, and recognition. The launch of Sputnik in 1957 began a long, slow decline of arts in education from which it has yet to recover. From being completely discarded, to their status as add-on specials, the arts have largely maintained their footing in education through private funders and government grants (Berube, 1999).

Further exasperating the situation was highly restrictive education legislation whose aim was to improve schooling, but whose result was to further strangle the arts. Chapman's 2005 study revealed that although No Child Left Behind (NCLB, 2002) listed the arts as a core academic subject, it was not a part of the Adequate Yearly Progress (AYP) reports. Therefore, schools did not emphasize the arts in their curriculum as they had little impact on NCLB ratings. When funding is scarce in low performing schools, all money goes to raising math, science, and ELA scores; all professional development resources go to helping teachers raise test scores; after school and in school time are devoted to helping students raise test scores. Forty-eight states in the U.S. have arts content standards, but only twenty mandate arts education. Arts teacher training requirements are minimal and may require no more than a minor in an arts subject area.

In theatre, Salazar (1996) found that only 8% of elementary schools and 56% of high schools offered theatre with classes taught by a range of educators from certified to non-certified to English teachers, to arts generalists. The American Alliance for Theatre Education (AATE) and The Speech Communication Association articulated criteria for training different types of

theatre teachers through pedagogical competencies, knowledge, and attitudes providing national standards for theatre teachers. The National Board of Certification offers a program for a National Certification in the Arts for visual arts teachers but not theatre, music, or dance.

A 2012 survey of conducted by the Educational Theatre Association (EdTa) and Utah State University (USU) of secondary theatre educators and school administrators found that the types of programs offered in public schools varies. Course offerings ranged from traditional drama classes, to a wide range of theatre course (technical theatre, acting, playwriting), to after-school productions and drama clubs only. Seventy-nine percent of schools offered at least one theatre course during school hours. About 95% of schools offered extra-curricular theatre, most likely play productions. Overall, the data from this survey showed that theatre/drama programs were more abundant than previous years and most teachers and administrators agreed that theatre/drama "played a strong role in developing students' self-confidence…theatre played an important role in developing skills necessary to work with others to solve problems" (p. 13). The survey did not ask specific questions about curriculum content, it was reported that most teachers aligned their curriculum to state standards, 23% rarely used required textbooks, and 53% "found their state standards 'somewhat' useful" (p. 22). Overall, the study found that despite the diversity in content and offerings, the objective of theatre education has largely remained the same since previous surveys in 1970 and 1991: growing and improving students inter and intra personal skills and self-confidence.

Neurobiology and the Arts

In general, the brain uses the executive functions of shifting, updating, and inhibition (Nusbaum & Silvia, 2011; Vartanian, 2011) when processing information or taking on mental tasks. Shifting is the brain's ability to move back and forth between different mental tasks and

updating is the process of replacing older information with newer. The raising and lowing of inhibition allows the brain to suppress certain functions for other functions to take precedence. Higher performance on cognitive tasks has been correlated to the brain's ability to effectively and quickly utilize executive functions (Moore et al., 2009).

Research on mirror neurons and embodied cognition (Borghi & Cimatti, 2010; Clark, 2011; Garbarini & Adenzato, 2004) find the brain experiences simulated physicalization of objects by viewing others using them, and further, transfers this simulation to objects of similar size and use. Garbarini and Adenzato (2004) referred to this as an "as-if" state in the brain. The term 'as-if' is also a theatrical training term. Actors puts themselves into the shoes of the character they portray or into the environment of the play "as-if" it is their reality. Viola Spolin (1986), viewed as a founder of educational theatre games for the classroom, based much of her training methodology on this premise of as-if. Students play games that ask them to behave as-if or react as-if or pretend as-if. McConachie and Hart (2006) cited cognitive philosopher Robert Gordon (1996) when speculating that in performance "spectators engage in empathetic observation as soon as performances begin" (p. 5). Modern research on the structure of the brain may be revealing what the ancient Greeks thought all along – theatre is good for the psyche.

It is not only the audience and emotions implicated in this idea of embodied cognition. Students participating in the arts, whether in arts classes or in academics utilizing arts strategies, are implicated as well. Black, Segal, Vitale, and Fadjo's (2012) research on the cognitive ramifications of gestures in student learning noted a connection between physicalization and mental representation. Gestures were thought to be indicators of mental representations, potentially reflecting embodied cognition of concepts. Per Black et al., students can be taught gestures congruent to new concepts to physicalize their understanding, leading to deeper

learning. Spontaneous gestures used by students during the learning process be signifiers of change and reflect the process of understanding concepts.

The role of the arts in cognition. As neurobiological studies have been able to better reveal the nature and function of the brain's structures, we see more and more that the theorizing of arts education giants has basis in hard science. These discoveries enable arts researchers to better understand the role the arts play in cognition. Davis Sousa (2006) noted that the "arts are deeply cognitive. They develop essential thinking tools – pattern recognition and development; mental representations of what is observed or imagined; symbolic, allegorical and metaphorical representations; careful observation of the world; and abstraction from complexity" (para. 4). Miller and Sloan (2014) described acting as a top-down process that utilizes "elaboration, depth of processing, distinctiveness, causal attribution, perspective taking and overlearning" (p. 4). Antonio Damasio theorized that "at the simplest level, consciousness begins with 'sentience', which is a building block of feelings" (Miles et al., 2014, para. 10). His somatic marker hypothesis seeks to connect conscious responses to body-states to clarify the relationship between brain functions and behaviors. Per this hypothesis,

> the brain creates strings of associations that arise in the body first as an emotion (here meaning a physiological state of the body), which is translated into a feeling (a conscious "registration" of a body state), which leads to behavior that may or may not be associated with reason or rational thought…reason in the fullest sense grows out of and is permeated by emotion, and that emotion is consistently affected by reason and conscious cognition. (Blair & Lutterbie, 2011, p. 66)

Embodied cognition. TCB theory further supported other theories on embodied cognition and the idea that the mind and affective/body are an integrated system in the learning process. Lakoff and Johnson's (1999) Theory of Embodied Realism supported an embodied cognitive approach as they believed that

> because our conceptual system grows out of our bodies, meaning is grounded in and through our bodies…. truth is mediated by embodied understanding and imagination…the neural structures of our brain produce conceptual systems and linguistic structures that cannot be adequately accounted for by formal systems that only manipulate symbols. (p. 6)

Hayles' (2002) conception of embodied experiences connects to the process of theatre as a tool for mindfulness. The performing arts require participants to be aware of and utilize the synthesis of the affective, sensorial, and aesthetic information held in the mind and body. Actors train to tap into emotions, perceptions, sensations and use these as fuel for the imagination. Hayles referred to embodied cognition as a dynamic flux viewpoint. Instead of a Cartesian split, the physical body and mental mind are in a relationship in which they shape and inform each other. Per Hayles, the physical body cannot be separated from affective and mental processes. Humans use physical, affective, and mental processes to make sense of the world, interpret information, make decisions, and react. Mindbody reflects the whole human and signifies that one views experience as physically, emotionally, and mentally intertwined.

The view of the learning through an inseparable mind/body is constructivist, as noted by Garbarini and Adenzato (2004) who defined the paradigm of embodied cognition as one that sees the mind/body "rooted in bodily experience and interconnected with bodily action and interaction with other individuals" (p. 105). This approach is Vygotskyian (Vygotsky, 1978) in nature, as it tells us we cannot separate the student from the environment, nor emotion from learning and understanding. Elliot Eisner (1994) considered the "relationship between the individual and the environment …a transactive one…both the quality of the environment and the individual's internal conditions affect the kind of experience or kinds of concepts that will be created" (p. 47). In other words, learning is mediated by affective and sensorimotor perceptions.

This creates a picture of an organism that utilizes all its available resources to interpret and understand. Instead of a divided learning body, we have a highly-integrated learning body.

Embodied cognition is supported by neurobiological findings. Mirror neurons in the brain light up when a person observes another person using an object, as if the observer is physically using the object as well (Garbarini & Adenzato, 2004). The same phenomenon occurs when observing a strong emotional reaction in another person (Wicker et al., 2003). The brain of the observer reacts to the action or emotion observed as if the observer is doing that action or experiencing that emotion. The observer's brain is neurologically experiencing something, even though the observer is not moving or actively engaged in a specific emotion. The mirror neurons reveal the brain as a "biological system rooted in bodily experience and interconnected with bodily action and interaction" (Garbarini & Adenzato, 2004, p. 105). It is in these theories of conceptual blending and embodied cognition that we begin to see links to learning experiences in the arts.

Physicalization is at the core of theatre arts. Actors are taught to "do, not show" when performing. Acting methods teach students that physical actions result in emotional responses and authentic connections between actors on stage and the audience. Gardner (1990) referred to this as kinesthetic intelligence when students use movement as a way of reflecting understanding and making sense of the world. Tribble and Sutton (2013) referred to it as "thinking with the body" (p. 35). Students involved in theatre are in a constant state of physicalization of information. To create a performance, the text is analyzed and then these artistic decisions are physicalized through repeated rehearsals involving interacting with other actors, blocking (planning movements on stage), and repeating movements until it becomes unconscious, embodied knowledge.

In the arts, students are encouraged to make use of sensorial motor information and mental representations to create and refine knowledge. Physicalization is omnipresent in theatre pedagogical strategies. Students are immersed in imaginative creations and interconnection to fellow humans, eliciting cognitive experiences that are congruent with the theory of embodied cognition. In the process of acting, the "'mind/body problem' is addressed through concepts such as embodied cognition, based on perception and action" per Shaughnessy (2013, p. 4). Blair (2013) noted that in acting, we

> create the right physical and imaginational environments to lead to an efficacious stream of images that lead to the desired behavior and feeling…[actors] are typically more concerned with personal experience…things experienced by the body – than with facts or cognitive information. (p. 178)

Blair further points to the reliance on embodied beings as actors. Mental imagery and bodily experience are the stored information accessed to create a character on stage. Neurocognitive research is beneficial to the study of the process of acting, according to Blair, as this new vocabulary

> provides a way of talking about the acting phenomena rather as an evolution of a single organism in a very specific, very material way. Issues …are recontextualized as strategies for *performance,* because the character becomes a set of choices and behaviors – a process rather than a discrete entity… there is no character in an objective sense; there is only the process and behavior of a particular individual in a particular context. (p. 182)

In the paradigm of theatre, Lutterbie (2006) saw embodied experience as the basis of acting since "creativity is an associative process, an interweaving of the affective and the rational" (p. 165). When writing about artistic cognition, Graeme Sullivan cited Hayles' (2002) conception of embodied experiences and placed artistic cognition on her spectrum of mindbody. Sullivan's conception of artistic cognition incorporates "creative and critical processes as mind and matter converge in the many contexts within which art practice take place" (p. 118). Matter

(meaning the physical body) and mind (representing the affective and mental processes within the body) makes Sullivan's conceptions of mind and matter akin to Hayles' mindbody.

Courtney (1995) defined these dramatic, artistic processes as those in which humans think in imagination while simultaneously engage in physical living. Hayles saw the body and embodied experiences as culturally defined, Courtney too saw drama as culturally bound and a process immersed in a dynamic flux within the mindbody as "it is not the dramatist who acts, speaks, and gestures but representations of human persons who, within the script and reinterpreted by players, establish a special order, a unique artistic re-creation, that dramatizes the themes of the dramatist" (p. 176). In the performing arts, actors live in the liminal space in this dynamic flux of the mindbody: "The actor is and is not herself when she portrays a character, just as the character is and is not the actor" (Duffy, 2014, p. 93).

Most major acting methods focus on teaching performers to be "in the moment" by pretending "as if." In other words, actors must be consciously aware of their surroundings and the person in the scene with them. At the same time, they are using their imagination to create the character portrayed and the environment in which the character lives. The process of acting supports the idea that "we are not segmented creatures with separate systems for thinking and feeling but one organism that is able to know the world concretely and abstractly" (Courtney, 1995, p. 156). The actor must be fully, mindfully present (in the moment) when portraying a character. At the same time, they rely on their imagination (as if) to create this character and then embody what they have imagined. Imagination, emotion, and physical action inform and drive each other through drama and theatre performance.

Learning in theatre. Most research has focused on how arts students fare in non-arts academics and how arts programs support academic achievement in schools. Theatre curriculum

is not a standardized practice. While there are components that experts would agree that should be present in every theatre curriculum, it is not a lock step process such as science or math. There is much room for individuality based on the teacher/director and the students in the classroom/cast. The theories of cognitivism and embodied cognition are theoretical pedagogical epistemologies aligned with theatre curriculum. Both theories play into the social, personal, experiential, and collaboration that take place when learning in theatre and drama.

The nature of the theatre puts students into an active learning mode when engaging in the process of creative production. Students access their aesthetic sensibilities through different modes of experiencing. The teacher becomes a guide and facilitator, instead of the repository of knowledge. The teacher's role is to create an environment that allows students to practice and perfect their arts product. For example, in educational theatre, Viola Spolin (1986) spoke of the pedagogical technique of side coaching. This process moved the teacher to the side of the performance space, putting the students in a dominant positon. As students moved through various activities and exercises, the teacher called out feedback for encouragement and reflection. Activities ended with a group review of strengths and weaknesses, adjustments were made, and activities resumed. Anytime students are engaged in activity, the teacher removed themselves from the focus of the activities, and roved from student to student offering support and immediate feedback. Small groups or the entire class could reflexively revisit class content, revise, and re-engage.

Much of the time in theatre is spent in active engagement in the process of creation. Students move from group collaboration, to individual work, to peer/teacher evaluation, to refinement and back to a group setting for performance/exhibition. This process provides growth for the student as an individual and creates a personalized curriculum as students refine and

practice their personal skill set. This process also engages students in critical cognitive processes while immersed in experiential learning. If an arts program is well designed, students should also connect with role models and mentors in their community, allowing for real-world problem solving and the experience of connecting the outside school world to the inside school world. The use of cognitive processes, the connections to real world issues, and intrinsic motivation fueled by student interest are all natural components of practicing theatre.

Creative Personalities

While research on creativity is often extended to identifying artistic personality traits, it must be noted that artistic talent and tests for creative ability are not strongly correlated (Clark & Zimmerman, 1984; Hurwitz, 1983). Creativity tests are generally paper and pencil assessments of diverse thinking and abstract reasoning. For arts students, these traits may or may not be present in varying degrees as while the arts do demand creativity, they may use it in a different manner than a creative, academically gifted student. Also, different arts forms require different strengths and abilities. Someone who is a talented dancer is not automatically a talented painter. There are characteristics specific to each art form.

While there may be general personality traits for creative or GT students, there are also many influencing factors in the evolution of a human being's personality. There may be theatre personality traits, but not every theatre student will fit that mold. Social norms, family culture, genetic dispositions, the environment, and culture all play a role in shaping people and how they view and react to the world. Therefore, all discussions of "traits" must be taken with the understanding that they are making wide generalizations.

Research on personality types dates to the 1940s, when Donald MacKinnon founded the Institute for Personality Assessment and Research (IPAR) at the University of California,

Berkeley to develop personality and aptitude tests. While the early aims were to efficiently direct people to appropriate jobs and training, there was a shift in purpose after Guilford's 1950 address at the American Psychological Association stressing the importance of creativity, scientifically understanding the concept of creativity, and teaching for it in education (Sawyer, 2012). This set off a legacy of research studies on creativity and the identification of creative and gifted students.

The most widely used personality trait measure today is the five-factor model, also known as the OCEAN or FFM model, which measures gifted personalities based on: openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (Cattell, 1933; Fiske, 1949; Goldberg, 1980; Sawyer, 2012; Webb, 1915). GT personality traits based on these factors are frequently used as stand - alone or foundations for identifying, studying, and quantifying GT students. The OCEAN model is influential in discussing the traits of artistic GT personalities. In descriptions of artist traits, we see the traces of the OCEAN five-factor model. Openness to experience can be seen in artists' risk taking, and curiosity. Self-criticalness, high standards of quality and tough-mindedness can be related to OCEAN's conscientiousness. Extraversion speaks to traits of creating unconventional products; neuroticism can be linked to artist egocentrism, rejection of social norms, and a tendency towards self-criticism and introspection.

Studies examining creativity frequently assume that the same creativity is used in artists, scientists, and general everyday creative people. Is there a different kind of creativity evident in artists? Is the average person's daily creative activity (finding a new route to work, coming up with a novel solution to a vexing problem) the same as the creativity employed by a dancer, painter, or musician? These questions speak to how we study, understand, and apply creativity

and its connections or perceived connections to arts and artistic traits. Fiest (1998), after a meta-analysis of personality and artistic creativity studies, found

> empirical research over the last 45 years makes a rather convincing case that creative people behave consistently over time and situation and in ways that distinguish them from others. It is safe to say that in general a "creative personality" does exist and personality dispositions do regularly and predictably relate to creative achievement in art and science. (p. 304)

Per Fiest (1998), there are general characteristics of creative people that extend to artistically creative people. If that is true, then education's grouping of GT students encompassing academically and artistically gifted types together may be acceptable as well. This author would argue, however, that general characteristics are general. Within each of these groups are more specific traits that align with the skills needed to perform at advanced levels, beyond a general interest in dancing, singing, or acting. The National Association for Gifted Children (NAGC, n.d.) describes GT students as curious, inventors, preferring adult interactions, having unexpected ideas, initiating projects, expressing strong opinions, manipulating information, critical, and constructing abstractly. Within the GT population, S. K. Johnson (2004) defined characteristics of creative GT students as exhibiting a fluency of ideas, connecting disparate ideas, accepting of disorder, tolerant of ambiguity, persistent, intellectually playful, intuitive, possessing a well-developed sense of humor, risk takers, and preferring complexity and novelty.

Prior to our ability to observe brain action during cognition, arts advocates theorized as to how the arts are intertwined with thinking and learning. John Dewey (1938/1998) saw education as experiential and art as a vehicle through which students could experience the world and express themselves, to reach their full potential. According to M. Johnson (2010), "Dewey regarded art as the skillful enactment of the qualitative dimensions of some actual or possible

situation. Art presents (enacts) the meaning of a situation, rather than abstractly conceptualizing it" (p. 147). Maxine Greene (1995) focused her attention on the power of the imagination. Greene felt that the arts motivated students to become life- long inquirers and made education meaningful as the arts create habits of mind. Elliot Eisner (1986, 2005) saw the arts as "cognitive activities, guided by human intelligence, that make unique forms of meaning possible" (p. 76). Eisner further saw the connection between cognition and affective sensibilities that the senses allowed students the ability to discriminate. To Eisner (1986), cognition was a process of awareness, so discrimination through the senses was intimately tied to cognition. In his words,

> the point is that, while the sensory system provides us with information about the world in sensory form, our imaginative capacities – when coupled with an inclination towards play – allow us to examine and explore the possibilities of this information. (p. 78)

APPENDIX D

METHODOLOGY

"What is hard to experience is a set of numbers. What is comparatively easy to experience is a set of qualities" (Barone & Eisner, 2012, p. xi). Barone and Eisner's simple statement about the power of the written word clarifies sentiments regarding research and its impact on the world outside of the theoretical. Education is not an assembly line. The educating of human beings is messy. While quantitative research can reflect a piece of the picture when conducting inquiry about schools, curriculum, and success; one can't ignore the humanity involved. Qualitative research is a broad category of methodology that includes ethnography, narrative inquiry, phenomenology, and arts- based research to name a very few. Denzin and Lincoln (2008) defined qualitative research as a

> situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. (p. 4)

Qualitative research is the overall methodological approach in this dissertation as the subject matter is rooted in embodied cognition and the intersection of affective and cognitive processes. The experiences of the participants must be examined in their own words, in addition to observations of phenomena as embedded within the context of the performance space, the world of the script, and the life of the actor.

This study was an attempt to explore and capture artistic thinking processes, in particular, theatre artists. These processes occur in the mind of the actor and may not be easily expressed. Much of them may happen in an unconscious state for the actor, making it difficult to be completely aware of the process as it unfolds. Observing internal artistic decision making processes and asking actors to verbalize a largely unconscious event requires multiple processes for data collection and analysis. Allowing the subject matter of the inquiry and data to guide the methodology, data management, and analysis is at the heart of qualitative research. Childers

(2014) noted that that researchers should unchain themselves from dogmatic beliefs that may constrain their interaction with their subject matter. Childers is not alone in questioning blind adherence to methods or methodologies. Eisner (2008) declared that "what one needs to research in a situation must be appropriate for the circumstances one addresses and the aims one attempts to achieve" (p. 4). Higgins (2007) questioned "if methods only help us avoid error and misunderstandings, what is it that leads us toward truth and understanding?" (p. 389). Pitches et al. (2013) wrote about research methods when studying theatre performers and noted that

> where multiple documentation sources exist, including those from one's immediate experience, the documents will not always 'speak' to each other in a logical way. But these inconsistencies are of important research value and will ultimately reveal more about the practices under observation than when subjected to a singular, homogenizing perspective. (p. 143)

Clearly, research must be undertaken with transparency and clarity to allow for the process to be viewed as trustworthy and genuinely reflective of the subject matter. But care must be taken not to blindly follow a set of prescribed actions without thought to alignment with the inquiry itself. The intent is to study processes of artistic thinking. These processes contain qualities that are fleeting, subjective, unique to each person, and difficult to verbalize. The elusive nature of these qualities requires utilization of multiple methods for data collection. The methodology stems from qualitative practices, in particular, cognitive ethnography and videography.

Cognitive Ethnography

The observational aspects of data collection for this study include an ethnographic approach. However, a traditional ethnographic approach would not entirely suit the needs of the data. Therefore, a cognitive ethnography was employed by observing the artists making creative choices in their natural habitat while participating in the rehearsal process. "Unlike traditional

ethnography, which tends to emphasize the *what* and *why* of meaning making, cognitive ethnography focuses on the process of *how* meaning is made" (Kantrowitz, 2014a, p. 2). Cognitive ethnography seeks to study cognitive processes as they unfold in their aligned context/environment. For example, instead of bringing a musician into a lab and studying her brain waves as she plays, the musician is observed in a music studio or performance space.

Kuhn (2000) referred to cognitive ethnography as a microgenetic method wherein an individual is studied while engaged in metacognitive tasks. Cognitive processes are not only in the mind, they are connected to the environment surrounding the task in process (Kirsh, 2009; Schmuckler, 2001). Hutchins (1995) referred to it as "cognition in the wild" (p. xiii) noting that cognitive ethnography seeks to study cognition in the everyday world where the process of cognition "adapts to its natural surroundings" (p. xiv).

This inquiry was ethnographic in nature, as the study observed and articulated practices in theatre artists. These practices are subtle and largely silent and unconscious. Therefore, it makes sense that observation and interaction take place in an environment conducive to participants' natural practices – a theatre space or rehearsal area. This study did not strictly adhere to proscribed ethnographic practices, but viewed the inquiry as a cognitive ethnographic approach to better capture the phenomenon of artistic ways of knowing.

Visual Methodology and Methods

Eisner's (1998) theory of connoisseurship asked the observer to "make fine-grained discriminations among complex and subtle qualities" (p. 63). Eisner's vision of qualitative research called for studying situations intact being aware of the researchers' own perceptions of the context. The process called for interpretation of the phenomenon being observed and then sharing the phenomenon with expressive language, attention to particulars, backed by multiple

forms of evidence. The inclusion of video as a data collection method and data source created an avenue for connoisseurship in a complex context. Mining the video segment for data with the participant in an interview format allowed the researcher to collect the participants' perspective and explanation for actions displayed in context. When studying an elusive phenomenon such as artistic cognitive processes, a variety of methods and methodology were necessary to capture a fuller picture of how artists think creatively.

A myriad of approaches allows for flexibility in the field of visual analysis. Visual analysis can be quantitative, qualitative, or both in nature. It can mine data for macro or micro issues from anthropological studies to semiotics. Weber (2008) noted that its use has grown particularly in the social sciences field in the latter part of the 20th century as researchers have seen images' ability to enhance understanding of the human condition. The growing trend of using imagery in research is due, per Weber, to visual images' ability to "convey multiple messages, to pose questions, and to point to both abstract and concrete thoughts in so economical a fashion that makes image-based media highly appropriate for the communication of academic knowledge (p. 43). Grbich (2013) lauded the use of visual documents as they allow for more collaboration between the researcher and participants.

Imagery can be interpreted by both researchers and their participants through a variety of methods, allowing for a greater depth of knowledge of data, and a more authentic process. The flexibility of visual analysis creates a fluid field that encourages new approaches to inquiry and data representation. The downside of that, which is evident in qualitative research in general, is a constant tension between a structured paradigm of valid, peer-accepted research and innovation that pushes the field's boundaries.

Visual Imagery

While video imagery was utilized in this study to illicit responses from participants, this method is comparable to other studies that used static images with adolescents in the interview process. Images gave the participant something to focus on, and aide the recall of events. In trying to capture inner artistic processes, it is vital it draw out a verbal description of a mostly silent and possibly unconscious event. Smith, Gidlow, and Steel (2012) used a process of photo-elicitation when interviewing adolescent about their educational outdoor experiences. Researchers found that it was useful to include visual imagery when interviewing as it created a connection during the interview format. The visual aids often prompted the participant to speak when they were reluctant to engage with the researcher.

Other research supports the use of visual imagery to stimulate conversation when utilizing an interview format with participants regarding their perceptions and experiences (Banks, 2001; Collier & Collier, 1986; Damico, 1985; Douglas, 1998; Harper, 2002). The visual images created a point of focus during the interview process, and eased the potential tension between participant and researcher (Clark-Ibanez, 2004). While the subject of Smith et al.'s (2012) inquiry was different from this inquiry, both sought to better understand the phenomenon of experience: "The inclusion of visual 'mnemonics'…in the research process might go some way toward re-capturing the immediacy of the experience lost in other techniques" (p. 4).

Sligo and Tilley (2011) used visual imagery and video in a critical inquiry into adult literacy in New Zealand. In the process, they found that the use of visual images was "an inventive way to permit fresh insights into our subject to emerge" (p. 69). Researchers noted that people's emotional memories are stored in a visual form mentally and thus responded more viscerally to visual imagery when expressing and recalling emotional events. Sligo and Tilley

concluded that “people’s capacity to express their thoughts is improved if they can combine verbal or analytical processes with visually-oriented thinking” (p. 70).

Video as Data

Researchers are utilizing video to better understand aesthetic, cognitive, and sociological issues (Harris, 2016). Video as a data tool in research contains an almost “limitless potential for gathering, analyzing, writing up, and disseminating research findings” (Harris, 2016, p. 5). Harris (2016) purported that video erased the lines between method and methodology due to its flexibility and our increasingly visually- oriented culture. As a tool, video can be used to collect data reflecting experiences, interviews, and focus groups. It can also be used as a “found” data source through home movies, film, archival footage, new reports, online footage, documentaries, etc. The video footage content can be analyzed through a variety of paradigmatic lenses such as anthropological, critical, aesthetic, psychological and artistic. Each researcher lens would see different data within the video footage, speaking to the ability of video to provide for a multi-layered data tool and methodology.

Jacobs, Kawanaka, and Stigler (1999) used video to study both qualitative and quantitative aspects of classroom teaching. The researchers found that the process of videography did not influence their data collection and allowed them to capture details in a more stable manner. Video created the ability to replay and further analyze data, as opposed to a singular observation method of visual observation and field notes. Jacobs et al. noted that video as a data source is “relatively unfiltered through the eyes if researchers are unconstrained by preliminary hypotheses, video has several distant advantages over other types of data” (p. 720). They highlighted video’s ability to capture “unexpected behaviors that might have otherwise gone unnoticed…video allows for sophisticated analyses of both planned and unplanned

observations" (p. 721). Video can hold more elusive phenomena to allow researchers the opportunity to repeatedly view the same event in order for more thorough analysis. In this study, the use of video is an important methodology and method for documenting artistic perceptive processes, particularly as the processes are not well known or codified.

Video in Theatre Research

The use of video in theatre research is growing. As theatre is a non-static event, video allows researchers to capture fleeting moments of creativity and engagement, replaying them without losing the nuances of performance or process. Peter Hulton (2007) developed a process for documenting research in theatre called Aligned, Individuated, Performative, and Projective (AIPP). For Hulton, the research must be in sympathy with the artistic practices (aligned); the documentation process must be appropriate for the inquiry, and it is vital that the focus remain on the subject matter and not the process of documentation (individuated); the researcher must be aware that the process of documentation has its own forms and procedures, but the process still relies on the perception and engagement of future readers of the researcher findings (performative); the researcher must document the phenomena with an intended audience in mind (projective).

Ledger, Ellis, and Wright (2013) saw the use of video to document theatre as a threefold dynamic as the camera interacts with the subject matter, the "documentation strategies must reflect the issues, not necessarily the form, of the research" (p. 183) and the use of video documentation allows for the subject matter to be revised for communicating specific content. Both Hulton and Ledger et al. pointed to the tension between a live performance and a static recording. Bringing a video camera into a rehearsal or performance space immediately changes how the actors relate to each other and the researcher. They are aware of the camera and it will

change the dynamic of the performance initially. It is important that the process of using video - having the right lighting, microphone to capture dialogue, the place of video camera and where the participants are is a process into itself, aside from the research. The process of video documentation must not overshadow the subject of the research. Video also allows for editing, and so the researcher must take care to not shape the video to suit their purposes. The recording must stand as data in its entirety.

Thematic Analysis

Thematic analysis (Auerbach & Silverstein, 2003; Braun & Clarke, 2006; Saldaña, 2016; Smith & Osborn, 2008) is a method of identifying patterns within data. The method itself does not demand specific organization of data, or a particular theoretical knowledge. Auerbach and Silverstein (2003) defined themes as "groups of repeating ideas that had something in common" (p. 38). Per Braun and Clarke (2006), a theme "captures something important about the data in relation to the research question, and represents some level of *patterned* response or meaning within the data set" (p. 82). Saldaña (2016) noted that a theme is an outcome of coding. Therefore, this study used an inductive, sematic approach in analyzing data to allow for themes linked to data and not preconceived notions. Furthermore, using a semantic approach left the data organized by the surface meaning of the words. This prohibited the attribution of meaning to words or phrases that may not have been intended by the participant. Braun and Clarke's thematic analysis is a process of familiarizing oneself with the data through multiple readings; identifying initial codes across the data set; collating those codes to identify potential themes; reviewing the themes by connecting them to data extracts and generating a thematic map; refining and naming themes; and producing the final report.

Coding for Thematic Analysis

Eclectic coding was used to sift through the data to thematically analyze. The first two rounds of coding employed Descriptive Coding (Miles et al., 2014; Saldaña, 2016; Wolcott, 1994), a process also known as topic coding, as a descriptive code is a word or phrase that summarizes the topic of a chunk of qualitative data. Descriptive coding allows the data to be organized into smaller chunks, preparing it for further rounds of more detailed coding. As Wolcott (1994) described, it is preferable to break the data down into smaller pieces and then analyze outwards.

Descriptive Coding was followed by Process Coding (Charmaz, 2002; Hennink, Hutter, & Bailey, 2011; Saldaña, 2003, 2016). Process Coding, also called action coding, applies gerunds to notate observed activities and conceptual actions in data. Process codes can offer the researcher richer reflections of the data they contain, as the researcher begins to assign a larger contextual meaning to the data when applying Process codes. In Vivo data was pulled from Process codes for another perspective of the data. In Vivo data is a departure from In Vivo coding (Saldaña, 2016; Charmaz, 2014; Strauss & Corbin, 1998; Strauss, 1987) which has been described as natural, literal, and inductive coding. An In Vivo code is taken from the text of the data to use the participants' meaning to guide data analysis. This manner of data helped to "crystallize and condense meanings" (Charmaz, 2014, p. 135), which was particularly useful in this study.

In addition, In Vivo data were used to create Word Clouds (www. worditout.com) for each Process code category. Word Clouds as a research tool allow users to "form a general impression of the underlying set of content" (Rivadeneira, Gruen, Muller, & Millen, 2007, p. 995). Other studies (DePaolo & Wilkinson, 2014; McNaught & Lam, 2010) have seen Word

Clouds as an appropriate supporting tool in qualitative research as they provide a birds-eye view of and another perspective to data. The In Vivo data allowed for words and phrases that stood out to the researcher through repeated readings to be collected next to the longer text data that made up the Process codes. The purpose of dual coding was to analyze the data using emergent codes created by the researcher and emergent codes in the participants' own words. The use of Word Clouds added a visual element to data analysis; another perspective through which to view the data. The Word Cloud was used an indicator of topics and conceptual issues expressed by the participants and not as a form of validation. The size of the font and the place of the word indicated its frequency in the data set which was another indicator of possible themes. Employing multiple methods of coding allowed the researcher to organize the data into manageable chunks, and then view the data from conceptual, personal, and descriptive perceptions.

Study Design

The design of this study is based on previous studies of artistic ways of knowing by Kirsh (2010, 2011a, 2011b) and Kantrowitz (2014a, 2014b). Both cognitive ethnographies of artistic practices, Kirsh's work explored dancers' forms of embodied cognition, in particular, how they embodied a short "marking" system when rehearsing dance moves. This allowed them to mentally mark places in the choreography without having to physically exert themselves in fully physicalizing the marked moves. Kirsh used video and researchers to observe the dancers in rehearsal in their normal rehearsal space. The five video cameras were ceiling mounted and endlessly recorded rehearsal from 11am-5pm every day, capturing 110 hours of video footage. After reviewing video footage and observation notes, researchers interviewed participant dancers at the end of each rehearsal period. In the interviews the dancers reflected on their experiences

throughout rehearsal that day and researchers had them physicalize their experiences as opposed to simply verbally describing them. At times, dancers would fully dance a piece of choreography, and then repeat it showing researchers where and how they could mark certain parts of the choreography. Coding was developed from systematic, repeated viewings of video segments. Video coding and interview analysis allowed for the development of a taxonomy of marking.

Kantrowitz's (2014a, 2014b) data were based on visual artists' practices in improvisational drawing. Adult artists were videotaped for thirty minute while they created a piece of visual art. Immediately afterwards, Kantrowitz reviewed the footage of the drawing with the artist. The artist was asked to give a detailed account of their thought processes that occurred while they were drawing in the video. Later Kantrowitz reviewed the interview transcripts and videos to determine patterns among the artists in terms of how they went through the process of creating visual art. A shared process of physicalization was noted. Each artist instinctively had gestures of locating, extending, connecting, reinforcing, and revising as they created their drawings.

Both studies aimed for a better understanding of how different genres of artists think while engaged in creating and refining art. The design of this study follows the same format as Kirsh and Kantrowitz utilizing video, observation, and interviews, but places the lens on theatre artists. Table D.1 outlines the conceptual framework for the study. Table D.2 illustrates the timeline of the study, and Table D.3 outlines the procedure timeline.

Table D.1

Conceptual Framework for Research Study *(Ravitch & Riggan, 2017)*

Focus Area	Framework
Problem	We teach arts kids the same way we teach non-art kids. Arts kids may be different from non-arts kids How can we design better curriculum and instruction in non-arts classes? How do arts kids, specifically theatre, think, learn and view the world?
Literature Review: Research Areas	Who are theatre kids? How are they defined? What are they like? What do we know about them? How do theatre kids/arts kids learn? How do we currently research theatre and arts kids? What is theatre's place in the educational paradigm? How can we research theatre in education?
Theoretical Frameworks	Artistic Ways of Knowing (Haroutounian) Embodied Cognition (Fauconnier & Tuner's TCB; Lakoff & Johnson's Embodied Realism; Hayles' Mindbody)
Research Questions	In what ways do actors experience and embody artistic ways of knowing while engaged in artistic decisions making? What are the implications of these experiences for identifying and teaching theatrically gifted and talented students?
Data Collection: Cognitive Ethnography	Video 3 rehearsals – interaction between and among actors and directors Interview actors post rehearsal, their artistic process, review segments – what were they thinking? How do they learn best? Recollections of school experiences? Monologue – written and verbal interview data about how they create characters
Analysis: Thematic Analysis	Interviews and monologue

Table D.2

Study Timeline

Dates	Actions
Spring 2016	Complete literature review of embodied metacognitive processes; Submit IRB for approval; secure sites for data collection; set dates for data collection; build relationships with site managers and production directors; develop form for field notes recording; develop demographic form; select monologue; develop semi-structured interview questions.
Summer 2016	Recruit participants at sites; attend rehearsals; collect data through video, observation notes, audio-recorded interviews and research memos.
Fall 2016	Transcribe interviews, conduct analysis.
Spring 2017	Interpret data; compile findings, implications, and conclusions.

Table D.3

Procedure Timeline

Site	Participants	Observation/ Interview 1	Observation/ Interview 2	Observation/ Interview 3	Monologue Collected	Demographic Survey Collected	Total Hours Observed
Rooftop Theatre	Pauline Powell	8/9/2016	8/16/2016	9/27/2016*	9/27/2016	8/16/2016	11
	Mark Norton	8/9/2016	8/16/2016	8/24/2016	8/24/2016	8/24/2016	15
Perceptions Theatre	Lily Lynd	9/27/2016	10/5/2016	10/11/2016	Not collected	10/11/2016	14
	Edward Whitman	9/27/2016	10/5/2016	10/11/2016	10/11/2016	10/11/2016	14

*The participant was not available for videotaped observation during rehearsal on 8/24/2016; the participant was interviewed for a third time on 9/27/2016, but not observed in rehearsal for a third time.

Research Sites

Rooftop Theatre. Founded in 2011, Rooftop theatre is housed in a collective arts space that houses two theatres companies, one performing space, and gallery space for visual arts. Locally recognized by local papers and *American Theatre* magazine, their mission is to produce cutting edge, truthful theatre, and support the arts community in their city with competitive pay and training.

Perceptions Theatre Company: Founded in 1978, Perceptions Theatre Company is currently in their 38th season. Nationally recognized for their work by the New York Times, Wall Street Journal, *Variety*, and *American Theatre* magazine, Perceptions owns an historic building containing two performance spaces. They focus on new works, emerging playwrights, presenting established work in new ways, and nurturing professional talent in the performing arts field.

After the interviews were transcribed, data were color-coded by speaker. The use of color - coding ensured that one actor's interview data didn't dominate categories or codes. Data were then organized by interview session 1, 2, or 3 instead of by participant. The purpose of this was to distance the researcher from associating the words with a specific actor, as opposed to focusing on the words themselves. For a visual representation of the analysis process, see Table D.4.

Table D.4

Data Analysis Procedure

Step	Actions Taken
Preparation	Audio recorded interviews transcribed and color- coded by speaker Data were sorted by interview session Data were read Data were descriptively coded Data were imported into an Excel sheet in two categories: Conversations about Acting (CA) and Conversations about Learning (CL)
Round Coding	CA and CL data coded using Descriptive Coding in Excel New codes generated
Round 2 Coding	New codes placed into Excel sheet Data reviewed again using Process Coding and In Vivo data In Vivo data used to generate Word Clouds Codes refined: new codes added, ineffective codes removed
Round Coding	New codes placed in Excel sheet Color-coding of data removed Original interview data reviewed per actor to delineate specific personal acting process Visual maps created from Process Codes and sub-codes Analytic memos written about potential themes
Thematic Analysis	Round data analyzed through Thematic Analysis Word Clouds and visual maps utilized Themes and sub-themes were identified and placed in a new Excel sheet

Assumptions and Limitations

The research presupposes three assumptions: one, that artistically gifted and talented students' learning processes and cognitive perceptions differ from those of non-arts students; two, that theatre students utilize artistic ways of knowing (Haroutounian, 2014), in their cognitive processes; and three, by better understanding adult artistic decision making processes, it is possible to determine how to better engage artistically talented young adult students. It is assumed that this artistic or aesthetic lens through which arts students' may receive, process, and

interpret information can lead to tension between more traditionally oriented classrooms and an arts student's attempts at academic success.

This study is limited by its subject matter. Chiefly, it is a small study with four participants who were accessed through convenience as opposed to a large, randomized sample. The plays in production at the time further limit the diversity of the participant samples, leaving only gender as a controllable variable for the researcher. The type of play dictates the ethnicity and age of the actor. The personality of the director also dictates the type of actor hired in terms of their professional experience and training. Selecting plays produced at highly regarded theatres by highly regarded directors allowed the researcher to find highly qualified participants, however.

Trying to capture artistic decision making processes while engaging in creative acts is a very narrow focus. There are many moving parts in theatre production, from direction to design to acting. This inquiry is centering on actors through their processes of developing characters and engaging with other actors and directors in rehearsal for a public performance. Therefore, it may miss other modes of artistic knowing in these other areas.

The study is constrained by the act of observation itself. Creativity is a choice and there is a probability that observed rehearsals may not be as rich in creative practices as unobserved rehearsals periods. Data are dependent upon the participant actors. Perhaps the actors observed are most creative when they are alone, working on their script. The actors' training techniques or the production director may direct them to make artistic decisions in a very specialized way that is different from what their instinctive process may be.

The researcher's presence in the rehearsal space, with a video camera, can change the environment and perhaps make the actors less inclined to truly engage in creative acts in front of

a stranger. Planned interviews with the actors can be constrained by the discomfort of seeing themselves on video or the difficulty in articulating a process that is largely internal and unconscious.

APPENDIX E

ANALYSIS

Round Coding

Data from the categories of Conversations about Acting (CA) and Conversations about Learning (CL) were reviewed. This resulted in a further refinement of Descriptive Codes in CA: Personal Acting Processes, Personal Life/Experiences, Imagination, Mind, Monologue, Director/ Director Relationship, Breaks, and Feelings. CL data were coded by: Learning, Not Learning, Loving/Hating Subjects. Table E.1 shows an example of data generated Descriptive Codes. The color - coded data were next placed into a new Excel sheet under the refined codes (Table E.2).

Table E.1

Descriptive Code and Data Example

Descriptive Code	Data Examples
Conversations About Acting	My first impulse is listen, take as much in as you can, and then go out. (I1P) I think too, at this stage, nobody's listening to each other, and we're all thinking about our own lines. I think that's fine, because you just have to go through that. (I1P) I think they are, but I think once you start getting up, and you've got a space and people around you, it all goes out the window and you've got to be reminded back. You know what's hard too, is that I've played the part before 6 years ago in New York. (I1P) You've got to go through the tripping, tripping, tripping, and be open to be told ... be given direction, and then take it, and you know maybe I'll find other things. (I1P) It's a combination of thinking and feeling your way through the scene. (I1M) By avoiding making choices and purposefully going in there trying not to make choices you can't help but make choices. Then you're almost letting organic things happen. (I1M) If you work on the circumstance and you ask questions and try to at least understand the somewhat parts of the answers to those questions then the actions, the tactics will reveal themselves through the behavior. (I1M) It's hard to go directly from table work for me to being up on our feet doing the scene because there's low energy. It's hard to get riled up to do the scene. I find it difficult. I always find that after we do table work, I like table work and everything like that, but it takes a couple of times before doing a scene or doing something before that table work tends to pay off. I think the repetition of it takes a little bit because you got to get it into your body. I don't think it's an immediate thing. (I1E) For me, it's sometimes easier to dig deeper from an outside perspective. Just a slightly one. (I1L) Sometimes when you're not quite sure you have to stop the exterior. It's like you have to smell and you don't want to step over something that is important that's coming at you. (I1L) I think it's just sort of responding to ... It's just responding to whatever he's saying. I'm trying to help me, but I'm also trying to come in when he needs it. (I2P) Where you're trying to be really in the moment, and connect, and connect the dots. To find your emotional track, to find the track of what you're doing. Where you're moving and what you're doing. Also, in a situation like this, got the technical aspects. It's constantly a layering effect. (I2M)

Table E.2

Round 1 Analysis: Coding and Data Examples

Category	Descriptive Codes	Data Examples
Conversations about Acting	Personal Acting Process	What you think is at the table, what works great sitting down and on the page, you get on your feet and you're like, "That's unplayable. That doesn't feel right." (I1L)
		I have to work on my own a lot before rehearsal, and I think that's one of the examples. It's not necessarily doing anything other than just really reading and delving into the text and finding the beats within things (I2E)
	Personal Life/Experiences	I draw on anything I can at first that I know or that I've experienced, or that I've seen, and then there has to come a point where you go, "What if?" (I1P)
	Imagination	First of all, I thought "Who would come into my house and just totally take charge?" And that was, okay, my sister. And then as I was doing it, I'm not trying to play my sister; I'm trying to find me as her with these guys, so then you're trying to find "Who am I" in that person? You know, or "Who is that person in me?" You know, how do I mesh those two people together? (I1P)
		A lot of what acting is for me is trying to trick yourself, or your brain getting out of the way, of just letting it happen. And for you to be conscious, of course, but to not control it completely so there's room for your id, your ego, and your super ego all to dance. (I2L)
	Monologue	I read through it a couple ... I keep reading through it. (I3E)
	Director	It's a collaborative art. Yes, they are the superior. I will listen to them. Then, I feel as if they should give me, the way a teacher gives a student, an opportunity to speak back. (I2M)
	Feelings	Because when I stood up when we rehearsed it it felt false. Didn't feel like I had a reason. I didn't need to get up. I could have told him what I wanted to tell him without getting up. It was an arbitrary move (I1M)
Conversations about Learning	Learning	I also learn by repetition and learning things. I also learn by getting up and doing it. (I3M)
	Not Learning	Reading something to me and then learning something that way is very hard for me to do. (I3P)
	Loving/Hating Subjects	I loved the English Literature. I loved English Language. I loved History (I3P)
		Visual art. I loved art. I liked English class a lot. (I3E)
		I remember one of the classes I liked so much was a literature class, English, and it was understanding humor. (I3L)
		History was stories (I3P)
		History too (I3E)
		Math was a disaster for me (I3P)
		There's not a lot of gray area in math. It's very precise. I don't find a whole lot of imagination in it (I3E)

Round 2 Coding

Descriptively Coded data were reviewed again, this time using both Process Coding and In Vivo data. Process Coding resulted in further refinement of codes: Using Their Mind, Using Their Imagination, Using Their Personal life/Experience, Listening, Mixing Personal Life/Character Life, Using Failure/Difficulty, Submitting to a Process, Organically Happening, Getting to the Core, Relying on Collaboration, Searching through Questions, Contexts Effecting Processes, Building Character, Being Emotionally Engaged, Following Impulses, Audience Effecting Performance, Working with the Director.

In Vivo data (see Table E.4) were then generated from Process Coded data, and used to create Word Clouds (see Figure E.1) for each code. For example, for the process code Getting to the Core, examples of In Vivo data were: mix, core circumstances, strong beliefs, self-examination, talk it through, perspective, and digging deep. Laying Process and In Vivo Codes next to each other allowed the researcher to look for patterns in word repetition, and the types of words used by the participants to describe this process. This multifaceted approach led to a deeper analysis of possible themes in the data.

The result of this phase of analysis led to the deletion of three stands of codes: Listening, Mixing Personal Life/Character Life, Using Failure/Difficulty, and Being Emotionally Engaged, due to a lack of data support across participants. A further refined grouping of Process Codes emerged as sub-codes were also identified. For example, Using Their Feelings was further sub-coded into Measuring by Emotion and Feelings Informing the Process; Using Their Mind contained sub-codes of Thinking Critically, Being in the Moment, and Juggling Act. See Table E.3 for examples of ound 2 coding.

Table E.3

Round 2 Analysis: Process Coding and Data Examples for CA

Descriptive Code	Process Sub-Code	Data Example
Personal Acting Processes	Submitting to a Process	You've got to go through the tripping, tripping, tripping, and be open to be told ... be given direction, and then take it (I1P)
	Organically Happening	By avoiding making choices and purposefully going in there trying not to make choices you can't help but make choices. Then you're almost letting organic things happen (I1M)
	Getting to the Core	I like discussing it. I like doing table work as they call it (I1E)
	Relying on Collaboration	It's just responding to whatever he's saying. I'm trying to help me, but I'm also trying to come in when he needs it. (I2P)
	Searching through Questions	You're trying to find the point of view or the impulse in the mindset of Austin, of the way that I'm getting in his situation. This is where I am. Where am I at? Why do I want to play with the toasters? (I3M)
	Contexts Affecting Processes	It's very dependent on what type of shows I'm doing. (I1L)
	Building a Character	Just going over the script and finding different beats in it and say, okay, from here to here he's doing this, then this changes, well then maybe I can add a physical element there to differentiate with that. (I2E)
	Following Impulses	I think it's one of those beautiful discoveries that there's an impulse, let's try it... (I2L)
	Audience Effecting Performance	You start to learn energetically. You feed off the audience's energy. I can feel it. (I3M)
Feelings	Measuring by Emotion	It just feels wrong.(I1L)
	Feelings Informing the Process	I felt it very strongly and I felt I had to stop and say something because I just could not, under the circumstances that we were in right now, get on my knees and ask for her forgiveness. (I2E)
Director	Working Together	An opportunity to give input. An opportunity to learn through dialogue.(I2M)
	Envisioning the Performance	I think she's carving out a character, and I think there's going to be room to find other things in her. (I1P)
Monologue Preparation	Marking the Script	I put in squiggly lines that are closer together for speed, longer lines for the legato. It's like music. If something's staccato or legato, if something's super-punched, you might have dots on it. (I3M)
	Reading the Play	Read the whole play over and over and over and over.(I3P)
	Getting the Bigger Picture	If you knew what the director was looking for a little bit, if you had anything to go on, what it was for, that alone forms you as well. (I3M)
	Making Choices	This sort of seems like the opening. Here's like a body. Oh, and this whole section here is about the papers and all this stuff. I start thinking of all the physical things you could do within that. (I3E)
Mind	Thinking Critically	After I understand what she's suppose to feel then I then can feel it. (I1L)
	Being in the Moment	I think if we think about it too much, again that's the table work versus on your feet. It's really good to think about things but sometimes it's a whole different thing when it's in action. (I1L)
	Juggling Act	You don't actively suppress it. It's just that your attention is on. You give yourself ... It's like juggling (I1M)
Imagination	Sewing together Real and Imaginary	Imagination some too. There's not always direct parallels to your personal life, but I think there can be a lot of similarities. (I1E)
	Drawing from Sources	You didn't live that life. All you can really do is give yourself the information, and use your imagination, your talent. (I2M)
	Flipping the Switch	There is a switch so to speak that you have to flip on when you get to rehearsal where it's a heightened state of things and you are able to say thing and do things and act on impulses that you might have to suppress in the real world. (I1M)
Personal Experience/Life	Drawing on Similar Experiences	It's so tactile. It's a very easy thing to transfer that to the character.(I3E)
	Personal Life Informing Character Development	Maybe I would go and do that to experience what that is but since I have, it's very easy to sort of merge what all that is. (I2L)

Table E.4

Example of In Vivo Data

Descriptive and Process Codes	In Vivo Data
Affective Validation: Using Feelings	feels good to try different things (I1P)
	I like jumping in and trying something (I1P)
	be able to feel sucky (I1P)
	put yourself in that position (I1P)
	it felt false (I1M)
	reason (I1M)
	arbitrary move (I2M)
	it just feels wrong (I2L)
	a little thing (I1L)
	keep going and flag it (I1L)
	I was just happy (I1M)
	automatic trigger (I2M)
	ring a bell (I1L)
	we could let that go (I1L)
	a way for our body to know (I1L)
	palette cleanse (I1L)
	that doesn't feel right (I1L)
	squelch my impulse (I1L)
	good (I2M)
	you have to be uncomfortable (I2P)
	felt different (I2P)
	don't feel fully grounded (I2P)
	felt good (I2L)
	didn't feel good (I3E)
	didn't seem right (I2E)
	feel in my gut (I2E)
	feels organic or not (I2M)
	felt it very strongly (I2E)
	felt it very strongly (I2E)
	felt I had to stop (I2E)
	it smells right (I2L)
	it feels right (I2L)
	it's like whooh (I2L)
	submersion (I2L)
	living in this dark thing (I2L)
	my mind knows I'm acting, my body does not (I2L)
	that's not how I felt (I3M)
	I felt blocked (I3M)

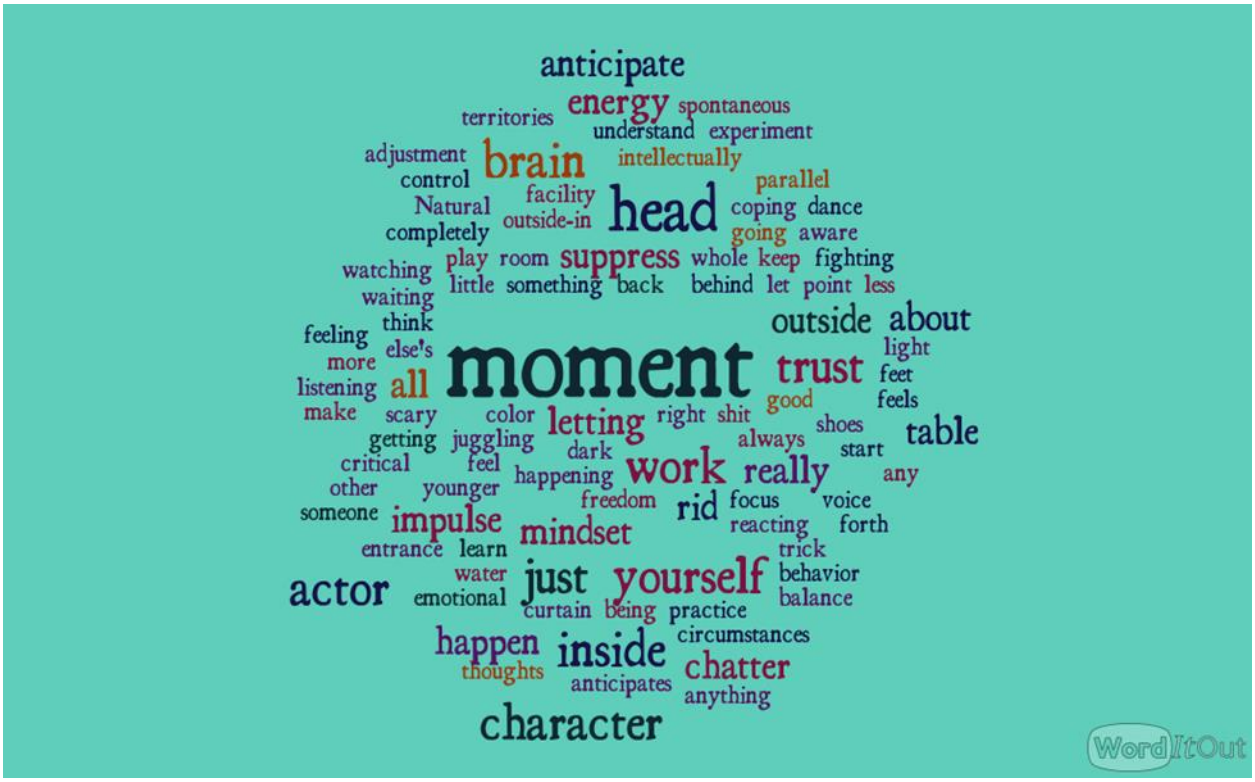

Figure E.1. Word cloud example: Using their mind.

Round Coding

The color-coded data were changed to a uniform black color and placed by revised Process Codes and sub-codes into a new Excel sheet (see Table E.7). The color-coding was removed to distance the researcher from the specific participant and focus on the data itself. However, to better understand the different personal approaches to acting by each participant, the interview data from the original transcriptions were reviewed and grouped by actor to delineate each actor's personal process in rehearsal, and when preparing the monologue submitted to participants for this study (see Table E.5 and Table E.6).

As each actor's approach to creating character is unique to their personality and their theatre training processes, it was important to look for any universal patterns and practices shared by the participants of this study. Finding shared practices might speak to shared patterns

of artistic decision making based on their metaperceptive processes. For example, while all the participants referenced reading the text as a beginning process for acting, they approached reading the text in different manners and for different reasons. In her process, Pauline reads the text multiple times and then begins to ask herself questions. Mark starts by reading the text multiple times and then scores it for impulses. Edward reads and takes notes by underlining and doodling, and Lily reads to note the words and phrases that stand out to her. Lily described looking for hooks in the text, Edward talked about breaking the text into beats, Mark scored his text looking for stops and rates of word speeds, Pauline broke her text into segments by motivation. While the participants used slightly different practices, they shared the same types of intent- to understand the story and their characters' place in it, and to organize the text into smaller parts to search for meaning in these segments. Going back and re-assembling the data regarding personal acting processes by participant enabled the researcher to extract shared practices across the very personal approaches to acting.

Visual maps were created from Process codes to further clarify the relation of codes and sub-codes. This process illuminated the connections between codes and sub-codes, and supported the process of identifying themes across the data sets. Analytical memos were written regarding possible themes and sub-themes. These memos were reviewed along with the visual maps and Excel data sets to look for themes.

Table E.5

Personal Acting Processes per Actor

Lily	Edward	Pauline	Mark
• Make copies mark on one, leave others blank blank slate to go back to • Notice things that stand out to her things that had a purpose • Envision the context of the performance who is the audience, director, type of show • Read through it casually pick out hooks sit on hooks (concepts, ideas) • heighten why those are important to the character • work on basic emotional power of the character • Create visual images, color, draw pictures, printed images, songs, art (morgue work) collage board	• Write things out; process of writing cements it for him • in pencil notes, underline doodling with a purpose • Read through it and mark script, circle things • Read through script multiple • Break it down into beats, sections see patterns mark them find rhythms • organize things – importance, action words • helps him as he reads circle words – things for emphasis or questions he has • Read it again think of physical things to do in each section • things to work through in rehearsal • Process gives him a place to start and somethings to go with	• Read play over and over get a sense of what they are saying; the story; where the character fits into the story • asks questions as she reads goal is to read it 100 times • Start writing what text/story says to her her character's perspective • Break up dialogue into different sections thinking about context, motivation • Read it out loud try to give it meaning • see what comes to her from doing that look for the internals, intention under words • if there's no back story she makes one up anchor/springboard to work from • Throws it all out mentally when she's on her feet in rehearsal	• Read it a few times • Score the text impulses of choice you have when you say the words in your head and read them out loud • inform yourself with natural impulses • uses symbols to mark stops, rhythm, speed of text (based on his study of Shakespeare and 'other rhetorical languages' • scoring choices unformed by emotions • writes words, notations that pop in to his head adds other words that inform different sentences or sections • notes images that words bring to his mind • makes connections from character/text to his personal life • Read it out loud go back and re-score • listen and feel the words don't follow previous scoring don't judge • Physically centers himself sit in a grounded position breath, close eyes, asks himself? s, think about things real to him • Get up on his feet and speak words out loud • speak words from the truth of who you are in this moment today • Work with director – see what they think and want from you

Table E.6

Results from Review of Individual Acting Approaches

Conceptual Processes	Actions
Comprehend the entire story	Reading, assigning meaning, physicalizing, vocalizing, visualizing, questioning
Break the story/script apart	Search for underlying meaning, emotion, character motivation
Connect to the character	Use imagination and personal connections
Collaborate to refine and retool	Use director and peers to clarify, adapt choices, and achieve deeper understanding

Table E.7

Round 3 Analysis: Artistic Decision Making Codes and Data Examples

Category	Descriptive Code	Process Codes	Process Sub-Codes	Data Example
Collaboration	Director	Envisioning the Performance		My first instinct is to jump to hers because that's what she wants.
		Working Together		I always try to listen to the director and then try and blend in other things that I've thought, bring those in later
	Audience	Audience Effecting Performance		Having the audience, and if the audience are with you, there's a communal something that happens, it doesn't happen a lot, but there is a communal something that happens which I think is just spiritual
Private Work	Text	Reading the Play		Then I would start reading it out loud, and trying to give some meaning to it. See what comes to me from doing that.
		Getting the Bigger Picture		I want to get a sense of the play and what it's giving me.
	Building Character	Working the Script	Marking the Script	There is something for me in the act of like while I'm reading something to actually marking on the paper or circling things, the actual physical act of that that helps me sort of cement it
		Using Their Imagination	Sewing Together Real and Imaginary	You know, how do I mesh those two people together?
			Drawing from Sources	I draw on anything I can at first that I know or that I've experienced, or that I've seen
			Flipping the Switch	There is difference though because the acting world is an imaginary world. It's ... We follow different rules

(*table continues*)

Table E.7 *(continued)*.

Category	Descriptive Code	Process Codes	Process Sub-Codes	Data Example
		Personal Experience	Drawing on Similar Experiences	I try to pull in experiences and things from my own life, even if they're not exactly direct parallels, but they could be similar.
			Personal Life Informing Character Development	There's always part of you in characters.
	Making Choices	Getting to the Core		I only want to stay with whatever epiphany I'm having or keep hearing it again and again. It sinks in because I find that it's important.
		Submitting to a Process		I would love to be able to get up and just do it like that! But it's not the process.
		Searching through Questions		Because I can't play the emotion, but why do I choose to say that to Austin then?
		Contexts Effecting Performance		Certain shows require your submersion in different ways
Affective Validation	Feelings	Measuring by Emotion		It felt good a few times, but it didn't feel very good today.
		Feelings Informing the Process		Because when I stood up when we rehearsed it felt false.
		Organically Happening		I know whether something will feel fairly organic or not
	Mind	Thinking Critically		When I go through it I try and flag it in a way that's like I need to understand why
		Being in the Moment		It can be ... It's a combination. It can be scary. It can be freeing. It can be stressful. It can make you angry. Especially when you're working with other people and they're not ...
		A Juggling Act		It's always in balance, you're always jumping back and forth.
	Impulses	Following Impulses		..but it feels, that impulse, I had to honor that. It was …I feel like that seems to be the truth at the moment, of not to do it

Thematic Analysis

Process Coded data, In Vivo data, individual actor's processes, visual maps (see Figures E.2 and E.3), and Word Cloud data were reviewed using Thematic Analysis. The data were divided into two thematic areas: Artistic Decision Making and Learning. Themes about Artistic Decision Making revolved around shared practices for making artistic decisions. Themes and

sub-themes generated from data reflected the need for individual and public work that was internally validated through feelings. Themes of Learning data reflected that the participants preferred subjects that allowed them to make use of their abilities in imagination and creativity. Even as adults reflecting on their younger selves as learners, it was evident that they preferred subjects that involved their aesthetic and metaperceptive abilities.

Final thematic analysis of data led to two overarching themes: 1. Artistic decision making results from actors' engagement in a cyclical process of private work, collaboration, and affective validation; 2. Actors learn best through hands-on, repetitious activities that engage them creatively and emotionally in an environment with known structures for success through failure. Under these larger themes were connected sub-themes reflecting how participants engaged in these processes of artistic decision making, and how these participants preferred to learn. For example, a sub-theme of the Collaboration process is that these collaborative interactions take place through table work, questions, and unspoken gestures. A sub-theme of Artistic Decision Making processes is that across' engage in private work to create character through imagination, connecting to personal experiences and base these choices in script work and personal acting styles. For a list of the major themes, see Table E.8. A complete list of all themes may be found in Table E.9.

Table E.8

Thematic Analysis: Major Themes

Major Themes	Sub- Themes
Artistic decision making results from actors' engagement in a cyclical process of private work, collaboration, and affective validation	Affective Validation guides the actor through feelings of truth, rightness, and organic connection. Private Work involves processes of reading, script work, and combining personal experiences with imagination to create characters. Collaboration is the interaction among and between the actor, director, cast members, and audience providing direction and feedback that effect artistic decision making.
These participants learn best through hands-on, repetitious activities that engage them creatively and emotionally in an environment with known structures for success through failure.	Preferred modes of learning are hands-on, involve repetition that leads to mastery; engage the actor creatively/imaginatively and emotionally; and provide understanding of the reason to learn. These participants preferred subjects such as English, English Literature and History to Math due to the perception of an ability to act creatively, engage in narrative, and see underlying connections. While these participants are confident to be uncomfortable or not know how to do something on stage, they are not comfortable not knowing how to do things in non-arts subjects.

Table E.9

Thematic Analysis: Complete List of Themes

Major Theme	Sub Theme	Sub Theme	Sub Theme
Artistic decision making results from actors' engagement in a cyclical process of private work, collaboration, and affective validation.	Actors' engage in private work to create character through imagination, connecting to personal experiences; base choices in script work and personal acting styles.	Personal acting styles guide the actor in sewing together personal experience and imagination to build character	A character is the result of a layering process of intellectual choices based in script work and imagination.
		All the actors' personal acting process followed a shared pattern of: comprehend the story, break the text/script apart, connect to the character, collaborate.	Actors break apart the text/script to find the underlying meaning, emotions, and character motivations.
			Actors connect to their character through imagination and personal experiences.
			Actors collaborate with the director and peers to refine, adjust, and clarify artistic choices.
		Actors' artistic decisions are based in information gathered from the script, the director's vision of the play, and the actors' own personal processes.	The text or play script is a grounding source of information for the actors.
			The text is read multiple times to search for surface and sub textual information and meaning.
			The actors had highly personal methods of marking the text to organize for deeper analysis.
			Actors' used their personal script marking processes to make decisions conjunction with the director's vision and the production.
		Actors' artistic choices are guided by their personal acting styles which are process- based.	Actors' feel that their processes cannot be rushed or truncated.
	.		These processes include a period in which actors allow themselves to fail, search for validation through questions and repetition, rely on the feedback of the director to shape decision making, and refine choices through interaction with other actors in rehearsal.

(table continues)

Table E.9 *(continued).*

Major Theme	Sub Theme	Sub Theme	Sub Theme
			The purpose of the process is to understand the essence or core of the character: why they say their words, what motivates their actions, how the actor will inhabit this character.
	Collaboration is a process of interaction between and among actors and the director as they rehearse.	Interaction occurs through table work, questions, and unspoken gestures.	The common purpose of the interactions to create believable performances, tell the story of the play/text, and mount a successful production.
		Collaboration later includes the audience during performance.	The actors' make choices based upon audience reactions and a feeling of energy the actor receives from the audience during performance.
		The director is viewed as a dominant voice in shaping the production and the choices made by actors.	Actors want to align the directors vision of the character with their personal vision.
			There is a balancing act between the director's choices and the actors' sense of ownership over the character.
			The actor needs space and time to make preliminary decisions regarding character before engaging with the director.
			Interacting with the director is viewed as collaborative process, over time that is organic in nature and involves listening, questioning, and adjusting.
		Repetition through rehearsal is an important part of the collaborative process as it allows the actor to learn through failure, to feed off fellow actors, and to ingrain physical movement into their subconscious.	
	Affective validation is the process of using feelings, emotional responses and instincts to validate artistic choices.	Actors are attuned to their emotional and instinctual responses when making artistic choices.	Actors use feelings and instincts as validators of choices in character building.
		Being aware of and following impulses is one way that actors engage in affective validation.	
		Actors engage in critical thinking as they are aware of their mental and physical processes while being guided by feelings of truth, rightness, and goodness.	Being in the moment requires actors to divert their mind from the private work used to create character and focus their attention to the life of the character on stage.

(table continues)

Table E.9 *(continued).*

Major Theme	Sub Theme	Sub Theme	Sub Theme
			Actors move back and forth between personal awareness and being in the moment as the actor has to anticipate but the character cannot.
Preferred modes of learning are hands-on, involve repetition that leads to mastery; engage the actor creatively/imaginatively and emotionally; and provide understanding of the reason to learn.	The actors all shared a preference for hands-on learning experiences in which the actors engage directly in the task at hand.	The actors prefer multiple attempts at mastering a task or concept.	Actors are more likely to feel comfortable attempting difficult tasks or concepts when they are aware of the process for learning through failure in that subject matter.
			While these actors are confident to be uncomfortable or not know how to do something on stage, they are not comfortable not knowing how to do things in non-arts subjects.
	The context of learning is important to actors.	Aesthetically pleasing and emotionally positive environments support actors in non-arts subjects.	
	The opportunity to learn through questioning, making emotional and personal connections to subject matter, and the ability to see the purpose of the task or concept helps actors learn in non-arts subjects.		
	These actors preferred subjects such as English, English Literature and History to Math due to the perception of an ability to act creatively, engage in narrative, and see underlying connections	The inclusion of narrative, discovery, and layers of meaning interested the actors in non-arts subjects.	Being able to engage their imagination or creativity were important to actors in non-arts subjects.

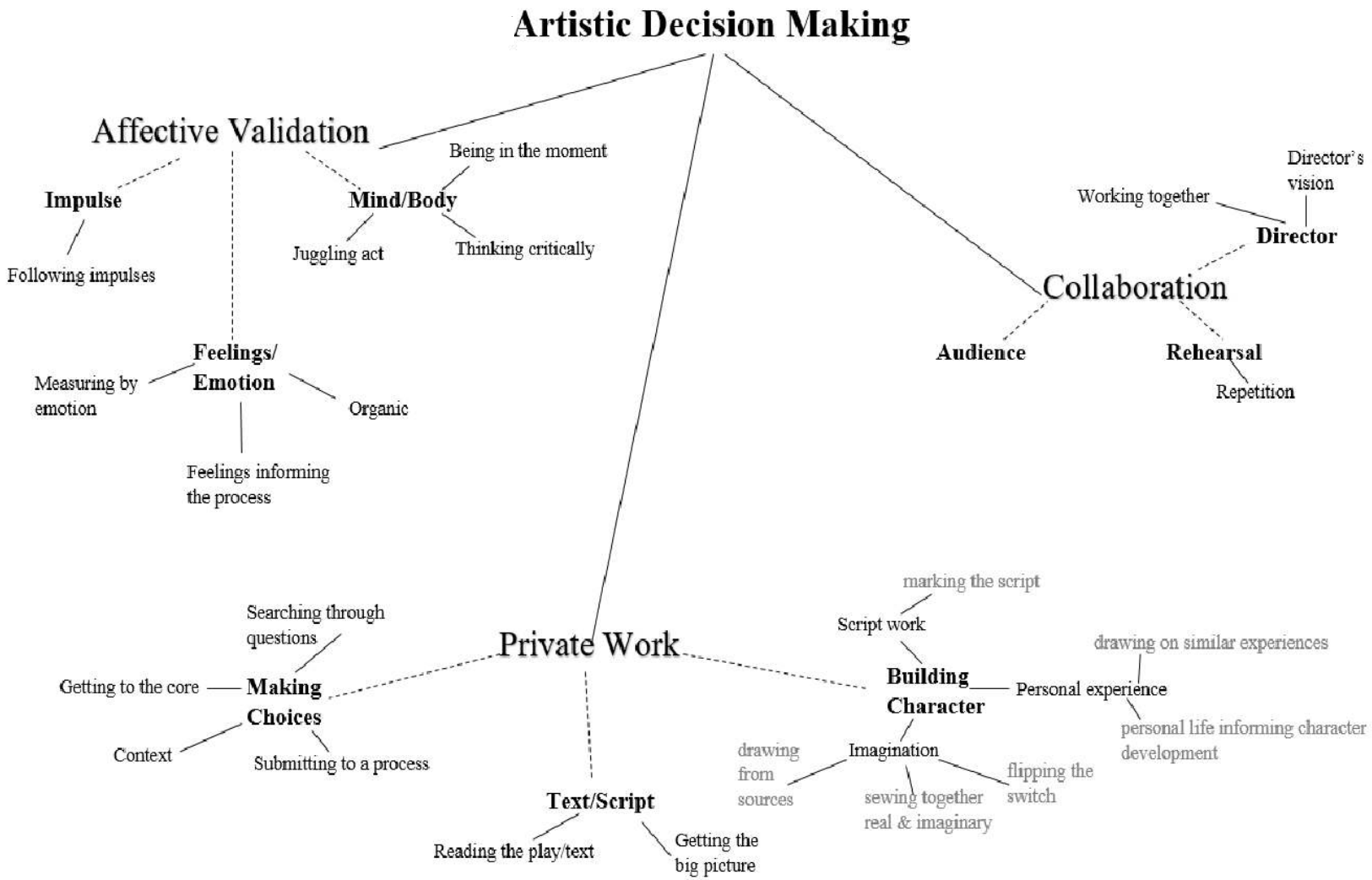

Figure E.2. Artistic decision-making framework.

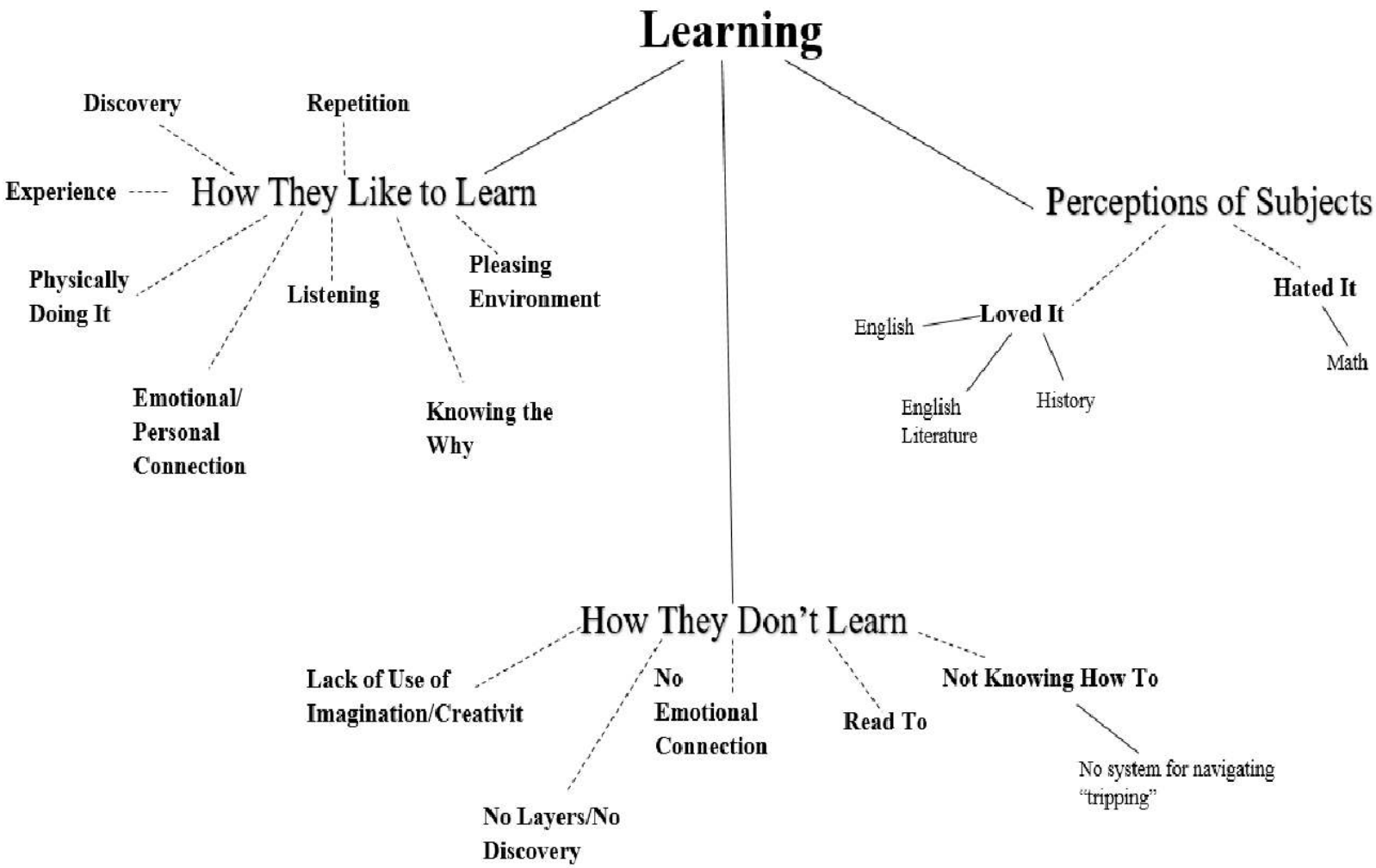

Figure E.3. Learning framework.

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