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Transformation and Arts Education, A Means for Equity for Underrepresented Gifted and Talented Students

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Concordia University–Portland

College of Education

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The Transformative Qualities of Fine Arts in Academic Settings:
A Means for Equity for Underrepresented
Gifted and Talented Students

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College of Education

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Doctor of Education in
Transformational Leadership

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Abstract

Challenging problems require transdisciplinary, novel solutions. Equity demands that all students receive appropriate services to develop talents and potential, however, poverty limits opportunity. According to the National Association for Gifted Children (2017), approximately 6% to 10% of all students exist within the gifted and talented range. A specific subset of this demographic, underrepresented gifted and talented (UGT) students fail to receive appropriate access to develop their creativity and leadership potential. Grounded in the Human Ecology Theory (Bronfenbrenner, 1979), this case study argues that talent development requires arts education to enrich and support UGT students. Application of a qualitative case study, design process allowed authentic interviews of professionals working in the fields of gifted and talented education, fine art, elementary education, and student advocacy to develop. The themes and opinions regarding equity, UGT students, and arts education discovered in this study provide salient recommendations for the academic community.

Keywords: underrepresented gifted and talented, equity, arts education, poverty

Dedication

This dissertation is dedicated to my husband, Patrick Molzahn, and our sons, Alexander and Niko. The three of you proved my inspiration and hope for the future. Keep reaching for the stars, dreams have a way of materializing.

Acknowledgments

A dream ignited in me four years ago to tell the world about the needs of underrepresented gifted and talented children. Art, while solitary, rarely happens without the support and guidance of numerous individuals. The same is true of critical writing.

Patrick, Alexander, and Niko for taking a leap of faith with me; thank you. Together, we have climbed many mountains.

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Mrs. F, I do not know if this is your real name, but thank you, this story is in part because of you.

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Chapter 1: Introduction

All children deserve the opportunity to develop their talents and reach their potential. Hurdles, whether visible or not, often limit talent development. Gifted and talented students from poor and minority backgrounds present a unique, underrepresented population, which often fail to reach its real potential. According to the National Association for Gifted Children (NAGC), gifted students comprise an estimated 6% to 10% of the total population. A common misconception posits that gifted students possess the ability to self-educate and self-advocate (NAGC, 2017). Lack of services for underrepresented gifted and talented (UGT) students present a loss of talent for the United States.

Neuroscience underscores the challenges that poverty, perceptions, and biases play in perpetuating debilitating situations. Researchers identified systemic and generational poverty as negatively affecting both mental and physical health and well-being of families (Hair, Hanson, Wolfe, & Pollak, 2015; Mani, Mullainathan, Shafir, & Zhao, 2013a). Students in generational poverty often face more physical and mental challenges in comparison to more affluent peers (Conway, 2016). Succinctly stated, poverty negatively affects children. Gifted children born in systemic and generational poverty often face significant hurdles to talent development.

Challenging problems require novel, transdisciplinary explorations to develop a clear understanding of an issue. McGregor (2004) explained the field of transdisciplinary study incorporated seemingly diverse subjects into a unified whole. Robinson and Aronica (2015) argued for creativity to inform and support 21st century learning. Henriksen (2016) explained transdisciplinary study incorporated creative thought to promote deeper analysis. This research study aims to explore UGT student issues through a multifaceted transdisciplinary lens incorporating arts education as a creative catalyst supporting this population.

Background, Context, History, and Conceptual Framework for the Problem

Equity, a historical problem. The role of education in producing citizens capable of supporting themselves and the extended community stems from ancient Greek pedagogy (D'Angour, 2013). Aristotle (384-322 BC) stressed empires succeed when education becomes a priority (Dunn, 2005). U.S. Census (2015) data, however, challenged the belief of education as a tool for social mobility across all demographic groups. McNeil and Blad (2014) and Reardon (2012) explained U.S. Census data painted a picture of inequity in access to resources for students from disadvantaged backgrounds. The disparity between belief and results pointed to a systemic design flaw limiting options for disadvantaged students.

Dr. Martin Luther King Jr. (1963) wrote, "A just law is a man-made code that squares with the moral law or the law of God" (p. 3). Before 1954, African and Native American educational opportunities were happenstance at best. Monson (2016) observed that despite societal norms, great thinkers, inventors, and leaders such as Frederick Douglass (1811-1894), Sojourner Truth (1797-1883), and Mary Golda Ross (1908-2008) contributed to American society. Still, systemic and systematic oppression created difficulties that limited opportunities for talent development for poor and minority populations. Cosmos (2016) reported on recent data confirming the disparity in educational opportunities for students based on demographic data. Even with similar test scores, fewer minority students appeared in gifted programs.

In 1965, Congress passed the Elementary and Secondary Education Act (ESEA) (Iorio & Yeager, 2011). The framework developed for ESEA encouraged a spirit of positive reformism including Title IX, ending gender discrimination in 1972, the Marland Definition of Giftedness in 1972, and the Individuals with Disabilities Education law of 1975. Bishop and Jackson (2015) observed the starkly similar demographics relating to poverty existed in 2015, as those that

precipitated Congress to action in 1965. Currier and Sattelmeyer (2012) stated data from the last 50 years showed marked inequity, especially in communities of poverty. Rabinovitz (2016) reported on research stating that socioeconomic discrepancies affected academic ability; students in affluent communities performed an average of four years above socioeconomically disadvantaged peers. Recent data continued to paint a picture of inequity in academic services (Plucker, Glynn, Healy, & Dettmer, 2018). Rather than expanding opportunities, the research pointed to a broader academic divide.

Programs designed to make education stronger for all learners, No Child Left Behind (NCLB) and the Common Core, received mixed results (Dee & Jacob, 2011; Robbins & Bauerlein, 2013). Reardon, Greenberg, Kalogrides, Shores, and Valentino (2013) reported on the failure of NCLB to provide adequate academic growth for all learners. Similarly, educational reforms, such as reduced class size, charter, or the choice schools program failed to provide substantive educational reform for disadvantaged students (Rabinovitz, 2016). Robinson and Aronica (2015) stated that current educational systems work under an antiquated factory model that fails to meet 21st century needs. Serino (2017) reported international data continued to indicate a slide in U.S. academic standing, in comparison to international peers. Mandated solutions failed to address critical issues for students.

Poverty and marginalization. Marginalized students potentially exist within multiple categories including minority, non-traditional sexual orientation, poverty, special education, and gifted and talented education. Jensen (2000) explained the marginalized label applies to people that exhibit characteristics significantly different from the norm. Molett (2013) stated unconsciously held stereotypes by people limit opportunities for marginalized groups. Challenges faced by marginalized students include biased perceptions of expected abilities. Na

(2012) stated bias, once internalized, created stress and health issues. Coleman, Micko, and Cross (2015) reported negative perceptions from the home community challenged capable students' desire to succeed. Explicit and implicit biases weave a complicated tapestry limiting options for UGT youth.

Striving for equity in gifted education. Solving inequity for UGT students requires a multifaceted approach. NAGC (2017) explained that the 1972 Marland Definition defined gifted individuals as students whose talents in general intellectual ability, specific academic aptitude, creative or productive thinking, leadership, or visual and performing arts deviated significantly from the norm. Further, the Marland Definition (NAGC, 2017) stated identified students must receive differentiated services targeted to their academic and talent development. Different states and school systems interpreted the Marland Definition within the parameters established in their communities. This study employed a Midwest state definition for gifted and talented student identification (as cited in the Midwest Department of Public Instruction website). This definition stated:

Pupils enrolled in public schools who give evidence of high performance capability in intellectual, creative, artistic, leadership, or specific academic areas and who need services or activities not ordinarily provided in a regular school program in order to fully develop such capabilities. (Midwest State Statutes § 118.35)

Under the directives of this definition, public school districts within this state developed programs to support and build student capacity to learn.

Acknowledgment that UGT students exist challenged researchers and policymakers to question system protocols. Sparks (2015) pointed out that even when attending the same school, students from low-economic backgrounds, often failed to receive gifted education services.

Researchers contended that one reason for this disparity centered on identification protocols (Giessman, Gambrell, & Stebbins, 2013; Kraeger, 2015; Peters & Engerrand, 2016). Naglieri and Ford (2015) warned existing identification tools failed to identify gifted students in poverty or from minority backgrounds. Kaya (2013) reported changing identification systems without supportive structures did little to remedy the situation. Benny and Blonder (2016) observed the lack of appropriate services for gifted student development minimized student success. Ford, Dickson, Lawson Davis, Trotman Scott, and Grantham (2018) wrote about the necessity of culturally responsive practice. Thus, a transformative approach to understanding issues surrounding UGT learners must target program development and content delivery.

Why art matters. Building relationships with learners and understanding education's role in passing along universal values require a willingness to accept the challenges facing a system through a novel lens (Robinson & Aronica, 2015). Hattie (2016) identified positive student and teacher relationships as a critical indicator of success. Nathan (2013) and Whitley (2017) spoke of the healing power that art brought to a fractured community. Musicer (2015) suggested the act of creation produced a nuanced, palpable change in student behavior through empathy awareness. Students in stressed circumstances often lack opportunities to develop critical skills that support cognitive functioning and promote learning. Art provides the medium to understand, explain, and give voice to the human condition.

Neuroscience further quantified the role that art education plays in supporting human development. According to Wilson (1998), scientists discovered a direct correlation between hand-eye coordination and cognitive functioning. Researchers further discovered that looking at art increases pleasure in the brain (Bolwerk, Mack-Andrick, Lang, Dörfler, & Maihöfner, 2014; Kaufmann, 2014). Bolwerk et al. (2014) showed participation in art creation increased cognitive

functioning than participants only viewing art. Grant (2016) stated the only correlation among Nobel Prize science winners was an art related hobby. Gifford (2012) observed art programming enhanced academic transfer. Exposure to the arts builds opportunities to develop gross and fine motor skills and provided chances to develop interpersonal and intrapersonal skills allowing students to tackle real-life challenges.

Statement of the Problem

Poverty creates educational inequity regardless of academic ability. Lack of resources limits opportunities for UGT students (Plucker, Giancola, Healy, Arndt, & Wang, 2015). NAGC (2017) recognized that situations such as poverty and marginalization, cultural biases, and physical and educational disabilities often hinder opportunities for UGT students. Research on equity confirmed that negative bias alters human behavior with predictable accuracy (Na, 2012). Hammond (2015) explained that stereotype threat creates specific challenges for minority learners. Kaya (2013) warned UGT students often failed to succeed when immersed in advanced classes, without academic support. Charmaraman and Hall (2012) explained at-risk students require a broader scope of services.

The phrase *academic achievement* denotes an enduring divide in academic performance between groups among socioeconomic and racial or ethnic lines. Willis (2015) explained the achievement gap begins early. Kornrich and Furstenberg (2013) reported on familial spending trends showing an increase in early childhood spending. Affluent children often attend extracurricular programs such as clubs, theater groups, music lessons, and sports teams supporting their creative development. Children in economically distressed communities, meanwhile, suffer from the lack of said opportunities. Rather than supporting programs that enrich student lives, many schools eliminated art, music, and physical education from the

curriculum (Gormley & McDermott, 2016). Thus, UGT students received even fewer opportunities to enrich their academic experiences and strengthen their neural pathways. Poverty creates challenges for students; however, positive relationships help learners grow. When students believe they are valued and valuable to the system, attaining high standards becomes reachable.

Purpose of the Study

According to Creswell (2014), qualitative research extends scientific knowledge through high-level inquiry. This study built the argument for arts as a transformative tool for UGT students. Neuroscience research supported the theory that participating in the arts as both a spectator and creator enhanced cognitive brain development. Bolwerk et al. (2014) reported on conclusive findings regarding the long-term neural effects of visual art on participants. Robinson (2013) reported that art education supported underrepresented populations. This research proposal intended to extend the discussion regarding arts education, equity, and UGT students.

Research Questions

R₁: How and to what extent does arts education create an equitable learning environment for UGT students?

R₂: How and to what extent does art programming promote the development of academic tenacity for UGT students?

Rationale, Relevance, and Significance of the Study

This study explores the role arts education played in supporting UGT students' academic success. Kim (2011) reported that longitudinal data on creativity showed a marked drop in creative thinking in the United States. Zaidel (2014) explained the multifaceted nature of art fosters communication and builds creative neural pathways of primordial necessity. Succinctly,

humans required creative thought to evolve. When students lack opportunities to develop fine-motor problem-solving skills inherent in art creation, critical neural pathways fail to grow. This study extends the discussion of education and equity for educators, administrators, and policymakers in education.

Deficiencies in current literature. The literature review, Chapter 2, presents quantitative proof of the positive impact arts education played in the academic development of marginalized populations (Catterall, Dumains, & Hampden-Thompson, 2012). The research further presents data on the adverse effects of poverty on all demographics and the disproportionate levels of poverty in minority communities (Chappell & Cahnmann-Taylor, 2013). The research findings confirmed the underrepresentation of poor and minority students in gifted classrooms (Peters & Engerrand, 2016). Adjusting identification formats for gifted inclusion also failed learners; the complexity of gifted classrooms proved challenging for underrepresented learners (Kaya, 2013). The consideration of arts as a tool for strengthening underserved gifted learners, however, was not present in the current discussion.

Definition of Terms

Academic disadvantage. Banerjee and Lamb (2016) defined disadvantage as a systemic condition beginning in the womb and leading to poor academic performance.

Academic tenacity. Dweck, Walton, and Cohen (2014) defined academic tenacity as the mindset and skills promoting student diligence, perseverance, in working towards academic goals.

Achievement or educational gap. The achievement or educational gap refers to the persistent difference in academic achievement among students from marginalized communities and White students (U.S. Department of Education, n.d.).

At-risk students. According to the U.S. Department of Education (n.d.), at-risk students face barriers to academic success. These barriers include but are not limited to not matriculating due to factors such as poverty, attending high-minority schools, physical or mental disabilities, homelessness or foster care, interactions with the law, and speaking English as a second language (U.S. Department of Education, n.d.).

Creativity. Novel solutions to various problems for societal benefit (Zaidel, 2014). Heilman (2016) added that creativity encompassed discovery of relationships combining independent variables. For example, a tapestry represents a visual picture assembled from threads knotted together on a loom.

Educational equity. According to the Center for Public Education (2016), educational equity means appropriate educational services are not limited based on gender, ethnicity, or economics. Further, these services included appropriate programs for all students.

Equity. According to the Center for Public Education (2016), in an equitable system all students receive services needed to succeed through matriculation and beyond.

Excellence gaps. According to the NAGC (2015a), excellence gaps refer to the disparity in available services for capable students from underrepresented communities.

Explicit or perceived bias. McGill-Johnson and Godsil (2014) explained explicit or perceived bias refers to attitudes or beliefs held about a group of people.

Gifted and talented. Defined as possessing unique or advanced abilities, gifted and talented students often exhibit a heightened desire to learn and the ability to think critically and develop higher-level connections (NAGC, 2017).

Human Ecology Theory. Developed by Bronfenbrenner (1917-2005), the Human Ecology Theory (HET) organizes and looks for interconnectedness between people and their

environments. This theory has five categories: microsystem, mesosystem, exosystem, macrosystem, and chronosystem.

- *Microsystem*: One of the five categories of the HET; refers to those areas directly involved in child development, the family, school, and neighborhood.
- *Mesosystem*: One of the five categories of the HET; refers to the interdependence between the various microsystems.
- *Exosystem*: One of the five categories of the HET; refers to events affecting the child, but not within the control of the child.
- *Macrosystem*: One of the five categories of the HET; extends the reach of the exosystem.
- *Chronosystem*: One of the five categories of the HET, focusing on the time required for development.

Implicit bias. Unconscious or implicit bias occurs deep in the subconscious and affects how people behave concerning explicit or perceived bias (Blair, Steiner, & Havranek, 2011).

Inequity. Lack of fairness or justice. Carter and Reardon (2014) explained social inequality included less access to economics, health services, political power, and cultural identity.

Inequity in education. The Center for Public Education (2016) explained structural and social barriers challenge the idea of public education being accessible to all by limiting funding, curricular options, teacher training, and discipline policies.

Marginalization. Jensen (2000) stated marginalization carried multifaceted identifiers including, but not limited to, poverty, and other behaviors that deviated someone from the dominant group.

Professional. Evetts (2014) defined professional as relating to a career that required attainment of higher training or education.

Socioeconomic status. According to the American Psychological Association (n.d.), socioeconomic status refers to a person or group social standing measured through a combination of education, income, and occupation.

Talent development. According to the National Association of Gifted Children (2015), talent development encompasses a multi-faceted framework recognizing talent and ability require support to develop or, conversely risk loss due to neglect.

Transdisciplinary knowledge. McGregor (2004) explained transdisciplinary knowledge building defines academic disciplines that work together and search for underlying reasons behind problems.

Underrepresented gifted and talented students. Researchers such as Plucker, Hardesty, and Burroughs (2013) explained excellence gaps exist, limiting options for students from poor and underrepresented communities.

Assumptions, Limitations, and Delimitations

Assumptions. Qualitative research extends a scholarly discussion. Underrepresented gifted and talented students present a specific population within the field of gifted education (NAGC, 2017). This researcher assumed that the findings from this case study would extend the discussion on service delivery options for UGT students. Further, interviewing professionals the researcher assumed positive intent and honest responses to the questions.

Limitation. Qualitative research extends scholarly discussion and thus needs to meet established parameters regarding its construction, validity, and reliability. This study faced a limitation of sample size and research methodology. Yin (2014) explained that focus on these

issues strengthens the overall scholarly dialogue. These limitations present a challenge to the reproducibility of the study. Creswell (2014) and Yin (2014) explained that recognition of qualitative study limitations enable the researcher to suggest continued research. The focus of this study centered on the role of art as a tool for equity for UGT students. Within the limitations of this case study design theories and ideas for further research might emerge.

Delimitation. Delimitations control the parameters of a study. Bound within a Midwest state, delimitations for this study included setting, instrumentation, and transferability. Creswell (2014) and Yin (2014) explained case study research extends academic debate. Interviews with professionals in the fields of art and art education, gifted and talented students and UGT students, poverty, and equity issues added to the current discussion. While the research bound the study to a geographic location, the discussion broadened the academic dialogue on the issue of equity and UGT students.

Summary

Education plays a critical role in society. Simply stated, education helps people find gainful employment and support themselves, their families, and communities. Research confirmed a consistent and growing divide in academic successes for UGT students. This study defines UGT students as coming from low economic status, disadvantaged, and minority backgrounds. Defining delivery models that promote student equity and build academic abilities can offer tools for teachers and administrators to use. The dissertation includes the introduction, Chapter 1, literature review, Chapter 2, methodology and proposal of study, Chapter 3, results, Chapter 4, and conclusions and recommendations, Chapter 5.

Chapter 2: Literature Review

Introduction

Belief in the future and faith in a better tomorrow provide a catalyst for education. For many students, parents, and teachers, poverty creates challenges in accessing appropriate learning opportunities. Underrepresented gifted and talented (UGT) students present a specific population within the gifted and talented community. According to the NAGC (2016), 6% to 10% of the total population qualifies for services under the gifted label. The topic of UGT students, while broad, developed defined parameters through analysis of a Midwest state. This chapter introduces research central to the argument that poverty affects brain development and limits opportunities for UGT learners to succeed academically. Further, the chapter presents research on the importance of arts education as an academic tool for marginalized learners, defined as students from poor socioeconomic or minority backgrounds. The Human Ecology Theory (HET), developed by Bronfenbrenner (1979), framed the research methodology. The specific questions underlying this research state:

R₁: How and to what extent does arts education create an equitable learning environment for UGT students?

R₂: How and to what extent does art programming promote the development of academic tenacity for UGT students?

Conceptual Framework

Throughout this literature review, a conceptual framework that grounded the relationship between arts education, equity, and marginalized populations arose. According to Berman and Smyth (2015), both an implicit definition of a conceptual framework and a specific role for the framework exist. Specifically, the conceptual framework provides a support system to guide the

research process. For this literature review, research terms included the categories of poverty, arts integration, marginalized populations, minorities, equity, school funding, gifted and talented, and demographics. Berman (2013) clarified that backward design supported the development of conclusions drawn from the research. The conceptual framework format encouraged higher-level synthesis and analysis.

Identifying inclusion and exclusion parameters placed the research within a logical setting. The interconnectedness of the research topic created inclusion criteria combining neurological studies on poverty, arts integration, and marginalized populations. Emphasis on the core subject of arts education guided the analysis and synthesis process. Additionally, the conceptual framework enabled the researcher to explore personal bias (McGuire, 2014). Understanding bias allowed the researcher to develop a clear and concise review of the evidence. Various research engines such as ProQuest and SAGE provided articles for consideration.

Review of Research Literature and Methodological Literature

Theoretical framework: HET. While all people face challenges, for disadvantaged people, specific struggles have identifiable patterns. Low-economic status families, for example, often confront housing insecurity (Desmond, 2016; Desmond & Gershenson, 2016). Constant moving challenges academic continuity (Schwartz, Stiefel, & Cordes, 2015). Reardon (2012) asserted income inequality produced the highest achievement gap divide since 2001. Cloney, Cleveland, Hattie, and Taylor (2016) stated location affected daycare and preschool choice. Therefore, income insecurity, coupled with a lack of housing affordability, created both physical and mental hurdles hindering academic progress.

The complexities of poverty required an interconnected theory to ground this research. The HET provided the perfect mechanism to support the analysis of poverty on marginalized

populations. Explained at length in the following paragraph and throughout this chapter, the five layers comprising the HET created a systematic outline for the research. Burns, Warmbold-Brann, and Zaslofsky (2016) warned that the application of HET proved challenging for many practitioners if applied in isolation. Each layer of the HET builds on the one before. For a concise evaluation of the effects of poverty on marginalized communities, all five levels of the HET theory needed consideration.

Table 1

HET Framework

Microsystem	Mesystem	Exosystem	Macrosystem	Chronosystem
Family School Community	Interplay between microsystem	Affects both micro and mesosystems; (e.g. school funding)	Services provided that support the exosystem (e.g. enrichment classes)	Time needed for development

Bronfenbrenner (1979) theorized that people existed biologically and relative to their environment (Table 1). The five layers forming the HET framework include the microsystem, the mesosystem, the exosystem, the macrosystem, and the chronosystem. The microsystem referenced those areas directly involved in child development: the family, school, and neighborhood. Within the microsystem, the family played the most important role. The mesosystem recognized the interdependence between the various microsystems. The exosystem focused on events affecting the child, but not within the control of the child. For example, school funding, or lack thereof, created stresses for the community and accentuated the achievement gap (Reardon, 2012). The macrosystem extended the reach of the exosystem. Again, with school financing as an example, inequitable funding distribution enabled affluent

enclaves the ability to provide more resources for students. The chronosystem stems from the Greek word *chronos*—time. According to the HET, children require time to develop the skills required to function in the world. Children in stressed communities often lack that time.

Gifted children exist in all socioeconomic demographics. Bronfenbrenner (1979) identified the microsystem as the focal point of the HET philosophy. Hidalgo (2016) stated that parenting gifted children included unique challenges for families. Secure home and community environments created stable foundational developmental opportunities for families. Financially unstable families often lack access to quality housing or community services, including adequately funded schools (Desmond, 2016). Plucker et al. (2013) stated lack of educational opportunities created by poverty created a systemic gifted underclass. Children lacking a strong microsystem faced significant challenges in their long-term academic careers.

Economically stable parents possess the ability to provide opportunities supporting individual child development. Kornrich and Furstenberg (2013) analyzed familial spending patterns and discovered an increase in spending on young children; families with money spend more of it on their children. The microsystem system enriched the mesosystem. In turn, the exosystem provided better resources, supported with macrosystemic tools and the time (chronosystem) to accomplish critical goals. Jackson, Johnson, and Persico (2016) reported that exogenous spending created a positive outcome in student performance. In marginalized communities, the systemic nature of poverty contributed to an adverse HET system. For UGT children the chronosystem rarely offers adequate talent development opportunities.

Literature Review

Designed to present the rationale for the specific thesis, the argument of discovery organized existing research into a cohesive narrative (Machi & McEvoy, 2016). The literature

review for this study began with research on poverty. The development of a comprehensive understanding of poverty as it affects individual people and greater communities built an awareness of the challenges faced by UGT students. The argument then extended to develop the case for arts education as a tool supporting brain development and academic tenacity for underrepresented students. The argument of discovery concluded with research on issues specific to UGT students.

Systemic poverty. Accepting poverty as a debilitating situation contradicts the American can-do ethos. However, historical research confirmed that concern over educational equity recognized poverty and minority status as academic hindrances. The report *Equality of Educational Opportunity* (Coleman Report), initially published in 1966, questioned the belief of separate education for poor and minority populations (Coleman et al., 1966). With one of the most extensive databases available (over 650,000 participants), Coleman et al. (1966) recognized the role economic disparity played in education and proposed integrated educational opportunities for Black or African-American children. Currier and Sattelmeyer (2012) reported on an escalation of inequitable educational and economic opportunities for students in poverty or from minority backgrounds.

Poverty, financial implications. The financial realities faced by people in poverty prove quite challenging (Desmond, 2016; Edin & Shaefer, 2016). MassLegal Services (2017) stated that the federal poverty level designations established poverty rates of \$12,000 annually for one individual; \$16,000 for two; and \$20,000 for three. Edin and Shaefer (2016) reported that the societal safety net intended to help families often limits services with dehumanizing effects. With an ethnographic study on poverty and homelessness, Desmond (2016) explained housing

insecurity created an extensive discontinuity in health and academic services for people in poverty.

Calculating the tax withholdings on these rates produced an even starker picture. The average post-tax salary for a person at the \$12,000 level equates to just over \$10,000. Desmond and Gershenson (2016) noted that most poverty level positions lacked employee benefits or opportunities for people to accumulate wealth. Nadeau (2017) reported that minimum wage salaries fall short of meeting the needs for economic survival. A single parent working for minimum wage would need to work three full-time jobs to earn enough income to support a child.

Poverty and neuroscience. Current science, moreover, painted a grim picture of the realities of poverty and cognitive functioning (Hair et al., 2015). Herman-Smith (2013) explained neurological risks, genetics, and parenting affect the transmission of disadvantage hindering the opportunity for academic achievement. Flores (2012) reported 22% of all children lived below the federal poverty level; demographically, these children come mainly from African-American, Latino, and Native American homes. Jensen (2006) wrote financially stressed families often lack the time required to analyze issues before making decisions. For those under financial stress, navigating challenging situations often exasperated a situation. Reduced educational opportunities for LES children and their families created a more significant income gap.

Feelings of scarcity further exasperate decision-making skills. Mani et al. (2013a) demonstrated the scarcity effect produced reduced bandwidth across all demographic populations. However, financially secure people navigated stressful situations with less worry. Mani et al. (2013a) began the research by observing work-related behavior patterns exhibited by

fruit and flower vendors in India. Caught in a trap of borrowing a significant amount daily (1,000 rupees) for a net-gain income of 50 rupees, the vendors worked very hard for minimal reward. Next, Mani et al. (2013a) field-tested the scarcity theory in an American urban setting. Participants worked on intelligence tests while contemplating two theoretical car problems costing either \$150 or \$1,500. The researchers discovered that both wealthy and poor people performed equally well when considering the cheaper repair. People from socioeconomically stressed backgrounds scored significantly worse on the cognitive tests when faced with the \$1,500 car repair scenario.

To eliminate perceived bias, Mani et al. (2013a) extended their research to include a specific demographic from India: sugarcane farmers. The sugarcane farmers received their annual income after the harvest, precipitating the need to budget accordingly for the year. Testing the farmers before and after the harvest, the researchers discovered a significant change in cognitive abilities, averaging to a 15-point variation. When the farmers faced scarcity, their cognitive bandwidth negatively affected their problem-solving skills. Wicherts and Scholten (2013) challenged the research findings. Mani et al. (2013b) proved the research was replicable and statistically significant. Claro, Paunesku, and Dweck (2016) reiterated that economic stability provides quantifiable academic success. Lack of a mesosystemic support mechanism escalated poverty-induced, cognitive disability.

Along with challenged and challenging cognitive bandwidth, poverty hindered brain development. Luby et al. (2013) and Hair et al. (2015) conducted studies seeking correlations between poverty, brain development, and poor performance on standardized test scores. Luby et al. (2013) reviewed data on brain development and correlated stressful situations with emotional development. According to the findings, children from stressful backgrounds, such as poverty,

suffered cognitively. Based on the findings, Luby et al. (2013) stated early childhood poverty posed significant threats to brain development.

Hair et al. (2015) analyzed 823 magnetic resonance imaging (MRI) scans from 390 children to discover a statistically significant reduction in gray matter on scans of children from low-socioeconomic backgrounds. Measurement of the children's amygdala proved constant for all participants. According to Hair et al. (2015), the consistent amygdala size versus the statistically significant reduced gray matter for children from low-socioeconomic backgrounds validated the research findings' accuracy. The findings led the researchers to conclude that poverty produced quantifiable lags in brain development creating up to a 20% gap in test scores of disenfranchised students. Bronfenbrenner (1979) proposed time, the chronosystem, created opportunity for human development. For families living in poverty, however, limited options for quality interventions exist.

National census data. Developing an understanding of the demographics surrounding UGT student populations strengthens the study. Macartney, Bishaw, and Fontenot (2013) reported demographic poverty rates by population. Proctor, Semega, and Kollar (2016) reported that 43.1 million people live in poverty. Further, the data identified that poverty correlated strongly with minority populations (Proctor et al., 2016). Cultural and socioeconomic reasons traditionally created communities centered on ethnic categories.

Armstrong (2000) traced and defined this phenomenon across the world explaining that neighborhood enclaves created safe boundaries for minorities to exist. Comparing poverty distribution within demographic enclaves builds a broader understanding of how poverty affects groups of people. White and Asian populations experienced the same percentage of poverty (11%). However, for the relative difference in size between the two communities ensured more

Asian people interact with people in poverty in the Asian than White people interact with people in poverty in the White community. Similar trends of high concentration of poverty exist in Black or African-American and Latino population. For example, Black or African-American people comprise 12% of the total U.S. population and experienced 25-28% poverty. Thus, with a total population of approximately 40 million people, 10-15 million people experienced poverty. The U.S. Census Bureau (2015) provided data on poverty delineated by population (Table 2).

Table 2

2015 U.S. Census Data

Ethnicity	Percentage Rates	Population Trends	Poverty Rates
White	61%	195,645,900	11%
Black or African-American	12%	39,257,300	25-28%
Latino or Hispanic	18%	56,872,700	22-25%
Asian	6%	17,741,700	11%
Native American	1%	2,493,900	25-27%
Native Hawaiian/other Pacific Islander	0%	887,300	18-20%
Two or more races	2%	5,969,700	19-20%
Total	100%	318,868,500	

Local demographic norms. Developing an understanding of demographics ensures an in-depth exploration of the systemic role that poverty plays within society. Demographically, the Midwest state utilized for this study differed significantly from national norms. According to the U.S. Census Bureau (2017), the state demographics consisted of 87.5% White, 6.6% Black or African-American, 1.1% Native American or Alaskan, 2.8% Asian American, 0.1% Native Hawaiian, 1.9% two or more races, and 6.7% Hispanic or Latino. Understanding the general

demographics of specific states enabled the researcher to define the parameters and frame the argument for this study.

The Institute for Research on Poverty (2016) identified four counties in the state that exhibited significant concentrations of poverty: *D*, *W*, *K*, and *M*. Of these counties, *D* reported an 80% White population with approximately 40,000 people in poverty. *W* reported an 88% White population, 12,000 of those people fell within the poverty guidelines. *K* reported a 75% White population with approximately 12,000 White people in poverty. *M* presented the most diverse demographics with a White population at approximately 52%, a Black or African-American population at approximately 27%, and a Latino population at approximately 14.5%. Poverty rates for *M* County further changed the pattern for the rest of the state with 83,000 Black people in poverty, followed by 73,000 White people.

Poverty and school funding. Bronfenbrenner (1979) explained that the exosystem, the third layer of the HET, existed separate from, but affected child development. School funding exists within this layer. According to the Department of Public Instruction website, the Midwest state specific to this study, relied on revenue from the state (45%), federal (8%), and local sources. Local funding comes from either a general fund allocated based on individual district taxable income per pupil variable or categorical aid based on specific program and grants awards. Examples of categorical programming aid include aid to high poverty districts, aid for libraries, and transportation aid. Unlike general aid, categorical aid limits the district to resource distribution.

Location affects systemic poverty (Currier & Sattlemeyer, 2012; Desmond, 2016). People living in marginalized communities experienced higher rates of downward economic mobility affecting their ability to provide adequate opportunities for their children. In turn,

children entered kindergarten with a widening knowledge gap. The development of a solid understanding of the extensive role of poverty in families, communities, and schools, built a strong foundation for the argument of discovery. This Midwest state reported a relative median income of \$55,638. According to the U.S. Census Bureau (2017), the average per capita income for residents was under \$30,000. For a family struggling to survive, low wages meant reduced resources to supplement and enrich children cognitively. For a community, low-income families mean fewer local revenue sources.

Theoretically, education provided opportunities for upward mobility. Kraehe and Acuff (2013) explained marginalized populations including underserved gifted, experienced limited or limiting parameters within the existing system preventing access to opportunities. Leachman, Albares, Masterson, and Wallace (2016) reported state data reflected an overall decrease in spending on education. Milner and Laughter (2015) warned, without addressing race and poverty, good intentions failed. The exosystemic interdependence on micro- and mesosystemic support, rather than spiraling people out of poverty, increased it. For many marginalized students, education failed to provide the intended effects of upward mobility.

Poverty and educational mandates. Response to the growing inequity resulted in mandates and public policies such as No Child Left Behind (2001) intended to promote academic success. Compliance with No Child Left Behind (NCLB) mandates forced many schools to re-allocate funds intended for arts programming to remedial learning classes (Gormley & McDermott, 2016). Kraehe and Acuff (2013) reported interpretation of the NCLB mandates caused poorer school districts to reduce funding from arts education for core subjects. Jackson et al. (2016) theorized tying educational funding to test results provided erroneous evidence of

progress. Arguably, the intended results of the NCLB mandates created the unintended consequence of reduced arts programming.

Many states adopted report cards to gauge school effectiveness as an accountability tool mandated by NCLB. The K-12 public school system encompassing the Midwest state bounding this study supports approximately 450 schools. These schools receive annual grades with assigned numerical values. The values further correlate to descriptors such as Failed, Met Few, Met, Exceeded, and Significantly Exceeded expectations. According to the Midwest State Department of Public Instruction website, during the 2015-2016 school year six of the Midwest state schools failed to meet expectations, 33 met few expectations, 144 met expectations, 186 exceeded expectations, and 54 significantly exceeded expectations. Analysis of attendance and graduation rates showed no significant variations amongst the districts; most districts were in the 33-40% rate for both attendance and graduation, regardless of the report card (Table 3).

Table 3

Midwest State Department of Public Instruction Data

Rating Scale	Number of Schools	Average Attendance Rate	Average Graduation Rate
Failed to meet expectations	5	33-40%	33-40%
Met few expectations	33	35-40%	26-40%
Met expectations	144	33-40%	33-40%
Exceeded expectations	186	35-40%	35-40%
Significantly exceeded	54	33-40%	33-40%
Alternative Plan	1		

The data, further, confirmed demographic distributions, with the majority of schools in the categories of exceeds to significantly exceeds expectations reporting a White population of >85%. In fact, only seven school systems within the 60-65% White range reported a demographic distribution similar to the overall U.S. Census Bureau data (Table 2).

Diminishing resources and decisions. Research on the scarcity effect proved that the threat of economic scarcity diminished problem-solving capabilities of both economically advantaged and disadvantaged individuals (Mullainathan & Shafir, 2014; Plucker et al., 2013). School districts, facing declining budgets, look for expedient resource allocation formulas (Gormley & McDermitt, 2016). Melta (2015) explained programs deemed non-essential such as the arts, physical education, and gifted and talented services often experience reductions or total elimination. Conversely, Leachman et al. (2016) reported data proved socioeconomically disadvantaged students able to attend well-funded schools increased chances of matriculation and decreased continued poverty cycles into adulthood.

With the specific Midwest state demographics significantly divergent from national norms, poverty, appeared to correlate with higher rates of schools marked as failed to meet, met few, and met expectations than with those that exceeded and significantly exceeded expectations. According to the Department of Public Instruction Report Card for the 2015-2016 academic year, all five schools that failed to meet expectations reported poverty rates of 40% or more. Of the 33 schools that met few expectations, 29 reported a poverty rate of 40% or higher. Of the 144 schools that met expectations, 88 reported a poverty rate of 40% or greater. Of the 186 schools that exceeded expectations, 67 reported a poverty rate of 40% or above. Lastly, of the 54 schools that significantly exceeded expectations, only 12 reported a poverty rate of 40% or above.

Accepting the existence of low socioeconomic standing across all demographics challenges perceptions regarding the face of poverty. Looking at the specific Midwest school report card data demographically it became apparent that socioeconomic standing correlated with overall school success. Data reported by the Midwest State Department of Public Instruction

website reflected that the state maintained a majority White demographic. Two of the failing schools reported a majority White demographic; and 13 that met some expectations reported majority White. Conversely, 128/144 schools meeting expectations; 178/186 schools exceeding expectations; and 54/54 schools significantly exceeding expectations reported majority White populations.

Why arts education. Ideally, arts education exists solely on the merits of its role in shaping the history of humankind. Art supports novel thinking, takes time and encourages play, all integral aspects to human development. Zaidel (2014) explained that art creation marked a developmental milestone in human development. The NAGC (2014) supported the inclusion of arts education in all grades and schools and recommended differentiated opportunities for students with superior talent. Furthermore, the NAGC recognized arts education supported students in interdisciplinary studies (NAGC, 2017). Vande Zande, Warnock, Nikoomanesh, and Van Dexter (2014) stated art education promoted high-level, cognitive functioning skills including analysis, synthesis, and evaluation. Thus, learning about art enables people to develop higher-level problem-solving skills.

Reality differs significantly from ideal scenarios. Scripp and Paradis (2014) suggested one reason for eliminating arts education for many districts stemmed from inconsistent and contradictory research. The authors claimed the noted positive effect of arts integration takes time to be observable (Scripp & Paradis, 2014). LaJevic (2013) theorized lack of training hindered teachers from incorporating arts education activities into daily curriculum. However, Beaty, Benedek, Silvia, and Schacter (2016) reported on the neuroscience showing connections between art and specific brain area connectivity. Additionally, Cameron et al. (2012) reported

that fine motor development affected academic success even in socioeconomically advantaged students. Arts education plays a vital role for all children.

Art and marginalized populations. While poverty affects all demographic populations, current data underscored the inequitable distribution of poverty in minority enclaves (Kaiser Family Foundation, 2015). According to Craig and Richeson (2014), by 2042 America will experience a majority-minority demographic shift. The NAGC (2015b) recognized that lack of opportunities for marginalized populations created a significant talent loss for the country. Reduced funding for social services escalates inhospitable situations and poses broad socioeconomic ramifications for the greater majority-minority society of the future.

Strong arts programs strengthen community affiliation, building strong mesosystemic relationships. O'Connor (2014) argued community-based arts education (CBAE) programming benefit both the participant and the community. Through a critical qualitative approach, O'Connor (2014) developed the understanding that CBAE programs encompassed diverse mediums and partnerships. Often CBAE programs partner with schools and provide arts instruction during the school day. Working in such a capacity O'Connor (2014) observed the stark inequity of resources available based on school location. Pedagogically, CBAE programs provide participants with opportunities to experience success, play with various media, and interact with artists as members of their community. While the study focused on a small research body, the observations aligned with current research on the importance of arts education for marginalized populations.

Evidence supporting arts education included both quantitative and qualitative proof of the importance of art for brain development (Zaidel, 2014). Acuff, Hirak, and Nangah (2012) suggested arts programming required a comprehensive, inclusive narrative. Boske (2012)

presented research on art as a tool for leadership development and narrative creation. Building a stronger voice necessitated introducing students to the collective history of humanity. Bowen, Greene, and Kisida (2014) suggested the correlation between arts and academic performance for marginalized students implied policy changes affording students better exposure to the arts. Systematic art education provides opportunities for children to develop higher-level cognitive functioning skills.

Well-developed arts integration enables cultural awareness and pride to develop. Hammond (2015) theorized culturally relevant teaching enables ethnically strong communities to prosper. Ellis (2013) reported that use of Africentric (author defined) arts integrated curriculum produced stronger academic results. In this qualitative case study, Ellis (2013) focused on the adult perceptions of an Africentric educational model and noted community empowerment through self-ethnic identity played a central role in the mission of the schools observed. Development of a comprehensive understanding of the systemic and entrenched beliefs allowed educators to create a culturally grounded curriculum that built pride in students. Through the research, Ellis (2013) observed the different schools espoused similar Africentric beliefs and used a curriculum designed to validate and empower student ethnic history. While reaffirming the importance of arts integration, this study raised questions about reproducibility, how many Africentric schools exist and do marginalized students need teachers that reflect their ethnicity? Ellis (2013) concluded teaching about, and re-affirming culture through the arts strengthened and grounded the students in their community.

A growing body of research further supports the relationship between arts instruction and academic success. Erwin (2016) searched for a correlation between the number of years a student participated in art classes and scores on the American College Test (ACT). Specifically,

Erwin (2016) developed a z-test measuring the difference in means of the ACT scores for African-American students participating in arts programming. Through the quantitative research, Erwin (2016) showed students attending two or more years of arts coursework placed higher on ACT scores in all subtest areas. Erwin (2016) identified several limitations with the research including the fact that ACT allowed students to take the test multiple times, but only reported the highest score, and the research span (5 years) possibly produced skewed data. The location (Midwest) and demographic population (predominately African-American students) for the study allowed Erwin (2016) to develop correlated data on the efficacy of arts programming and higher ACT scores for this population. According to Erwin (2016), culturally enriched arts education afforded students the opportunity to build stronger cognitive connections supporting academic growth.

International data suggested a correlation between arts education and measures of academic success. Robinson (2013) analyzed existing research with the goal of identifying the evidence supporting arts integration in the curriculum. In developing a definition framing a quality arts integration model, Robinson (2013) noted international models existed with similar indicators including availability to all, community partnerships, and teacher training. Most importantly, countries with high scores on the *Trends in International Mathematics and Science Study* (TIMSS) and the *Programme for International Student Assessment* (PISA) incorporated systematic arts instruction into the curriculum.

Robinson (2013) reported on research correlating strong self-efficacy skills, arts integration, and marginalized students. The meta-analysis research led Robinson (2013) to propose the Universal Design for Learning (UDL) framed the reason art succeeds with marginalized populations. Evolved from Universal Design, UDL combined brain research to

provide opportunities for learners to develop higher level thinking skills by encouraging students to grapple with and develop individual strategies for critical problem solving. Robinson (2013) further suggested creative processes promoted behaviors supporting school learning. Hendricks (2016), however, discovered a lack of significant correlation between arts and self-regulation. Nonetheless, the relationship between arts and academic performance in international settings (Robinson, 2013) provided further data on the importance of arts integration.

Underrepresented gifted students. Accepting that gifted and talented students exist and require services specific to their abilities challenge educational communities (NAGC, 2017). Under the Marland Definition in 1972, the federal government defined gifted students as individuals whose skills and capabilities in general intellectual ability, specific academic aptitude, creative or productive thinking, leadership, visual and performing arts deviated significantly from the norm (NAGC, 2017). Further, the law stated identified students must receive differentiated services targeted to their academic and talent development. Different states and school systems interpreted the Marland Definition within the parameters established in their communities. One example of a Midwest State definition reads (as cited in the Midwest Department of Public Instruction website):

Pupils enrolled in public schools who give evidence of high performance capability in intellectual, creative, artistic, leadership, or specific academic areas and who need services or activities not ordinarily provided in a regular school program in order to fully develop such capabilities. (Midwest State Statutes § 118.35)

Within the parameters of this definition, the public-school districts of the state developed programs to support and build student capacity to learn. Specifically, the state instructs each school board to guarantee access to appropriate programming for students. The Department of

Public Instruction further awards grants to nonprofit organizations, cooperative educational service agencies, university systems, and school districts for services beyond those provided in a traditional classroom setting. This paper focused specifically on UGT children. However, gifted and talented children, like all children, need appropriate programming to foster their abilities. Moreover, gifted students exist in all socioeconomic and demographic populations (NAGC, 2017). Educating gifted children implies targeted services beyond the regular school curriculum.

Gifted education and funding. In response to federal guidelines, states mandated schools identify and service gifted and talented students. With a general trend of reduced resources, many districts lack the funds to meet these obligations (Leachman et al., 2016). Schools that struggle financially to provide for the academic needs of struggling learners rarely afford specialized educators for gifted students (Beisser, 2008). Therefore, lack of financial resources directly affected the academic prospects of UGT students (Kraeger, 2015; Plucker et al., 2015). Underrepresented gifted students rarely received appropriate academic services or opportunities for talent development.

Gifted education and poverty. Even when students attended diverse schools, gifted and talented students tend to consist of the affluent demographic (Grissom & Redding, 2016; Sparks, 2015). Callahan, Moon, and Oh (2014) stated that statistically, low-income students represented a lower gifted population than minority students. Ford (2011) and Plucker et al. (2013, 2015, 2018) reported on the alarming gaps of the top end of academic achievement tests between white and affluent populations versus those marginalized by poverty or demographics. This deficit challenged the structural components of traditional gifted identification protocols and created a talented underclass capable of hindering American productivity (Plucker et al., 2015).

Acknowledgment of the role poverty and inequitable resource allocation played in gifted identification encouraged many researchers to propose alternative identification protocols. Traditional identification focused on strict adherence to academic or ability test results (Kraeger, 2015). Giessman et al. (2013), Kaufmann (2013), and Naglieri and Ford (2015) warned tools designed to identify gifted and talented students often fail disadvantaged populations (poor, minority). Ford (2011) and Naglieri and Ford (2015) posited lack of minority gifted signified a social justice issue and required challenging current perceptions.

UGT students and the achievement gap. In response to the gifted and talented testing issue, many districts attempted to adopt nomination forms for inclusion into said programs. Identification tools such as the Naglieri Nonverbal Ability Test (NNAT), for example, provide a means to measure ability, not opportunities provided by affluence. Peters and Engerrand (2016) proposed identification for gifted services needed to address the pre-existing dimensions of an individual student's propensity to learn. Stargardter (2016) warned eradicating racial barriers required a concentrated effort. Simple fixes such as portfolios or teacher recommendations often lack substance.

Kaya (2013) stated the disparity between verbal and nonverbal intelligence quotient (IQ) testing required careful analysis before inclusion in gifted programs. For equitable identification, the microsystem needs a substantive overhaul of content delivery. Chism (2012) conducted a quantitative analysis of underrepresented students that received advanced placement courses throughout high school. Chism (2012) stated disenfranchised students placed in advanced classes often lacked support services to facilitate the transition. Based on this study, Chism (2012) concluded researchers and policymakers needed to shift the discussion to that of talent development to support students placed in advanced classes.

UGT students and neuroscience; the bias of poverty. Rosales (2016) contended multiple reasons, including underprepared educators and bias affect services provided to UGT students. Neuroscientists discovered that gender affected replicability in laboratory experiments in both human and non-human subjects (Chapman, Benedict, & Schiöth, 2018; Katsnelson, 2014). Concerning the research two significant aspects of the science behind gender and replicability bear mentioning. First, the fact that gender affected replicability both in human and non-human subjects implied the existence of a biological trigger. Discovering that non-human subjects responded differently to laboratory experiments based on gender challenged perceived notions on neutral test taking scenarios.

Second, this research sheds significant light on the challenges faced by implicit bias. McGill-Johnson and Godsil (2014) explained that explicit bias implied stated and observable prejudiced beliefs. For example, segregated entrances and water fountains acted as barriers keeping people apart. Implicit or unconscious bias, rather than defining the opposite of explicit bias, signifies unconscious behaviors in response to perceived bias (Blair, Steiner, & Havranek, 2011). Implicit bias names the often unconscious brain patterns to unconscious triggers.

Students from stressed communities recognize the disparity between societies. Perry and Szalavitz (2006) explained experiences shape and form human behaviors. Children in poor and disenfranchised communities internalize perceived notions of expected ability and behaviors. In turn, unconscious bias often informs student behaviors (Molett, 2013). Lest this information seem overwhelming, Perry and Szalavitz (2006) explained that given the proper support, most individuals break negative patterns. Most importantly for this research, gifted individuals often require fewer coaching repetitions to change erroneous patterns (NAGC, 2017).

UGT students and art education. Art and art education play a critical role in human development. Within the traditional gifted and talented community, artistic talent development falls within the identified categories of the Marland Definition of 1972. Kay (2006) wrote that gifted artists display an innate interest, often very early in life. The scope of this research, however, centered on the importance of arts education as a tool for cognitive development for UGT students, regardless of innate artistic ability. Whitley (2017) spoke of the hope that art provided her during her experiences with homelessness as a teenager. The foundation she created, ChopArt, provides a safe place for homeless youth in Atlanta to create art. The arts, according to Whitley (2017), saved her.

In the UGT setting, arts education offers a tool for equity. According to the NAGC (2014), arts education benefits all students, especially gifted children, yet many districts reduce services based on limited funding. Baker (2013) reported arts inclusion programs developed a greater understanding of nuanced behaviors such as feeling and perceptions. Reeves (2016) noted gifted art students in rural or otherwise disenfranchised communities often failed to receive appropriate services. Haroutounian (2016) explained students participating in arts-related programs increase their ability to make connections and synthesize learning from other domains.

For children in disadvantaged communities, arts participation provides an avenue for enriched brain development. Bolwerk et al. (2014) stated findings regarding art creation and resilience lead to suggestions for preventive interventions. Further, data from the National Endowment for the Arts (Gifford, 2012) reported at-risk students participating in arts programming graduated high school at a higher rate than peers do. These students planned to attend college at a higher rate and showed stronger involvement in their educational community. Along with building plasticity in the brain, the arts bring people together.

Art, academic tenacity, and UGT students. Academic tenacity, the belief in personal ability to learn, parallels poverty; with poorer students exhibiting higher levels of fixed mindsets. The terms fixed, and growth mindsets defined the pivotal work on behavior by Dweck (2006). Dweck (2006) identified the fear of failure as a critical fixed mindset characteristic. The growth mindset characteristics, on the other hand, included the belief that learning takes practice. According to the research reported by Dweck (2006), 40% of the total population possess the fixed, 40% the growth, and 20% a hybrid mindset. Claro et al. (2016) utilized the nationalized testing system of Chile to conduct a detailed study of the mindset theory. Analysis of the data through a demographic lens provided the researchers with proof that fixed mindset characteristics existed in higher numbers of the total population in poor communities.

Brain malleability supports the belief that fostering a growth mindset benefits all learners. Possessing a growth mindset enables a person to persevere regardless of the structural inequalities exhibited in the microsystem (Claro et al., 2016). Dweck, Walton, and Cohen (2014) explained student self-efficacy played a critical role in predictive success. Dockertman and Blackwell (2014) observed that culture and peers influence growth mindset practices. Mowat (2015) warned against blaming mindsets for educational inequity. While students in economically stable homes exhibited continued academic success, the researchers discovered poor children with a growth mindset performed better in academic settings.

Art education provides an avenue for developing a growth mindset. Making art encourages creativity, builds personal efficacy, and requires acceptance of failure. Brown and Sax (2013) and Oliver (2017) theorized early experiences with arts programming developed student capacity to learn. Erwin (2016) quantified the statistically significant relationship between arts programming and high-stakes (ACT) scores across all subcategories. Scripp and

Paradis (2014) reported on a longitudinal (3-year) study regarding arts integration and the closing achievement gap for marginalized students. Bolwerk et al. (2014) reported similar findings for seniors (62-70 years old) and art-creation programs. MRI results from brain scans of art making seniors showed increased brain malleability. Participating in arts programming strengthened cognitive coordination and patience. Learning how to focus on details and small successes fostered the belief that effort produces results.

Failure, the belief that there is only one chance to succeed exists in direct relationship to poverty. For families in stressed economic situations, the scarcity effect (Mani et al., 2013a) created a constant, daily worry for survival. Children, growing up in stressed environments developed stressed behaviors (Perry & Szalavitz, 2006). Art creation, however, proved to be a tool for addressing stressed issues and exploring other options. According to Perry (2006), drawing with young patients allowed the child to share memories, create observations, and heal (Perry & Szalavitz, 2006). UGT students represent a significant demographic for the United States (Plucker et al., 2013, 2015). Lack of gifted services limited talent development and affected economic growth for society (Cooper, 2011). Arts education provides a medium to foster talent propensity, build academic tenacity, and strengthen neural pathways for UGT students.

Review of Methodological Issues

Scientific inquiry leads to knowledge of patterns governing natural phenomenon (Bhattacharjee, 2012). Broadly divided into natural and social, science seeks to develop working theories and laws governing natural phenomenon. Research in natural sciences relies on replicability to ensure validity. Three classifications of social sciences include psychology or

human behaviors, sociology or social groups, and economics. Unlike the natural sciences, social science research rarely allows for precise observations based on quantifiable facts.

Replicability challenges social sciences. Bhattacharjee (2012) explained subjectivity existed when measuring more ambiguous research subjects such as happiness or sadness. The challenge of theory building and testing within the social sciences required a comprehensive understanding of the theoretical and methodological aspects of research design. Creswell (2014) identified three research designs: quantitative, qualitative, and mixed method. Quantitative research focuses on statistical analysis to represent the findings of the study. Qualitative research derives meaning from observations, interviews, and codified systems to report study results. Mixed methods involve a combination of both approaches.

The methodological review provides the researcher with opportunities to identify the strengths and weaknesses of research design including feasibility, limitations, and ethical protection of participants. Bhattacharjee (2012) furthered the use of research designs enabled the observation, analysis, and interpretation of data collected. Applying search parameters such as poverty, minority, educational equity, gifted and talented, and arts integration, within a five-year timeline enabled the reviewer to find 60 articles related to this inquiry. Cross-referencing the studies for compatible research topics and scientific data collection and analysis produced a handful of articles meriting an in-depth analysis. According to the American Psychological Association (2016), researchers often make methodological tradeoffs affecting the research. Understanding the choices and trade-offs of individual studies strengthens the review process.

The current literature review included studies ranging in categories of neurological, human behavior, and economics. Combining both natural and social science studies built the case for arts inclusion in academic settings. Logical reasoning patterns enabled the researcher to

ground the AoD and center the AoA on the central question. Machi and McEvoy (2016) identified four types of reasoning patterns: one-on-one, side-by-side, chain pattern, and joint reasoning. One-on-one reasoning built the understanding of the effects disenfranchisement creates on students. Research on poverty and brain development (Luby et al., 2013), for example, showed a direct correlation between poverty and reduced brain development. The research provided sobering statistics on the negative correlation between poverty and cognition.

In side-by-side reasoning, various data points lead to a similar conclusion. Well-executed scientific studies build on existing research and extend academic discussion. Oliver (2017) utilized a correlative quantitative design to analyze early childhood arts experiences for marginalized children. Baker (2013) reported the results from the qualitative pilot study on the effects of arts integration for students in third thru sixth grades. Through statistical analysis, Baker (2013) concluded arts integration supports critical academic skills. The arts research articles, along with research on poverty and the brain, created side-by-side reasoning models regarding the challenges faced by marginalized populations and benefits of art education.

Building the reasoning model enabled the development of the central argument through a complex scheme (Machi & McEvoy, 2016). Divergent and comparative models exemplify two argumentative structures. The divergent process utilized side-by-side reasoning patterns to formulate a comparison debate. With comparative reasoning, the results connect among data points through the evidence review. This literature review developed the case that arts education promoted brain development and supported academic growth for marginalized populations.

Erwin (2016) conducted a quantitative analysis comparing high school test scores for students participating in arts programming. The results allowed Erwin (2016) to report the existence of a statistically significant correlation between arts education and standardized test

scores. Robinson (2013) conducted an exhaustive meta-analysis focusing on the role arts integration played for marginalized students. The author theorized that arts integration promoted the formation of personal identity and met the universal design for learning (UDL) parameters (Robinson, 2013). Brown and Sax (2013) researched the role arts integration played in educational readiness. Through a grounded study on differential emotional theory, Brown and Sax (2013) noted students at risk for educational difficulties benefited from arts integration in early childhood. Social science methodologies combined with neurological research support the thesis that arts education provides a tool for marginalized populations in academic settings.

The articles researched for this study presented a variety of methodological and reasoning model patterns. Those studies that focused on neurological data fell within the natural sciences framework as defined by Bhattacharjee (2012). The quantitative nature of MRI scans substantiated theories on the adverse effects of poverty on brain development. Mani et al. (2013b) quantified and reproduced the study on scarcity confirming the negative trend between poverty and cognitive reasoning patterns. Applying quantitative approaches allowed researchers (Claro et al., 2016) to substantiate the role poverty played in the existence of fixed mindset principles. Similarly, Oliver (2017) utilized correlative quantitative methods to analyze and report on data regarding art and early childhood experiences.

Machi and McEvoy (2016) described chain reasoning as one conclusion leading to the next. The HET (Bronfenbrenner, 1979) outlined five interdependent variables affecting human development: microsystem, mesosystem, exosystem, macrosystem, and chronosystem. Bronfenbrenner (1979) explained that each system created a layered chain reaction. Within this literature review, the various data points interweave to build a nuanced understanding of the positive effects arts education played for marginalized populations. Bhattacharjee (2012)

explained qualitative research relies on observations making reproducibility difficult. By analyzing more than one study (Bolwerk et al., 2014; Bowen et al., 2014; Erwin, 2016), the chain reasoning methodology provided a solid foundation for the research project. Further, the research expanded the discussion on the vital role arts education plays in supporting marginalized students.

Synthesis: Conceptual, Ideational, and Theoretical Elements

Throughout this chapter, the HET provided a conceptual framework to build a relationship for arts education as a tool for UGT students. According to HET, the five aspects of development form a structure intended to support development. When the microsystems and mesosystems work in tandem, the exosystems and macrosystems enable children to reach developmental milestones within the established chronosystem. Epistemologically, the research evidenced a correlation between poverty and reduced cognitive abilities (Mani et al., 2013a). Analysis of the research through the lens of HET supported the role arts education plays in human development.

This literature review synthesized diverse articles to supporting the core thesis on the positive effect of arts education for marginalized populations. Mezirow (1991) explained that transformational experiences require a reflective trigger to serve as a catalyst. Furthermore, Mezirow (1991) claimed transformational reflection occurs in adulthood. Possibly this reason explained why the importance of art education as a tool for UGT students appears novel. Many adults who experienced transformative arts education classes as part of their regular educational experience never received a reflective trigger to create a transformative connection. Nonetheless, the research solidified the importance of art education for marginalized populations.

According to the research, arts education benefitted both individual students and broader communities. Neurological research confirmed participation in arts programming built stronger neural pathways (Baker, 2013). Magnetic imaging correlated the hypothesis regarding arts creation and brain resilience (Bolwerk et al., 2014). Scripp and Paradis (2014) reported that longitudinal research observed a significant reduction in the achievement gap for at-risk students in arts programming. Participating in arts activities supports brain development and student cognition.

Arts education provided opportunities for underserved students to develop stronger connections with the world of ideas. O'Connor (2014) recognized the role arts played in overcoming class bias and creating a personal advocacy voice. Jackson et al. (2016) reported significant benefits to expanded funding for schools in disenfranchised communities including greater economic success for these populations into adulthood. Students participating in the arts developed substantive long-term goals, which translated to broader exosystemic success for the community. Arts education supported marginalized students and built stronger communities.

Poverty, marginalization, and UGT students. The complexity of UGT students required a multifaceted transdisciplinary understanding. Philosophically, the research defined the case for the beneficial role arts education played in supporting UGT learners (Baker, 2013, Bolwerk et al., 2014). Bernstein (2015) stated the term *transdisciplinary* first appeared in the 1970s to connect diverse academic fields. McGregor (2004) explained the transdisciplinary approach unites knowledge. Foley (2014) noted artist exhibit a unique ability for transdisciplinary thought which leads to novel solutions. Robinson and Aronica (2015) stressed the need for creative experiences to propel students into the 21st century. Without a nuanced, transdisciplinary understanding of the causes of marginalization solutions often fail.

Perceptions about marginalization need critical analysis (Mowat, 2015). Framing the argument through a European lens, Mowat (2015) drew from sociological and psychological research to underscore the rise of marginalization. Rather than look for systemic failures, the mantra of personal responsibility, provided an excuse for lax system overhaul (Mowat, 2015). Isenberg (2016) argued in the United States classism perpetuated poverty within White communities. Edin and Shaefer (2016) reported the current system punishes people in poverty with limited opportunities to break the cycle. Education and public policy contribute to marginalization when market economics philosophies drive education programming. The word micro stems from the Greek word for small. When the microsystem lacks wider supports, challenges become harder to overcome.

The breakdown of the microsystem diminished the meso- and exosystems in disenfranchised communities. Families living in poverty tend to exist in communities facing poverty (Desmond, 2016). The neurological research identified poverty produces adverse cognitive brain development impairing problem-solving and decision-making skills (Mani et al., 2013a). With diminished systemic support systems, generational poverty decimates communities affecting resource distribution for educational programming (Biddle & Berliner, 2012). The traditional poverty concentration in cities and urban areas experienced a demographic change within the last decade with more poverty in the suburbs (U.S. Census Bureau, 2017). Kornrich and Furstenberg (2013) quantified that economic disparity resulted in less income available to families for extracurricular activities. Children in economically secure homes received enriched experiences at home and attended schools in affluent communities. Jackson et al. (2016) explained affluent children experienced extensive opportunities for growth during school. Kneebone (2014) reported economically disadvantaged students lacked access to

similar opportunities. Low-income communities often lack the structure to provide adequate services for UGT students.

Bronfenbrenner (1979) explained that successful exosystems provided resources for the macrosystem. In school settings, for example, funding affects resource availability. Research confirmed that gifted and talented students from marginalized backgrounds faced hurdles with identification and programming (Kaya, 2013; Peters & Engerrand, 2016; Plucker et al., 2013, 2015). The literature review process identified multiple factors contributing to diminished opportunities including poverty, lack of early childhood experiences supporting talent development, and existing identification protocols (Giessman et al., 2013). Research on gifted and talented demographics underscored inequitable identification of marginalized population students, even if they attended affluent schools.

Critique of the Research Findings

This literature review began with an exploration of the realities of systemic and systematic poverty proved critical to this analysis. The existence of empathetic advocacy, the ability to understand alternative points of view, drives the literature review process (Walton, 2012). McGuire (2014) recommended researchers develop precise analysis to explore research and arrive at conclusions through close reading of facts. Boswell and Cannon (2009) observed the critique of a study implied careful reading to examine the strengths and weaknesses of a study. Ryan, Coughlan, and Cronin (2007) explained research critique varies for quantitative and qualitative research leading to the identification of significant patterns for further study. Selected articles for this review included quantitative, statistical research on demographics and poverty levels.

This research documented the adverse effects of poverty on all aspects of the HET (Bronfenbrenner, 1979). Numerous scientific studies on poverty detailed the negative effects systemic poverty caused individuals and communities. Census data confirmed the unequal distribution of poverty; minority communities face larger percentages of poverty (Table 2). The scarcity effect established a lens to explain the cognitive effects of inequitable funding. Mani et al. (2013a) demonstrated when people faced scarcity, their cognitive bandwidth processes diminished. Conducting numerous field tests enabled the researchers to confirm the replicability substantiating the study findings. Families lacking economic security often face housing insecurity limiting the access to quality educational opportunities (Biddle & Berliner, 2012; Desmond & Gershenson, 2016). Kornrich and Furstenberg (2013) reported familial spending over the last 20 years focused more on early childhood experiences. Demographically, middle-class families live in middle-class communities; the broader tax base enables stronger schools to exist (Jackson et al., 2016). Children in middle-class homes received more and better experiences in their early years than children in marginalized communities. Children in poverty, conversely, suffered across the microsystem; familial poverty bred communal malaise and reduced school resources.

Schools with diminished resources often reduced educational programming considered superfluous to academic success. Theoretically, focus on core competencies of reading and math would raise academic scores based on independent measures. Academic testing results, however, continued to show a downward spiral for students in poverty (Leachman, Masterson, & Wallace, 2016). Longitudinal studies by Luby et al. (2013) mapped the effects of poverty on child development. While the authors contended certain limitations to their study including oversampling of data and suggested beginning the research with younger participants, the results

painted a stark picture of poverty and brain development. The longitudinal cohort of analysis of 823 MRI scans of participants ranging in age from 4-22 years old provided conclusive evidence of significant cognitive malaise attributed to poverty. Based on the findings, Hair et al. (2015) recommended increasing spending for children significantly (150%) below the poverty level. All children deserve opportunities to reach their potential.

Analysis of quantitative research enhanced the correlative nature of different studies. In marginalized communities, UGT students often received minimal programming specific to their academic needs. Multiple researchers (Kaya, 2013; Peters & Engerrand, 2016; Plucker et al., 2013, 2015) identified inequitable trends for poor and minority populations. Plucker et al. (2013, 2015) quantified their thesis through statistical analysis of National Assessment of Educational Progress (NAEP) data. Following the same protocols and NAEP metrics led Plucker et al. (2015) to report on significant gaps in excellence distribution across all demographic groups. Callahan et al. (2014) surveyed the status of gifted programming in the United States, sampling over 2,000 districts to arrive at a 95% confidence level. The findings led Callahan et al. (2014) to conclude that lack of federal allocation for gifted services left states to devise independent systems and parameters. Lack of cohesive oversight or mandate created a negligent distribution of and support for marginalized populations (Callahan et al., 2014). The quantitative nature of these studies provided statistically accurate results.

Argument of advocacy claim. A well-developed literature review presents a comprehensive argument of discovery leading to the argument of advocacy. Ryan et al. (2007) observed the inductive nature of qualitative research enabled the incorporation of multiple sources for theory development. Szuchman and Thomlison (2011) identified three types of literature reviews: empirical, theoretical, and systematic. Through the synthesis of existing

research, an empirical review of existing literature allowed this researcher to build the AoD regarding the role arts education plays in supporting UGT populations. The extensive nature of this review provided a synthesis grounding the central research claim. The results of this research can provide educators, administrators, and policymakers with a broader understanding of disadvantaged communities and tools to help develop equitable educational institutions.

While the research identified the effects of poverty on UGT students and discovered a strong correlation between arts education and general academic success, the research did not intersect in a meaningful manner with the needs of gifted students. For example, the literature review presented evidence on the benefits of art integration in mitigating the effects of disenfranchisement for marginalized populations. Baker (2013), Erwin (2016), and Oliver (2017) reported on the benefits arts education afforded minority students, especially when coupled with culturally relevant studies. Neurological research confirmed arts creation built stronger neural pathways (Bolwerk et al., 2014). Peters and Engerrand (2016), Kaya (2013), and Plucker et al. (2013, 2015) wrote about the disparity in identifying and servicing UGT students. The research confirmed that arts programming supported marginalized students and provided long-term positive community effects (Iyengar & Hudson, 2014). However, they failed to envision art as a tool to bridge this divide. The literature review provided strong supporting for supporting the research questions regarding the role of arts education as a tool for talent development for UGT students.

Summary

The literature review utilized the HET (Bronfenbrenner, 1979) to analyze the effects of arts education for UGT students. The argument of discovery (AoD) provided quantitative and qualitative research on the neurological effects of poverty. The research discovered that general

trends of poverty differ when compared to local demographics. In the United States, for example, poverty correlates with minority communities. With more than 80% white demographic, poverty, affects a greater proportion of white people in the Midwest state bounding this study. The research further discovered a correlation between poverty and limited academic tenacity (Claro et al., 2016). The AoD, further, presented findings on the lack of appropriate gifted and talented identification and services for poor and minority students. Lastly, the research demonstrated the positive effects arts education played in poor and minority communities.

Poverty. The review began with an exploration of poverty and its effects on the community. Poverty exists in all demographics, with more extensive concentrations evident in minority communities (Currier & Sattlemeyer, 2012). Herman-Smith (2013) identified three areas affecting marginalization, neurological risks, genetics, and parenting. This concentration creates a microsystem (family, school, community) unable to provide equitable opportunities for all children. Kornrich and Furstenberg (2013) and Reardon (2012) reported children from poor communities experienced developmental delays creating educational gaps evident from kindergarten. Neurological research (Hair et al., 2015; Jackson et al., 2016; Luby et al., 2013; Mani et al., 2013a) confirmed the adverse effects of poverty on brain development.

Poverty, school funding, and diminished programming. The literature review discovered that the concentration of poverty in minority enclaves stressed the extended mesosystem (Kaiser Family Foundation, 2015). Lack of stable housing, for example, forced families into substandard homes and stressed the tax base most school districts depend on for revenue (Desmond & Gershenson, 2016; Leachman et al., 2016). According to Bronfenbrenner (1979), the mesosystem defined the interconnectedness of the microsystem. Depressed housing

and community economies, limited the resources available to schools, creating a growing academic divide. Further, legislative measures such as NCLB developed to promote academic readiness forced many school districts to eliminate funding for programs such as arts education (Chappell & Cahnmann-Taylor, 2013; Gormley & McDermott, 2016; Melta, 2015).

UGT students. While inequitable school funding limits the abilities and potential of all students, the literature review discovered that gifted identification and services lagged significantly for marginalized learners (Kraeger, 2015). Approximately 6% to 10% of students fall within the gifted range, regardless of demographic distribution (NAGC, 2017). For poor and minority children with academic tenacity, school rarely provided appropriate services (Peters & Engerrand, 2016; Plucker et al., 2013, 2015). Kaya (2013) observed poverty affected verbal development and proved a barrier for gifted services. Callahan et al. (2014) stated poverty proved a significant barrier to gifted identification. Kornrich and Furstenberg (2013) established a trend towards more spending on early childhood experiences over the past two decades. Lack of services for gifted and talented students poses significant risks for the macrosystemic layer of the HET.

Chronosystem defined the last layer of the HET. Bronfenbrenner (1979) explained given the proper micro, meso, exo, and macrosystems; the chronosystem provides the time required for optimal human development. The literature review, however, confirmed that systemic poverty created almost insurmountable pressures that placed stress on the extended microsystem of the home, school, and community. Arguably, the systematic nature of poverty limited the enriched opportunities available in early childhood (Herman-Smith, 2013; Kornrich & Furstenberg, 2013). Less access to enriched programs expanded the academic achievement gap. Fifty years after the Coleman et al. (1966) report, American children continue to lag behind international peers

(Robinson, 2013). The data further identified the academic divide aligned with poverty and race. For people in systemic poverty, time compounded a negative developmental trend.

Arts education, academic tenacity, and marginalized populations. Interwoven throughout the literature review, research on arts education, built an argument of advocacy based on scientific knowledge (Baker, 2013; Bolwerk et al., 2014). Gormley and McDermott (2016) noted lack of revenue forced many districts to reduce funding for arts education. However, research from multiple sources confirmed that arts education supported academic tenacity for disadvantaged youth (Baker, 2013; Bolwerk et al., 2014; Bowen et al., 2014; Gifford, 2012; Haroutounian, 2016; Scripp & Paradis, 2014). The research further identified tangible (academic grades) and intangible (attitudes) benefits to arts education (Baker, 2013; Erwin, 2016; Haroutounian, 2016; Scripp & Paradis, 2014). Robinson (2013) noted that international policies of the top scoring TIMMS and PISA countries included systematic arts education in the curriculum. According to Brown and Sax (2013) and Oliver (2017), early exposure to arts education builds a student's capacity to learn. Art, teaches students to think, builds hand-eye coordination, and introduces children to the history of humanity.

Eliminating arts education stressed the exosystemic layer. According to the National Arts Board, arts education creates stronger communities with higher levels of civic engagement (Gifford, 2012). Bronfenbrenner (1979) explained the exosystem as an independent variable affecting the macrosystem. The macrosystem relates to services schools provide to students. Gifford (2012) reported arts education provided long-term positive community effects. Exposure to the arts built stronger belief in personal efficacy and responsibility creating better bonds for the community.

Lacking from the current research was literature specific to the role of arts education as a tool for talent development for underrepresented gifted and talented students. Defined as poor, minority, or a combination of both, UGT students present a significant loss of educational promise to American productivity (Plucker et al., 2015). Bolwerk et al. (2014) stated art creation supported brain development. This literature review led to the conclusion that sufficient reasons existed for an investigation on the impact of arts education for talent development of UGT students. The research concluded the findings would yield socially significant data. Two research questions framed this study:

R₁: How and to what extent does arts education create an equitable learning environment for UGT students?

R₂: How and to what extent does art programming promote the development of academic tenacity for UGT students?

Chapter 3: Methodology

Introduction

The belief that all students benefit from academic services targeted to their abilities drives this researcher. According to the National Association for Gifted Children (2017), 6% to 10% of the total population qualify as gifted and talented; furthermore, these students exist in all backgrounds and socioeconomic groups. However, gifted students from poor or minority backgrounds often fail to receive appropriate academic services (Plucker et al., 2015). Robinson and Aronica (2015) observed creative thought encouraged looking at challenges through a novel lens. Within the parameters established for this dissertation, emphasis on underrepresented gifted and talented (UGT) students grounded the research. The specific questions leading the research looked at the role that arts education played in supporting UGT learners. The questions asked:

R₁: How and to what extent does arts education create an equitable learning environment for UGT students?

R₂: How and to what extent does art programming promote the development of academic tenacity for UGT students?

Creswell (2014) explained personal experiences influence a researcher on choices of research methodology. Personal experience with poverty and marginalization played a central role in shaping the researcher's intrinsic motivation to answer these questions. Creswell (2014) further added the intended audience of said research affected the study methodology. Intended to further the discussion on appropriate services for academically gifted, yet marginalized populations, qualitative research frames a narrative for further researchers to investigate. This

chapter introduces the purpose of the study, provides the research methodology, design, execution, sampling method, and data collection protocol.

Purpose of the Study

This qualitative case study research sought to discover if experts believed arts education supported the academic needs of underrepresented gifted and talented (UGT) youth. An erroneous assumption holds that gifted individuals possess the ability to self-advocate and succeed (NAGC, 2017). Research, however, pointed to a systemic underclass, even when UGT students attended schools with affluent peers (Callahan et al., 2014; Ford, 2011; Sparks, 2015). This research study defined UGT learners as students in poverty and/or from minority backgrounds.

Yin (2014) explained revelatory situations supported a case study design. Thus, in case study research, the interview process allows the data to reveal the opinions of the participants. The literature review, Chapter 2, discovered that poverty affected brain development and challenged communities (Luby et al., 2013; Mani et al., 2013a). The research uncovered that arts education supported brain development and academic standing for marginalized students (Baker, 2013; Bolwerk et al., 2014; Bowen et al., 2014). According to the literature review, UGT students faced multiple hurdles to talent development (Hammond, 2015; Naglieri & Ford, 2015; Peters & Engerrand, 2016). Addressing these issues required a novel approach, one that interwove multiple perspectives into a cohesive whole. By interviewing a minimum of five professionals in the fields of art and arts education, gifted and talented and UGT students, and equity issues, a deeper understanding of UGT issues developed. Appendix A provides a visual outline of the methodological process for this case study.

Research Questions

The research questions framed the inquiry process for this researcher. Creswell (2014) explained the research questions allow the researcher to explore the important issue in the study. Developed by Bronfenbrenner (1979), the Human Ecology Theory (HET) provided the conceptual framework that grounded the literature review. According to the HET, human development requires five interdependent layers: the micro-, meso-, exo-, macro-, and chronosystems. Exploring poverty and marginalization within the HET framework enabled the central thesis for art as a tool for equity to evolve. The specific research questions driving this case study related to the macrosystem of the HET, the area that educators have relative control over.

The first question asked: How and to what extent does arts education create an equitable learning environment for UGT students? The literature review supported art as a tool for equity specific to marginalized learners (Ellis, 2013; Erwin, 2016; Gifford, 2012; O'Connor, 2014). The research proved that arts education supported marginalized students academically (Baker, 2013; Bowen et al., 2014; Robinson, 2013). Further, the research showed that art creation supported brain plasticity and developed neural pathways (Bolwerk et al., 2014). Within the parameters of the literature review, then, the importance of arts education for marginalized populations was established. However, the literature review did not discover any research on the importance of arts education as a tool for UGT students. By asking, what role arts education played in supporting UGT learners these questions led the research into a wider field of academic discovery.

The second question stated: How and to what extent does art programming promote the development of academic tenacity for UGT students? Research quantified that students in

poverty exhibit higher rates of fixed, or fear of failure, characteristics than affluent peers (Claro et al., 2016). However, academic tenacity, the growth mindset, is a teachable trait (Dweck, 2006). The literature review presented research on the many benefits of arts education including building student capacity to learn (Erwin, 2016; Oliver, 2017; Sax, 2013; Scripp & Paradis, 2014). Discovering professional opinions on this topic provides tangible information for educators and policymakers.

Case Study Propositions

Qualitative research precludes hypothesis creation. Yin (2014), however, explained case study propositions and stated rivals create a frame to guide the researcher. Two propositions framed this case study: Arts education promotes equity for UGT, and Arts education promotes academic tenacity for UGT. Yin (2014) further explained that researchers needed to allow for rival propositions. The rival propositions for this case study read: Arts education does not promote equity for UGT and Art education does not promote academic tenacity for UGT.

Research Design

This single-topic case study research methodology followed an interview model. Interviewing people with experiences and expertise in specific areas of the thesis questions afforded the opportunity to extend the literary research with qualitative data. Evaluating the five layers of the HET through a transformative lens led to an in-depth understanding of systemic issues affecting this demographic population. Creswell (2014) explained qualitative research analyzes a specific theme through multiple data sources: interviews, artifacts, materials.

An emergent, rather than, prescriptive design lens, framed the data sources to build the research evidence. Yin (2014) identified a two-level definition for case studies. First, case studies explore contemporary issues. Lack of equitable educational services for marginalized

gifted and talented populations exist within a contemporary context. Second, case studies rely on multiple data sources, including, but not limited to, qualitative data. The literature review introduced research from various sources and established quantitative data such as neurological research, test scores, and demographics, to build the inquiry case.

Target Population, Sampling Method (Power), and Related Procedures

Target population. Qualitative case studies combine multiple data sources central to the study question (Creswell, 2014). Yin (2014) explained single-topic case study implied a focus on a central topic, not on the number of people interviewed. Evetts (2014) explained the term professional defined individuals whose work required higher-level educational training. The participants selected for this case study represented professionals within the parameters of the research. Interviewing professionals in the areas of fine art, arts education, poverty, minority status, and gifted research deepens the complex discussion of this study. Inviting a minimum of five to maximum of eight professionals ensured the diversity of opinions emergence.

Sampling method. Qualitative research seeks to extend and add to a field of inquiry. Guetterman (2015) clarified that non-random sampling methods failed to guarantee equal access to statistical representation in data collection. Yin (2014) explained with qualitative research, non-random sampling methods ensure participants bring critical discourse to the discussion. Upon receipt of approval from Concordia University's Institutional Review Board (IRB), electronic or face-to-face solicitations for participants ensued. The professionals comprised members from local arts education institutions, equity and social justice programs, gifted and talented consortiums, and educational communities. Appendix B provides the interview questions developed for this research.

Related procedures. Jacob and Furgenson (2012) recommended that beginning researchers adhere to guidelines and protocols established by their institutions to ensure ethical treatment of all subjects. This single-topic case study utilizes one-on-one interviews. The questions went through a rigorous protocol to ensure readability and bias elimination. The steps included:

1. The interview questions were reviewed by faculty chair and committee;
2. The interview questions were reviewed by three professional acquaintances for readability and clarity if:
 - a. Two were able to understand a question, it was deemed as clear.
 - b. Two did not understand a question, it was re-evaluated.
3. A practice interview was administered with two of the three professionals mentioned above. To develop an understanding of the coding and analysis process the results were manually analyzed using coding strategies outlined by Saldaña (2009) and Schulz (2012).

Based on feedback, the interview questions became accessible to colleagues across professional fields. Appendix C evidences the institutional form required to ask for this research.

Instrumentation. Yin (2014) explained triangulated data enabled the researcher to develop a deeper understanding of data collection. Chenail (2011) warned that abstract reasoning challenges qualitative researcher methodology. Collecting and representing data sans bias requires careful study. Saldaña (2009) recommended the use of computer-aided software for coding. Based on the recommendation of the research institution, Concordia University-Portland, the Atlas.ti 8@ Software program provided the coding and data analysis tool. The questions utilized for this case study explore the role of arts education for equity. Having

multiple readers: academic advisor, content specialist, cohorts, and acquaintances analyze the questions ensured clarity and comprehensibility.

One-on-one interview. Selecting participants for the one-on-one interviews based on expertise in the areas of giftedness, UGT students, art in the community, arts education, and equity supports the depth of research required for this study. To ensure a significant depth of expertise interview requests were extended to a minimum of five and to a maximum of eight people. Ryan, Coughlan, and Cronin (2013) explained an interview required careful analysis and understanding. Unlike a simple conversation, qualitative interviews require the interviewer to develop questions suitable for the study as well as exhibit strong listening skills (Yin, 2014). The interview questions developed to guide and lead the discussion into the depth required for this case study follow the HET frame (Appendix B).

Artifacts. Yin (2014) explained documents, archival records, interviews, direct observations, participant observation, and physical artifacts qualified as artifacts. Along with one-on-one interviews, physical artifacts, and documents provide the third level of documentation. Examples of artifacts include, but are not limited to, newspaper articles, photographs, examples of artwork, and other relevant information.

Data Collection, Data Attributes, and Data Analysis Procedures

Data collection and data attributes. Qualitative case studies combine multiple data sources central to the study question (Creswell, 2014). Pinto and Ausmer (2015) stated credibility required discovering varied perspectives on an issue. Collecting evidence supports the qualitative nature of this single-topic case study. Yin (2014) explained researchers utilize various tools for data collection including documents, interviews, observations, and archival records. This research project utilizes the HET framework to ground and code the interviews

and artifacts. Along with the five HET labels, the concepts of arts education, poverty, and transformation contributed to the data attributes for this study. Examples of attributes specific to this study include art, growth mindset, poverty, giftedness, and ability.

Data analysis procedures. Yin (2014) explained qualitative researchers must allow the data to lead to its logical conclusions through a detailed focus on the topic. Saldaña (2009) quantified that qualitative coding required the researcher to assign symbols that capture the essence of the data. Saldaña (2009) recommended the use of computer-aided technology to ensure that coding and analysis procedures followed a systematic process. For this research, the Atlas.ti8@ software provided the tool used for coding the research. The HET developed by Bronfenbrenner (1979) provided the framework for the interview questions and coding analysis. The five systems of the HET created a deductive, top-down, coding design.

Coding. The nature of this study supported coding for affective domains such as attitudes and perceptions. Taylor (2014) explained the affective domain centers on the emotional and belief system of a person. Saldaña (2009) and Schulz (2012) stated qualitative coding required multiple reviews to ensure relevant code discovery and theme assignment. Schulz (2012) further explained both inductive and deductive research protocol followed a similar pattern. Saldaña (2009) demonstrated how initial coding enabled the researcher to ground concepts and allow theories to emerge. According to Charmaz and Belgrave (2015), data analysis included coding and theory integration. Use of the Atlas.ti8@ software will enable the multiple coding patterns to occur including Open and InVivo coding.

Procedures. The steps for this research project include, but are not limited to:

1. Developing the interview questions and protocol.

Jacob and Furgerson (2012) suggested qualitative research sought to uncover the human aspect of an issue through meaningful question and protocol development.

2. Submitting paperwork to the Institutional Research Board (IRB).

The IRB ensures the research study limits harm to participants (Jacob & Furgerson, 2012). While this research project consisted of qualitative interviews, participating in the IRB process ensured adherence to established standards for ethics and professional conduct.

3. Establishing interviews.

Quality interviews create substantive work (Jacob & Furgerson, 2012). The participants selected for this study represented professionals vested in their fields with critical knowledge to share. Two of the participants represented experts in the field of gifted and talented education; one, a retired art educator worked as a fine artist; one worked as a K-8 educator; and one as a student advocate.

4. Collecting consent.

Consent ensured that participants understood guarantee of anonymity and that they had the right to opt out of the study at any time (Jacob & Furgerson, 2012).

5. Conducting the interviews.

Case study interviews focus on intentional relevant questions that lead to in-depth topic exploration (Castillo-Montoya, 2016; Pinto & Ausmer, 2015). The participants lead professional lives with numerous responsibilities; scheduling the interviews around their localities respected their availability. Further, the questions were provided ahead of time to allow the opportunity formulate answers. Providing the

interviewees, choice of location and time to develop answers reflecting their nuanced understanding of the issues ensures rich discussions.

6. Transcribing the interviews.

Modern technologies enable easier transcription of interviews. Along with manual note taking, the use of recording devices will ensure the interview be captured in its entirety. Jacob and Furgerson (2012) warned the researchers conduct tests to confirm tools work properly. This researcher utilized technology available through electronic media to record the interviews. Furthermore, current tools, such as the Atlas.ti8@ software supported the upload and provided voice to text transcription of audio and video files.

7. Verifying the interview transcripts.

Providing interviewees with a verbatim transcript allows for clarifications and corrections (Hagens, Dobrow, & Chafe, 2009). The participants for this project received a copy of their interviews to review and clarify.

8. Learning to code.

Saldaña (2009) explained the complexities of case study coding benefited from software tools. The institution affiliated with this researcher, Concordia University–Portland, recommended the use of the Atlas.ti8@ software for coding. Prior to beginning the interview process, this researcher downloaded a version of this software to learn.

9. Coding the interviews.

The initial process for coding this research will include both Open and InVivo code signage for each response. After coding each response, a secondary and tertiary

review of the data allowed categories and themes to emerge. Saldaña (2009) explained Open and InVivo coding utilize transcribed data and provide a system for novice researchers relatively free of bias. Use of these coding tools ensured the interview data drove the analysis.

10. Analyzing the interviews.

Research analysis seeks to discover similarities or differences around a set of specific questions (Gale, Heath, Cameron, Rashid, & Redwood, 2013). For this research, the Human Ecology Theory (HET) provided the framework to ground the interview questions. The Atlas.ti8@ software provided the coding and analysis tool.

11. Reporting the findings.

Qualitative research requires careful analysis of the data to ensure the researcher reports on the findings (Creswell, 2014; Yin, 2014). Ensuring removal of personal bias from the research requires contemplations and dedication to the data. Jacob and Furgerson (2012) recommended conducting practice interviews to develop this knowledge. Conducting mock, manual, interviews provided this researcher with the opportunity to practice the transcription and coding process. Reading and rereading the mock interviews allowed Open and InVivo codes to emerge. The data collected for this sample process allowed the researcher to construct an analysis based on the interviews, not on personal opinions.

Limitations and Delimitations of the Research Design

Qualitative research extends a scholarly discussion thus needs to meet established parameters regarding its construction, validity, and reliability. Discussing the limitations and delimitations of a study supports academic inquiry and future research (Creswell, 2014). Three

limitations of this study included the design, sample size, and instrumentation. Bhattacharjee (2012) explained replicability challenges social science research. Two specific case study design limitations include subjectivity and replicability; however, Creswell (2014) reported that careful attention to detail assisted researchers in the development of replicable studies. Throughout this project, emphasis on developing a replicable framework drove the development process.

Sample sizes provide another limitation for qualitative research. The sample size for this case study included five professionals. While the sample size could limit transferability, Creswell (2014) explained the revelatory aspect of qualitative research supported this inquiry model. Johansson (2016) proved that the internal mechanism in brain development challenged the efficacy of data collection. Grounded in the HET, the interview questions developed for this case study provided a controlled format to frame the discussions and ensure the data collection provided rich, authentic research.

Delimitations set boundaries within the setting, instrumentation, and transferability of findings of case study research (Creswell, 2014). Bound within a Midwest state, delimitations for this study included setting, instrumentation, and transferability. While the case study was bound to a specific Midwest state, the professionals interviewed for this study represented academic fields and expertise from multiple contexts. Further, grounded in the HET, the instrumentation developed for the study provided questions to broaden the discussion on the issue of equity and UGT students.

Credibility and Transferability

To build the case based on the evidence, qualitative researchers need to provide detailed, in-depth analysis of the data (Yin, 2014). The participatory nature of qualitative research supports follow-up interviews for clarification purposes. Providing opportunities for participants

to review the transcripts and notes ensures clarity of voice. Presenting logical rival interpretations of the data can strengthen the argument. Development of an in-depth analysis further builds an analytic frame to ground the study. Bhattacharjee (2012) explained social science differs from natural science within the context of transferability. Would another researcher arrive at the same conclusions based on the data collected? Utilizing the HET framework grounded the data collected in a theory that supports transferability.

Expected Findings

The literature review confirmed that poverty negatively affected brain development, limiting cognitive functioning (Mani et al., 2013a). Further, the research identified art as a positive tool for marginalized populations (Bolwerk et al., 2014). In developing this study, the researcher expected the findings to support the critical issues raised by poverty in education. The literature review further concluded that UGT students face significant hurdles to talent identification and delivery. The researcher expected the case study findings to raise this issue as well. The proposition that art could be a tool for the alleviation of inequity for UGT students presented a new concept for most participants in this case study. Therefore, the researcher expected to develop a deeper discussion on this topic with the interview participants.

Ethical Issues and Procedures

Conflict of interest assessment. Conducting ethical studies ensures the results present a fair and honest interpretation of the data. Completing the Concordia University Institutional Review Board (IRB) process ensures the ethical treatment of subjects and study procedures. Furthermore, consultations with committee members and chair ensure the process maintains the intended focus and stated goals. Per the IRB protocol, completing the informed consent form ensured participants understand the scope and intent of the study. Moreover, the informed

consent clarified the interview protocol, outlined foreseeable risks, and ensured confidentiality. Participation in this research study was voluntary. Within the parameters of this research topic foreseeable risks centered on confidentiality and anonymity. Protecting participant confidentiality required the storage of interview data in a locked cabinet. Assigning participants pseudonyms ensured anonymity of quotes and opinions. Appendix C presents the introduction to the case study letter.

Researcher reflection. Yin (2014) warned case study research risked bias and cautioned the researcher to allow the data to lead the investigation. Jacob and Furgerson (2012) recommended beginning researchers choose a topic of high interest. With 20 years' experience in the Gifted and Talented education, this topic presented high personal interest to the researcher. However, neither the specific subject matter of UGT students nor the professionals interviewed participated in my classes or my personal or, professional network. Centering the interview questions on the HET ensured that the interviews focused on the research questions, not my opinions. Creswell (2014) observed case-study research promotes a narrative reflection for readers. Sharing the transcripts and written report with participants ensured the accurate presentation of the opinions and observations presented. Further, to ensure the report represented the data, not researcher bias, close readings of the responses utilizing open and InVivo coding methods ensured accurate reflection of collected results.

Summary

All students, including underrepresented gifted and talented children, require equitable opportunities for talent development. Grounded within the HET, Chapter 3 described the purpose of the research within the limitations, assumptions, and boundaries framing the study. Further, the chapter outlined the case study design process. Creswell (2014) explained

the transformative worldview theory for qualitative research expanded on constructivist theory and included a participatory research methodology. By participating in interviews with professionals, academics, and underserved student populations, a deeper, more nuanced understanding of the issues facing marginalized students and the role arts education may play in supporting UGT populations will broaden the discussion of this relevant issue.

Chapter 4: Data Analysis and Procedures

Introduction

The National Association for Gifted Children (2017) stated students from poverty and minority backgrounds present a unique underrepresented gifted and talented (UGT) population. Current research confirmed that poverty and cultural biases limited opportunities for UGT students (Plucker et al., 2018). This chapter describes the population sample and demographics, data sources, and research data. Through the summary, data presentation, and conclusion sections a detailed review of the data narrative emerges. The primary research questions read, “How and to what extent does arts education create an equitable learning environment for UGT students?” and “How and to what extent does art programming promote the development of academic tenacity for UGT students?”

Merriam (2005) and Mezirow (1999) theorized transformative experiences required opportunities for reflection so that their relevance materialized. As a professional educator and researcher working with gifted and talented students, underrepresented children present a niche population within the demographic I serve. Personal experience with disenfranchising characteristics, including poverty, immigration, and English-as-a-Second-Language status, identified me as an at-risk student. Participating in an enriched arts program in seventh grade proved a catalyst for future academic success. Creswell (2014) suggested beginning researchers select topics with personal significance. Underrepresented students represent a demographic with personal relevance. Therefore, uncovering strategies to support the UGT population provides a service for the academic community.

Description of the Sample

Population, sample, and demographics. Yin (2014) explained qualitative single topic case study research focused on the topic, not the number of participants. Evetts (2014) explained professional status referred to the type of education required to participate in specific positions. For example, university professors, K-12 educators, and fine artists require specific training and degrees. Five professionals in the field of gifted and talented, art and arts education, education, and student advocacy comprised the interview participants. These five individuals represented the professional fields: gifted education, art education, or underrepresented populations. Referrals and contacts for interviews arose through networking functions including but not limited to, meetings, conventions, and professional events. Initial communications were face-to-face; I approached people, introduced myself, and asked if they would be interested in participating in this study. All five people agreed to and honored their commitment to this study. Upon receipt of approval from the Concordia University–Portland Internal Review Board committee, meeting times were established. Planned to accommodate participants' schedules meetings occurred in central locations. Two of the interviews were in local coffee shops, one was in a library, and one was in a place of employment. One of the meetings transpired over the phone. The shortest interview lasted 50 minutes, the longest an hour and 30 minutes.

Shafak (2017) stated diverse thinking expanded understanding of nuanced topics. Diversity includes the varied experiences participants bring with them. The interview participants included two current university professors, one artist and art educator, one educator and artist, and one school liaison person focusing on equity. Four of these people were parents, and one was a grandparent. Four had experience in advocacy related fields including child welfare and political activism. Three taught in K-12 education. Two professed varied

backgrounds including experience in fine art, medicine, and commerce. All participated in civic and professional associations including organizations promoting educational services. One exhibited in the fine-art world; and two had experience in craft-fairs. The age range of participants ranged from the early 40s to mid-70s. To ensure confidentiality participants received labels: Respondent A (RA), Respondent B (RB), Respondent C (RC), Respondent D (RD), and Respondent E (RE). Minimal personal information entered the transcripts.

Research Methodology and Analysis

Single-topic case study research. Qualitative case study research supports the development of revelatory insights into challenging problems. Sutton and Austin (2015) explained that qualitative research allowed participants to express opinions and share personal insight. This project followed a single-topic case study research design. Creswell (2014) and Yin (2014) explained single-topic case study focus on a central theme and aims to extend a scholarly discussion. The intended to this research was to extend the discussion regarding the use of arts education as a model to support underrepresented gifted and talented students. Conducted within a geographic region of the Midwest this study utilized a specific definition for giftedness. According to the Midwest Department of Public Instruction website, this definition states:

Pupils enrolled in public schools who give evidence of high performance capability in intellectual, creative, artistic, leadership, or specific academic areas and who need services or activities not ordinarily provided in a regular school program in order to fully develop such capabilities. (Midwest State Statutes § 118.35, as cited in Midwest Department of Public Instruction website).

Grounded in the Human Ecology Theory (Bronfenbrenner, 1979), this single-topic case study sought the opinions about education and underrepresented students from five professionals in the fields of gifted and talented students, art and arts education, and student advocacy. The Human Ecology Theory framed the interview questions. Question one centered on the microsystem, which includes the family, community, and schools. Questions two and three focused on the mesosystem, which extends the reach of the microsystem. Questions four and five explored the exosystem. This level exists separate from, but directly affects all others in the HET. Question six focused on the macro- and chronosystems. The macrosystem extended options and services available to students. The chronosystem focused on time that children need to develop into adults. Finally, questions seven, eight, and nine centered on the macrosystem. Each of the nine interview questions included probing follow up questions (Appendix 1).

Data Collection, Sources, and Analysis

Data Collection and Sources. Qualitative research occurs in settings conducive to participatory data collection (Creswell, 2014). Conducting interviews in authentic settings supported collegial conversations. Initial contact for participation arose at various professional networking events. Upon approval from Concordia University Portland Internal Review Board, the participants received electronic mail to schedule individual meetings. Furthermore, providing the interview questions prior to the meetings afforded the participants an opportunity to familiarize themselves with the questions. Recording and transcribing the interviews allowed the researcher to share individual interviews with participants and check for misconceptions and clarifications. Two of the interviews were in local coffee shops, one was in a library, one was in a school, and one was over the phone. Adhering to participant anonymity required maintaining confidentiality regarding professional affiliations and geographic locations. Further, the

participants received labels such as Respondent A, B, C, D, and E. The structured interviews provided the primary data collection source. The secondary data source included auxiliary documents provided by one of the participants. Finally, researcher observations and notes added to data triangulation.

Data Analysis. Arrival at qualitative analysis requires careful review and synthesis of the data. Amineh and Asl (2015) and Anderson (2011) explained analyzing qualitative research often followed a constructivist approach; the patterns emerged through careful review. Combined data sources enable inductive and deductive pattern identification and theme discovery (Schulz, 2012). Saldaña (2009) recommended beginning researchers apply Open and InVivo codes for research analysis and theme discovery. For this case study, the Open codes comprised of the five layers of the Human Ecology Theory. Careful reading of the data included five comprehensive readings of each interview to ensure a deep familiarity each participants' story.

The Human Ecology Theory (Bronfenbrenner, 1979) provided the open codes for this study. Burns et al., (2016) warned researchers to analyze the Human Ecology Theory (HET) inclusively, rather than in separate, sections to arrive at meaningful conclusions. For this study, the interview questions built upon each other within the HET framework. Linking each interview question to at least one layer of the HET theory supported the data analysis process. Upon completion of each interview, the transcribed data was emailed to the participants for review. All participants approved of the transcripts as presented to them. Next, the transcripts were uploaded into the Atlasti.8@ software program where it was read and highlighted. Then, for each interview question an excel spreadsheet was created (Table 4). This coding process enabled the establishment of patterns and discovery of themes.

Table 4

Coding Process Example

Open Code	Participant	InVivo Full	InVivo, Short 1	In Vivo, Short 2
Micro: Family	RA	Because some families can purchase additional access and education in the US, we will always have performance gaps.	families can purchase	
Micro: Family	RB	Based on personal experience and my experience as a teacher, family is the most important factor for a child’s personal and academic development. I am speaking of family in the broadest sense: one, or more, caring, consistent, present adult who is able to guide, support, access information, be an advocate and a liaison to school and other available resources for the child.	family is the most important	family in the broadest sense

Application of the Human Ecology Theory (Bronfenbrenner, 1979) throughout this research study provided a grounded framework supporting the researcher in data analysis. Creswell (2014) and Yin (2014) explained case study research required strict dedication to the data, to ensure that the story reflects the opinions of the respondents. Johanssen (2016) proved that researcher bias often skewed data results. Providing the participants, the questions before the interviews, sharing the transcripts after each interview, and allowing for probing, follow-up questions ensured that the data collected presented personal opinions on underrepresented gifted and talented students.

Presentation of the Data and Results

The interview process uncovered personal theories and opinions on education, equity, and gifted and UGT learners. Stake (2010) explained the repeated review of the data allowed for nuanced interpretations to emerge. Mertens (2007) stated the constructed nature of reality included multiple layers: sociopolitical, demographic, familial, and economic. Providing the

questions before the interview offered both respondents an opportunity to develop answers that represented their views. Pinto and Ausmer (2015) warned the interviewer needed to be careful to stay neutral through the interview process. The interview questions offered the opportunity for reflective stories to inform the discourse. The discussions led to rich and nuanced conversations on the issues facing UGT children, education, and general welfare. The data presentation follows a chronological order based on the interview sequence.

Interview Responses

Question one. The first question asked: Based on your experience how important is the role of the family, community and school systems for student development?

Respondent A (RA). RA stated, “Differential access and opportunity are the main causal factors being identified that advance the achievement gaps.” RA went on to explain families with means “purchase additional access and education,” ensuring a continued opportunity gap. Further, RA noted, “Opportunity can also come in the form of cultural capital such that even wealthy students from minority families might have less overall opportunity than poorer students from dominant cultural groups.” Thus, RA concluded, “Early educational exposure and experiences are critical to human development, and access to such opportunities in the United States is highly variable.”

Respondent B (RB). RB presented knowledge in the fields of art, art education, equity, and educational advocacy. As an artist and educator, RB shared observations leading to the conclusion that, “family is the most important factor for a child’s personal and academic development.” RB clarified, “I am speaking of the family in the broadest sense: one, or more, caring, consistent, present adult who can guide, support, access information, be an advocate and a liaison to school and other available resources for the child.” Without a strong familial system,

RB felt “few children can find their way to these [community and school] opportunities.” RB warned, “The transformative role schools might play in the lives of young people and communities dwindles with each passing year.”

Respondent C (RC). RC works within a setting that espouses fine art and physical education as the model for academic program delivery. Founded by Steiner (1861-1925), the Waldorf system continued to follow a pedagogy emphasizing imagination in learning. RC stated:

Our school system uses an integrated system. We loop [teachers and students stay together] with our students. Depending on the format of the school, the looping can be kindergarten to third grade; first to third; first to sixth; or in our case, first through eighth grade. This allows for significant relationships to be built up amongst teachers, parent, and child.

According to RC, these strong relationships allowed the teachers and school to reach out and support families in a nurturing way. “For example,” RC added, “we are finding a growing number of parents with lack of knowledge on child development and the importance of structure and routine for children. We model and explicitly teach these skills to our parents.”

Respondent D (RD). RD provided an understanding of issues relating to the gifted demographics. Regarding the first question, RD said, “I think family is the most critical; it is the first gate and support system.” RD further clarified that community and school resources proved most relevant to less affluent families. RD explained that teacher training included child development and supported the family.

Respondent E (RE). The fifth participant offered a very guarded response to the first question stating, “Very important, not always positive; in descending order family first, community second, school third.” When probed, RE refused to extend this answer.

Question two. Education is often touted as a tool to promote opportunity. Based on your experience, what strategies do schools employ that support or hinder equitable opportunities for students?

Respondent A. RA focused on the lack of evidence supporting school systems efficiently closing the achievement gap. RA observed:

There is little evidence that schools effectively close achievement gaps. It’s also a little silly to think that they can. Gaps exist before students start school and students are in school for a relatively small percent of the day. If schools or society actually wants to close gaps, they would have to start providing services solely to those students who have fewer opportunities. There’s a great article in American Psychologist that talks about how providing universal opportunities (such as pre-K) doesn’t close gaps because these are provided to already high performing kids as well. To close opportunity gaps, society and schools needs to provide the opportunities that parents would otherwise have to purchase at their own expense.

Respondent B. RB shared a story of personal story and a warning about the current state of the world in response to this question:

I was a slow reader (terrible eye problems) a failure in math, until my fourth and fifth-grade teachers, Mrs. F and Mrs. M. They made every day a joy. They were compassionate, patient, and kind to every one of the economically, ethnically, and

intellectually diverse kids in our class. We children saw this and followed their example as we interacted with one another . . . They discovered my talents in art and music, and I was put into special enrichment programs for kids who were talented in these areas. Every Friday morning, we were bused to a school up in Harlem and spent half a day in creative work and play. I started to pay attention at school. I tried very hard to understand the lessons. I did these things because I loved my teachers.

Respondent C. RC shared the underlying philosophy of nurturing the head, heart, and hands of each child, grounded the educational setting of the specific institution familiar to her. This philosophy created a transformative educational model for all students. The preschool focused on prolonged opportunities to play, explore, and create. “Some children can read early,” RC observed. However, forcing students to meet inappropriate developmental standards went against the philosophy of this institution. RC stated children needed time to explore and create to develop higher level thinking skills.

Respondent D. RD observed that school systems supported opportunity when they accessed "community and federally supported programs for students." RD specifically referenced the Jacob K. Javits Gifted and Talented Student Education Program Grants (NAGC, 2018) as an example of a federal program applicable to gifted education. Conversely, educational institutions hindered opportunities through, "outdated views, for example, looking at a student as at-risk rather than at-potential." RD pointed out that one population of gifted and talented students, those labeled as 2E (twice exceptional—gifted and special education) often receive services specific to their deficit, not their area of strength.

Respondent E. RE shared first-hand experiences of both benefits and hindrances centering on equity. RE stated, “I have seen schools benefit my own—White children and hinder equally able peers of color.” For example, RE shared how one child was to receive the same academic achievement award two years in a row. The family refused the honor and suggested at least eight peers, all children of color, with the same qualifications for receipt of the award. However, the award went to a different non-minority child.

RE also defined stated inequity existed in within school funding and defined this as a critical issue. RE shared two schools in the district have identified poverty rates of 90% and 95%: parents struggle in those communities to provide for students’ basic needs. Another two schools, RE added, exhibited the exact percentage of students receiving free-or-reduced lunch. However, the behavioral and socio-emotional referral rates in the two schools differed significantly. Of the two schools one draws from the university; the families may be struggling, now, but the future promises stronger opportunities. The children in that school represented a different behavioral model.

Question three. Based on your experience, how important is access to early childhood opportunities for children? All five respondents shared that early childhood opportunities played a significant role in child development. RA and RD noted that affluent families offered more opportunities to their children.

Respondent A. RA stated:

Incredibly important . . . High-quality childcare is more than \$18,000/yr. unless that opportunity has no effect on learning and achievement (something we know isn’t true) then, of course, we will see achievement gaps as a result. Some kids start kindergarten with the equivalent of two or three extra years of incredibly

high-quality education. Why would we ever expect there to be no gaps? We also know that early childhood education has a huge effect on later learning, dropout rate, etc.

Respondent B. RB spoke of the “common sense understanding” regarding the “profound” “socialization and ongoing educational trajectory” that early childhood programming offers children. RB went on to suggest that programming model reform in high schools with “required, well taught courses in child development, childcare basics, and sex education” would benefit all students. RB felt too many young women of potential became teenage parents with minimal support from the fathers of those children. As a parent and grandparent, RB worried about the children, “Fathers are essential guides and role models for little boys. They are too often absent from early childhood education.”

Respondent C. RC stated that experience grounded, “In this specific setting and its educational philosophy, the benefits of which I see daily,” shaped the belief in the importance of early childhood experiences. RC shared, “When children have built strong connections of trust, the academics come much easier.”

Respondent D. RD focused on the importance of “great early childhood opportunities for families that don’t have the resources.” Further, RD spoke about current research seeking to understand the correlation between executive functioning (EF) and early childhood opportunities. Langberg, Dvorsky, and Evans (2013) explained EF covered a broad range of abilities including self-regulation, emotional control, and organization. RD stated, “One of the ways to identify underrepresented gifted and talented students [was] with early universal screening and executive functioning for nurturing those skills.”

Respondent E. RE explained early childhood services as “extremely important,” qualifying:

Many of the children in our schools do not know what a firefighter is, let alone have access to books, in their homes. We take our preschoolers on multiple field trips to enrich their daily lives. They come to school *very* unprepared in comparison to affluent peers.

Question four. Schools in poorer communities often have reduced resources and face greater challenges. Based on your experience, what should schools do to ensure equitable learning opportunities for all learners?

Respondent A. RA initially stated, “I can’t really answer this question. It’s too vague.” However, RA added, “If schools don’t have the ability to offer educational opportunities, then there’s not much that can be done unless the larger community can step in to backfill that absence.”

Respondent B. RB shared a personal manifesto on equity encompassing multiple layers of world affairs. “Reduced resources? Imagine how much could be done with a small fraction of what goes into defense spending right now.” RB added, “We need much better schools, infrastructure, and alternative energy jobs, healthcare for everyone, clean water, environmental regulations to combat the reality of global warming, decent housing.” RB stated:

We must continue to peacefully embody what we believe in . . . The arts have always been considered “dangerous” by those for whom self-interest dominates everything else. The arts allow too much room for individual insights, a variety of interpretations, questions, [and] the wonder of metaphor! I am afraid that soon chips will simply be implanted in children’s brains and they will be programmed

to suit the needs of the economic system and new social order. Will such measures be called “educational reform”? Druids like me are becoming obsolete! It isn’t hard to envision a world populated by bionic people and robotics! What shape will education take? Of course, equitable learning opportunities are important. But with the new enormous deficit looming, not only good educational policies, but also Social Security and Medicare (which are essential to people like us) and any other humanitarian, ecologically sound, socially responsible programs may be sacrificed. We will become a country of desperate poverty or gated wealth.

Respondent C. Working in a private institution, RC explained that, although they offered tuition support programs options for their families, they did think about this type of question. “Having only worked in this setting, it is hard for me to answer this question,” RC said. “We do have a variety of economic demographics represented in our school, and we offer tuition support programs.”

Respondent D. RD explained that educators and educational institutions must look at both student needs and abilities. “It is really important . . . to be looking for what the students can do, not only what they can’t.” RD reiterated that the federally funded professional training program, JAVITS, provided resources for this type of training. “The focus of the grants is to help teachers look at positive rather than deficits of a student.” Furthermore, RD shared that school funding models needed revamping for more equitable distribution.

Respondent E. RE echoed the belief that current school funding created inequity. RE illustrated the point with an elaboration of the issues facing systems in extreme poverty. Two of

the schools receive the bulk of the students from the transient housing community. RE explained:

Those children, and their families, often face stressed environments and lack hope. Rather than reducing funding for those schools, the system needs to figure out ways to more equitably distribute resources; draw better quality teachers; and include all the special services for these children.

Question five. Limited funding forces many districts to eliminate arts and physical education and reallocated the money for remediation classes. Based on your experience, should art and physical education classes be eliminated? Why or why not?

Respondent A. RA prefaced the response with an explanation that “the choice of what to offer as part of the K-12 curriculum of a school district is up to the local school board.” However, RA understood, “exposure to the arts increases academic achievement. Based on that, schools should offer arts curriculum.” RA concluded that lack of knowledge of physical education limited personal opinions on that matter.

Respondent B. RB explained that responsible budget allocation would alleviate the “tragic” loss of “experiences that enliven and ignite imagination and desire to explore and learn.” RB added the arts, and physical education keeps children “healthy and vibrant.” Lastly, RB warned an environment “bereft of resources” would prove “detrimental to the well-being of desperate children” regardless the need for remedial courses. Without an outlet for imagination and creativity, remediation, RB worried, lacked meaning. RB described the effects of excluding art from the curriculum:

I think it is tragic that those experiences that enliven and ignite a persons’ imagination and desire to explore and to learn are being snuffed out. The arts and

physical education are vital ingredients in keeping children healthy and vibrant and open to true learning. These are pretty obvious truths . . . Our children are future citizens. The future will be in their hands.

You mentioned that the arts are being cut and replaced by “remedial classes” in poor school districts . . . I have no concept of how effective or of how numbing the teaching is in such endeavors or, whether or not the entire school environment is so bereft of resources and detrimental to the well-being of desperate children (their self-image, their fragile hopes) that such schools and their “remedial classes” become part of the slow death of innate human possibilities.

Respondent C. RC reiterated the core philosophy of the Waldorf Schools centered on art and physical education:

No, as I said earlier, our core philosophy is to teach through beauty. We want to meet the emotional, we education the head, the heart, and the hands! We are a complete human being. Art and physical education allow the students to engage their heart/head it is a therapeutic way for some kids to manage.

Respondent D. RD explained about learning the correlative effects of physical education and neurological development while reading student papers. RD added that:

There is a lot of neuroscience to support the importance of aerobic activity for learning, even apart from obesity and physical health. Similar to art, the science supports these activities for brain development. My values would oppose dropping art classes from school. [Art is] part of being an educated person.

Respondent E. Regarding reducing funding for art and physical education RE stated:

Absolutely not, art gives access to different parts of the brain and the soul. It validates experiences and opens minds. When I ask students to tell about their day, they often remark, “art was the best part” and they tell me what they did. Kids need physical exercise, they need to move, and they need to experience their bodies. Here is another memory I have of my own children’s experiences with two classmates—one White, one African-American. The White student was considered very smart and allowed to get up at will and access the class library. The African-American student, who is a teacher now, was forced to stay in his seat.

Question six. Internationally, schools have systemic arts curriculum embedded in daily instruction. Should the United States take this information into account as it evaluates programming and curricular options? Why or why not?

Respondent A. RA focused on the unique differences in educational policy in the United States. RA stated:

I don’t know that what international schools do should drive what U.S. schools do to a very high degree. There are so many differences. As I said above, what content is offered in schools is a values decision of a local community.

Respondent B. RB observed that international systems also provided universal healthcare and living subsidies that supported families:

Yes, internationally, many schools have rich arts elements embedded in their educational philosophies and programs. Many European countries also provide healthcare and housing support . . . We are the only developed country without government sponsored universal healthcare.

Lastly, RB observed, “I am not sure whether the United States, at this point in time, gives a . . . about what works as educational enrichment program objectives in other countries.”

Respondent C. RC pointed out that this was an international system. While each school chose its curriculum based on the country, all schools reflected the core philosophy of education through beauty. RC explained:

Yes, for all the reasons stated above. We [Waldorf] are an international organization of schools. Each school chooses its curriculum to reflect its core values; however, the philosophy and principles stay constant. Our curriculum in the U.S. focuses on an overview of Western civilization. We study the arts, literature, history, and science, through the lens of epochs of that collective history. As educators, we teach from the heart. Our children make their own “textbooks” based on their learning.

Respondent D. RD believed this research warranted further investigation, “I would want to see more cause and effect connections.” RD pointed out, however, that “test scores should not be the only reason to have art classes, but it would be good to have more information.”

Respondent E. RE viewed this information as “really interesting” noting that “some kindergarten classrooms had to cut art classes. This seems crazy and counter-intuitive!”

Question seven. One population of students is identified as Gifted and Talented. Budgetary cuts often force districts to reduce or eliminate programming for gifted learners. Based on your experience, why would such cuts hinder student development?

Respondent A. RA observed that elimination of gifted programming depended on the quality. Some programming existed in name alone, thus eliminating programming rarely affected students. “In other cases,” RA concluded, “removing [*gifted*] programming would

exacerbate excellence gaps as parents of means would access these opportunities elsewhere while other parents would miss out. Removing advanced academic opportunities could easily exacerbate inequality.”

Respondent B. RB stated gifted and talented programming provided an “enormously beneficial impact on the lives of many students. RB continued, sharing about two specific schools and the effect on “thousands of young people over decades; many of those students . . . immigrants from low-income families.” RB concluded with a story about the importance of gifted programming centering on one daughter-in-law, a lead actress with a decorated West Coast Shakespearean theater:

I would be cleaning rooms in a motel today if it had not been for my teachers.

They discovered my singing voice in elementary school, and I was placed in music programs and mentored by them so that I had help filling out my applications and preparing for my auditions for High School of Performing Arts.

My parents were not able to help me because they were still learning English.

The Gifted and Talented Program teachers gave me my life and my career. Now, I’m not even sure if my old school in Brooklyn has those programs.

Respondent C. RC explained the specific parameters of the Waldorf campus provided opportunities to meet the needs of gifted and talented students within the regular classroom. For example, currently, in a class of 11 students the three qualified as gifted. RC has observed that the fear of failure is a hallmark of these students. Within this setting and the level of trust built into the school philosophy, failure becomes accepted and expected. RC continued, the level of services provided this environment would challenge most public schools:

Again, my experience is within my specific setting. Those students that are gifted and talented (GT)—and I have three right now—are integrated into my room of 11. We just completed our school play. The kids that got the most out of the play were the GT kids, in different ways—two in the building and lighting/sound effects, etc. The youngest for social-emotional resilience. Most GT in class need tools for resilience. Having opportunities not to be the best, not to be the top. In this setting you get opportunities to fail all the time. Some kids take longer to build—among more affluent families we get more helicopter families; this is causing its own set of problems for the kids. GT programming at this school is inclusive, everything is engaging . . . This can be very hard in a public-school setting with so many more students.

Respondent D. RD shared that reframing the issue to that of “appropriate challenge” changes the lens by which to understand it. Growth only happens when tasks match readiness:

You cannot develop in any domain if you are not given tasks that are appropriate.

So, if school systems are cutting GT, they are cutting off opportunities for cognitive development for kids who are beyond grade level stuff. There is neuroscience for that as well. Something should be equitable or else development doesn’t happen. Repeating stuff doesn’t help.

Respondent E. RE observed the stark difference between affluent and economically stressed communities. According to RE, providing equitable opportunities for gifted children in non-affluent communities proved the biggest challenge. RE added:

In affluent communities, parents are able to support their kids, therefore, eliminating programming from those communities may be less detrimental. Also,

teachers in affluent schools probably use a lot of strategies and techniques in the classroom that are good practice for gifted kids.

Furthermore, RE observed, “special services” and teacher “training” in “non-affluent communities” lagged in comparison:

Many students are labeled as troublemakers because they know everything about a certain subject. When these children [*non-affluent, gifted students*] receive services that target their strengths, they come back to their homerooms with a sense of pride. They become positive role models. Sadly, I am not sure many teachers understand gifted.

Question eight. What strategies should schools use to support UGT students?

Respondent A. RA stated that early mitigation of gaps could prepare “underrepresented students” for “advanced opportunities” presented at later points of education. RA shared:

The main thing is that school can, as they are able, try and mitigate access gaps early on in K-12 so that underrepresented students are better prepared to be identified for and benefit from advanced opportunities. Programs that front-load talent development early in school—not necessarily for identified gifted students—are the most likely to see smaller ID gaps later on when formal ID [*identification*] does happen.

Respondent B. RB referenced experiences with the two teachers in fourth and fifth grade and went on to demand a systemic overhaul for teacher training. Woven within the response to services for underrepresented students, RB touched upon issues such as class size, creative play opportunities throughout education, and access to true learning. RB shared:

I came to this realization many years later when I understood that I had learned far more about good teaching from Mrs. F and Mrs. M than from my dreary courses in the Art Education Department. Before contemplating strategies that might be employed to support equitable opportunities for students, one must take a good, hard look at Teacher Education. I have no idea what Teacher Education consists of today. I fear it may be geared to electronics, standardized test requirements, one-size-fits-all methodology, and computer programming rather than addressing the fact that we all learn in different ways and good teachers have to be creative detectives able to discover the special keys that fit each child's mind. Huge class sizes, lack of creative play opportunities (at all levels, not just early childhood) make true learning difficult. By true learning, I mean that wonderful ride through exploration, discovery, questions, experimentation, application, to finally "owning" everything one has experienced. True learning involves perception (use of all our senses) and practice. All these subtle realities are a part of developing flexible concepts that may be applied in various ways, and, sometimes, gradually become knowledge.

Respondent C. RC felt that this question was not one she could answer with authority, while tuition support existed for families in need, the demographics of the institution did not fall within the realm of UGT students. "Having said that," RC concluded, "providing classes that these children can participate that does not require a large financial outlay for the family would be highly beneficial."

Respondent D. RD offered a "simple but powerful" solution called "proportional representation." Gifted and talented classes should reflect the demographic and socioeconomic

data of each school. It is the responsibility of the school system to ensure that proportionality. “Go find those kids and figure out what they need to succeed,” RD exclaimed. For example, RD added, many opportunities require after-school commitments, which limit access for some children. Also, internet connectivity can limit access for many students. Lastly, RD warned, “Be very careful about personalized learning. It is wonderful in the abstract—but I worry about concrete applications.”

Respondent E. RE echoed RD by stating, “Schools should match the budget to the student need. Identify the need first, then plan around them.”

Question nine. Based on your experience, would highly enriched arts programming support the needs of these learners? Why or why not?

Respondent A. RA felt that this type of programming would benefit identified gifted art students but was not sure if it would meet the needs of all children. RA warned that no “one type” of gifted programming existed. Art programming might prove a catalyst for one group of UGT students. However, RA was not sure it supported all UGT children:

Arts programming would help students who have advanced ability/achievement in the arts but whose abilities are not being appropriately fostered. Students who have unmet needs in other areas would not have those abilities fostered and developed by arts curriculum. There is no such thing as a “gifted curriculum”—it all depends on the student’s unmet need.

Respondent B. Throughout the interview, RB maintained passion and dedication both to education and art for young people. Stake (2010) explained that sometimes narrative retelling allowed a story to emerge. Sharing the full response by RB painted a broad picture regarding the power of art in child development. RB stated:

I believe that the arts are vital, not only for those who have special gifts but also for every young person. If arts education is well taught, the lessons are myriad and applicable in many ways. Arts provide a path to the discovery of each individuals' unique ways of perceiving the world. Arts are a mirror of emotions, a language without words. Or . . . they may paint pictures and make music with words if poetry and creative writing are the means of expression.

Furthermore, RB explained, through the creative process, students learn that “practice and technical skills are required” as well as “persistence, patience, the value of practice.” Lessons applicable to “other areas of work and to life skills.” RB continued:

Practice and technical skills are required if one wants to be free enough to really express and communicate feelings and ideas artistically young people learn persistence, patience, the value of practice. All these lessons may be applied to other areas of work and to life skills. Studying images, listening to music, reading and performing plays illuminates everything: history, religion, culture, politics, myths, legends, all these become new, and alive through the remarkably varied expressions of artist interpreters. Enriched arts programming supports the needs of gifted (and of all) young people . . . These possibilities must be preserved and made available to others.

Respondent C. RC succinctly summarized, “Yes. This is what we do. Art and physical education build the foundation for learning.”

Respondent D. RD stated:

I think it can and it is an attractive option, I would like to see the data on it. Why would art be any better than math? It certainly not a bad idea by any means? If

you have that is not good in art, that kid isn't going to benefit by a strong arts program, the arts program isn't going to generally help them. In general, I think it would be good.

Respondent E. RE emphatically added, “Absolutely, art uses the whole brain, hands, imagination, envisioning, and freedom to create. All students benefit. A really good arts program is uplifting.” She shared that one of the schools serves an extremely diverse student body both demographically and economically. The school embraced a culturally enriched curriculum. Last year, for example, the focus was on one culture. “Local artists worked with the students to create authentic art, dance, and performance pieces involved the whole school. This year, the focus is on a different culture.” RE added:

All our children learned about the culture and are given the option to participate in the play. Last year we focused on our [X] population, all our students felt ownership over their art projects, and the play that they participated in was open to everyone.

Summary of the Findings

Saldaña (2009) wrote that qualitative researchers face challenges regarding data presentation. On the one hand, the results need to present an accurate account of the collected data. On the other, the researcher needs to summarize and synthesize the research. Saldaña (2009) furthered that sometimes research brings awareness of new ideas. The linear presentation of the results followed the Human Ecology Theory (HET) framing of the interview process. Specifically, the interview questions supported the Open coding themes. For example, Bronfenbrenner (1979) identified the family as the microsystem, community as the mesosystem, school funding as the exosystem, school services as the macrosystem, and time as the

chronosystem. The InVivo themes arose from the individual responses to the questions. This section presents a brief overview of InVivo themes identified through the interview process. A more comprehensive synthesis of the data will occur in Chapter 5.

Analysis of responses presented three specific themes centered on the microsystems and mesosystems the importance of the family, community resources, and school opportunities. Respondents A and D recognized affluent families possessed the means with which to purchase high-quality educational opportunities. RB observed family included any caring adult stating, “Family is the first community.” RC focused on building community within the system. “My son, now a high school student,” RC shared, “still reminisces about ‘soup Mondays.’” RD shared the importance of community resources for low-economic standing families. RE observed that family dynamics included both positive and negative aspects. The importance of early childhood programming and lack of equitable funding appeared to resonate with the participants.

Concern over diminishing support for school funding, the exosystem, permeated the conversations concerning educational inequity. Two distinct themes emerged transformation through education is possible but diminishing and inequity limits opportunity. RB and RC shared examples of transformative educational experiences, “The Gifted and Talented Program teachers gave me my life and my career” (RB). All five respondents provided examples of hindrances to student opportunities ranging from programming options to lack of federal spending. Question four asked participants about equitable funding issues. The lack of equitable funding proved a constant point of concern. All five participants spoke about funding issues. RE stated, “Those [*poor*] children, and their families, often face stressed environments and lack hope.”

The belief that art afforded opportunities for the development of the macro- and chronosystems for all students appeared in all the interviews. RA stated, “Schools should offer arts,” and RD said that art was “part of being an educated person.” RB, RC, and RE spoke of the importance that art education played in promoting academic tenacity and the growth mindset for underrepresented students. “Practice and technical skills are required . . . young people learn persistence, patience, the value of practice . . . applied to other areas of work and to life” (RB). RC said, “We believe in teaching the head, heart, and hands.” RE spoke of the pride students displayed in created work.

Furthermore, the respondents understood that macrosystem and chronosystem often failed to provide services for UGT students. RA observed some gifted programming exists in name only. RE stated, “Many students are labeled as troublemakers because they know everything about a certain subject . . . Sadly, I am not sure many teachers understand gifted.” A few common themes arose in the interview discussions regarding this population including “frontload(ing)” (RA), providing “true learning . . . through exploration, discovery, questions, experimentation, application” (RB and RC) opportunities to students and teacher training (RD and RE).

This chapter presented the research results of a single-topic case study on the issues faced by underrepresented gifted and talented (UGT) students. The participants in this study included professionals in gifted education, art, arts education, and student advocacy. The interview process facilitated discussions of multiple aspects regarding UGT students. Careful analysis of the study results allowed the data to present conclusions free from researcher bias. For example, the primary research questions focused on creating equitable learning environments and promoting academic tenacity. While all five participants believed that all students benefited

from arts programming they were careful to underscore the inclusive nature of all. The participants further believed that arts education could support academic tenacity for all learners. The participants further believed that underrepresented gifted students benefited from early enrichment opportunities.

Chapter 5: Discussion and Conclusion

Introduction

It is in the interest of a society to foster and develop talent and potential in all students. However, children in poverty or from minority backgrounds often face hurdles to talent identification, limiting exposure to appropriate educational opportunities. The National Association for Gifted Children (2017) stated that underrepresented gifted and talented (UGT) learners presented a significant loss in talent for the United States. Further, the NAGC (2015a) recognized UGT students as lacking access to services for talent development.

The purpose of this single-topic qualitative case study was to explore the role of art education in support of UGT students. Chapters 1 and 2 defined and described UGT students as a subculture within the gifted and talented community. Chapter 2 developed a concise explanation of the myriad issues faced by UGT populations including poverty and limited service opportunities. Chapter 3 explained the methodology for the current study and Chapter 4 detailed the study results. This chapter summarizes and discusses the result findings relative to the literature review research presented in Chapter 2, as well as relevant, updated literature. The limitations associated with this study will be examined. The chapter concludes with an examination of the implications of the study results for practice, policy, and theory, along with recommendations for further research. Two questions guided the research:

R₁: How and to what extent does arts education create an equitable learning environment for UGT students?

R₂: How and to what extent does art programming promote the development of academic tenacity for UGT students?

Qualitative case study research focuses on the topic discussed, not the quantity of research participants (Yin, 2014). Evetts (2014) stated the term professional identifies individuals whose occupation required training and attainment of higher-level mastery. This case study interviewed five professionals. The interview participant pool arose through professional networking functions. The participants approached for interviews offered significant professional experience in one or more of the areas specific to this study: gifted education, underrepresented children, art, art education, and education. Two of the participants work in the field of gifted and talented educational research and development. One, a retired art educator, works as a visual artist. One teaches in a K-8 Waldorf school. The last person works for a K-12 public school system as a student advocate. Through the interview process, the participants discussed nine leading questions with probing follow-up questions developed to gauge opinions on UGT students. The underlying research questions created the frame for the nine interview questions (Appendix B).

Summary of the Results

Advocating for art as a tool for equity requires a transdisciplinary understanding of the research findings. Bernstein (2015) explained that transdisciplinary thought encouraged approaching challenging issues through multiple lenses. Developed by Bronfenbrenner (1979), the Human Ecology Theory (HET) provided the theoretical methodology framing the research. According to the HET, optimal human development relies on a delicate balance between five layers: the microsystem, mesosystem, exosystem, macrosystem, and chronosystem. Interweaving the HET layers with the literature central to the research study allowed for a deeper understanding of the challenges faced by UGT students, families, and school systems. This section presents a summary of the interview results.

Hidalgo (2016) explained that gifted children present unique needs and parental support systems. Neurological research showed that poverty created distinct challenges affecting individuals and their families (Hair et al., 2015). Desmond (2016) reported that economically stressed families often lacked the time and resources to provide increased opportunities for their children. All five interview participants concurred with the research on the importance of the microsystem on human development. For example, Respondent B (RB) said, “Family is the first community . . . without someone who can negotiate whatever system . . . few children can find their way to these opportunities.”

Children from economically stressed communities often lack opportunities for enriched early childhood programs. Cloney et al. (2016) wrote that location affected preschool options; affluent families accessed better quality care. Banerjee (2016) observed that differences in early childhood programming affected long-term academic success. This lack of service presents a significant challenge to systems as familial spending trends shifted. According to Kornrich and Furstenberg (2013), families increased spending significantly in early childhood opportunities after the 1990s. The research participants stated that the disparity between children from poverty and affluent peers affects school readiness. For example, Respondent A (RA) explained, “Gaps exist before students start school,” because, “Some kids start kindergarten with the equivalent of two or three extra years of incredibly high-quality education.”

School systems in less affluent communities often lack adequate resources for the students they serve. Banerjee (2016) stated challenges to successful academic achievement included factors such as low economic status. Carter and Reardon (2014) explained that growing inequality affected educational organizations. The interview respondents recognized existing

school funding models created challenges for school systems. Respondents D and E specifically advocated for the development of more equitable school funding models.

The NAGC (2015a) labeled the disparity in resource availability for UGT learners as the excellence gap. Limited funding correlated to fewer resources for gifted education. Plucker et al. (2015, 2018) reported on minimal progress in closing the excellence gap. Concern regarding inequitable funding and student services arose in the current research study participants. For example, Respondent B stated, “I think it is tragic that those experiences that enliven and ignite a person’s imagination and desire to explore and to learn are being snuffed out.”

Sawyer (2006) explained the importance of time for creative development. Beaty et al. (2016) reported on neurological studies mapping brain development during creative activity. According to the research participants, involved in art projects utilized areas of the brain that generally worked independent of each other, strengthening neural development. Ellis (2013), Erwin (2016), and Gifford (2012) reported that underrepresented and minority students participating in arts education classes performed better on academic tests and with long-term career goals. The case study participants echoed the literature review responses, for example, Respondent B (RB) explained, art education taught “persistence, patience, (and) practice.”

This study sought to extend the discussion regarding the use of art education as a tool for talent development with UGT children. According to the NAGC (2015b), psychosocial factors affected talent development. Further, talent encompassed extensive, domain-specific opportunities. While supporting students in talent development increased achievement, limiting opportunities diminished student abilities (NAGC, 2015a). Whitley (2017) shared first-hand experiences of teenage homelessness, despair, and the healing power of art. The fact that Whitley (2017) specifically named art as the catalyst for transformation speaks to the power of

this medium in reaching UGT students. All five participants in this case study believed art education supported all students. Respondent B stated the importance of art for gifted children, sharing that the “High school of the Performing Arts and high school of Science in the Bronx have changed the lives of thousands of young people over decades. Many of those students have been immigrants from low-income families.”

Discussion of the Results

UGT students require services to develop their potential and learn strategies that promote long-term academic success (NAGC, 2015a). Morris (2015) noted artistic creation supported the healing process. Perry and Szalavitz (2006) described how therapy sessions began with patients creating pictures to express emotions and share lived experiences. Wilson (1998) discovered a neurological connection between the hand and brain, leading to the hypothesis that human ability to manipulate tools precipitated the rise of civilization. The professional opinions presented in this research study on the role of arts education for UGT students add to the scholarly discussion on the importance of art for students. This research project uncovered five central themes: (1) Understand all gifted and talented students; (2) Frontload for talent development; (3) Proportional representation; (4) Art for the whole child; and (5) Art for academic tenacity. This section presents the key themes identified in the data.

Theme 1: Understand gifted and talented including *underrepresented* students.

Initially adopted in 1972, the Marland Definition for giftedness stated that identified students needed services appropriate for academic development (NAGC, 2017). Further, this statute defined gifted to include individuals with talents in general intellectual ability, specific academic aptitude, creative or productive thinking, leadership, visual and performing arts significantly above age peers. Individual states adopted and adapted the Marland recommendations to meet

public education practices best. For example, a Midwest state statute encompasses all students enrolled in public schools with demonstrated capabilities exceeding classroom capacities to receive talent development services (Midwest State Statutes § 118.35, as cited in Midwest Department of Public Instruction, 2017b).

The interview discussions led to the conclusion of the critical importance of building awareness of gifted and talented students among educators, administrators, and policymakers. Service quality exists proportionally to awareness of student need. Respondent B (RB) shared two personal, transformative examples of the power of gifted and talented arts programming for UGT students. The first story centered on RB, the second on a daughter-in-law. RB shared that demographically both experienced childhood poverty; further, the daughter-in-law was a first-generation immigrant. RB shared: “I was a slow reader . . . until my fourth and fifth-grade teachers . . . discovered my talents in art and music, and I was put into special enrichment programs . . . I started to pay attention at school.” The second story focused on a family member: “One of my daughters-in-law is a . . . leading actress [who] recently told me, ‘I would be cleaning rooms in a motel today if it had not been for my teachers . . . The Gifted and Talented Program teachers gave me my life and my career.’”

Teacher awareness and the ability to provide appropriate services both to RB and to the daughter-in-law provided both people with careers more conducive to their talents. Building a systemic (institutional) understanding of gifted students creates opportunities for better service delivery model development.

Sub-theme: Understand twice-exceptional students. A specific population of gifted and talented students qualifies as twice exceptional, exhibiting both learning or emotional difficulties and gifted characteristics (Kalbfleisch, 2013). Respondent D (RD) observed that schools

“sometimes . . . hinder opportunity by outdated ways of thinking, looking at students as at-risk, rather than at-potential.” RD stated, “Failure to acknowledge [student] strength limits a student’s view of their own potential.” RD concluded that school systems needed to expand identification to include “what the students can do, not only what they cannot.” Developing an understanding of gifted student characteristics and needs supports educators with program development. UGT students, including twice-exceptional children, afforded appropriate opportunities; develop a greater depth of knowledge.

Theme 2: Frontload for talent development. Awareness of UGT student characteristics and needs leads to the development of appropriate service delivery options. Peters and Engerrand (2016) warned that past practices limited opportunities for minority and low-economic-status children. Kaya (2013) presented research on poverty and lack of verbal development, stating this issue affected UGT student success. Delisle (2015) explained that gifted children present unique characteristics and deserve services targeted to them. Frontloading for talent development implies offering content-rich opportunities to students in formative years. Service delivery models include classroom and pullout opportunities. While all five participants introduced variations of the theme of frontloading in the interviews and offered solutions, RC presented the best example of frontloading as an actionable delivery model. Working in a Waldorf system, RC shared that pedagogically the system believed all students needed to spend their formative years focused on hands-on, creative play and discovery. RC explained when students trust their fine and gross motor skills they tackle higher-level academic challenges with less fear. Systems that recognize and provide appropriate opportunities for student success allow students to develop higher level thinking skills.

Sub-theme: Professional training regarding gifted issues. Developing an understanding of gifted students and how to frontload for gifted development requires professional training. The Jacob K. Javits grants provide school systems with a tool to promote teacher-training opportunities for gifted and talented issues (NAGC, 2017). Three of the five participants stated that teacher training affected students. Respondent B (RB) suggested teacher training needed to broaden its scope and vision. RB stated, “One must take a good, hard look at teacher education.” RB continued that “true learning” involved an “exploration, discovery, questions, experimentation, (and) application . . . to finally owning everything one has experienced.” Respondent D (RD) spoke of federal grants specific to teacher training for gifted students. Respondent E (RE) observed lack of awareness about giftedness limited student opportunities. RE shared, “Sadly, I am not sure many teachers understand gifted and talented [students].” These three respondents suggested supporting educator awareness about gifted students (RD and RE) and evaluating teacher education programming (RB) would strengthen student services.

Theme 3: Proportional representation for equity. Whether due to lack of early childhood opportunities, lack of resources, or systemic misidentification, the interview participants understood barriers to services as an important, multi-layered issue. RA stated, “Opportunity can also come in the form of cultural capital such that even wealthy students from minority families might have less overall opportunity than poorer students from dominant cultural groups.” Stake (2010) explained case study researchers sometimes discover a stand-alone idea or theme. Respondent D (RD) proposed one such theme, offering proportional representation as a valid strategy for identification.

Proportional representation harkens to a political system composed to represent the voting demographic (Tiwari, 2017). RD explained, existing gifted programming should reflect

the demographics of the institutions. RD clarified that school systems needed to align gifted programming to school demographics, “If 40% [of the student body qualified for] free and reduced [lunch] that is the quantity for the gifted program.” Bernstein (2015) stated that transdisciplinary theory encouraged the use of divergent mediums for problem solutions. Proportional representation appropriates a political theory as a solution for UGT service model distribution.

Sub-theme: Provide support for proportionally identified students. NAGC (2015a) stated talent development required growth opportunities. Without practice, a skill rarely reaches mastery. Throughout the interviews, the respondents spoke of the importance of increased opportunities for students. Further, Respondent A (RA) observed that “differential access” due to economic ability enhanced opportunity gaps. RD recognized this issue when discussing proportional representation and suggested that concurrent with proportional student identification; schools need to “figure out what supports [students need] to do higher level work.” RD pointed out that many programs require after-school commitments that automatically exclude many low-income children. RD added, “Low-income families may lack transportation options, limiting student involvement.” RE observed when systems embrace collective opportunities children succeed.

Theme 4: Art for the whole child. Art for UGT students was a central theme of this research study. UGT students often lack opportunities for appropriate identification, let alone service delivery (Plucker et al., 2015, 2018). Chapter 2 identified numerous studies such as Catterall et al. (2012), Ellis (2013), and Erwin (2016), which reported findings specific to art integration and minority student success. The development of a system with frontloading capabilities during formative years would support UGT students in their academic development.

Art education provides students with opportunities to practice, experience mistakes, and often express personal stories in a safe environment (Whitley, 2017). The participants of this study believed art education benefits all children and the whole child. Respondent A spoke about the academic benefits of art education. RB observed that art education builds lifelong skills. “Studying images, listening to music, reading and performing plays illuminates everything: history, religions, culture, politics, myths, and legends,” said RB. RC explained, “Art and physical education allows the students to engage their heart [and] head.” As RD explained, art education is “part of being an educated person.” RE shared that “art gives access to different parts of the brain and the soul.” In summary, the respondents expressed opinions on the importance of art education for all children.

Theme 5: Art as a tool for academic tenacity. The secondary question guiding this project focused on the use of art for the development of academic tenacity. Dweck et al. (2014) explained academic tenacity as the mindset enabling students to work with diligence and persistence towards long-term goals. Claro et al. (2016) reported that poverty correlated with higher rates of fixed mindset in students. Greenspon (2018) noted self-imposed demand for perfection as a common challenge for gifted children. Developing strategies to overcome fixed mindset characteristics supports UGT learners with long-term academic goals.

Robinson (2013) reported that international data supported the use of art as a foundational tool for academic mastery. Three of the five respondents offered examples directly supporting art education as a tool for promoting the growth mindset. RB noted art education taught “persistence, patience, [and] the value of practice. All these lessons may be applied to other areas of work and life skills.” RC shared, “Most gifted students in [my] class need tools for resilience . . . In this setting, you get opportunities to fail all the time.” RE observed many

underrepresented kids lack the opportunity to try a new skill. Dweck (2006) shared that the growth mindset was teachable. Art education provides a tool to build the growth mindset and promote academic tenacity for students including UGT kids. Learning to take time and master a skill becomes a life skill.

UGT students present a unique subset of the gifted and talented population (NAGC, 2017). Art education provides a medium to allow these children to build their fine motor skills and form strong hand-eye coordination. Wilson (1998) discovered the critical connections in hand-eye development that lead to human ingenuity. De Waal (2016) presented research from primatologists marking the beginnings of cultural development in other primates. The professionals in this research study stated that UGT students needed to be understood and to receive opportunities for talent development. Art education builds the hand to eye coordination that strengthens trust in personal ability and problem-solving capabilities.

Discussion of the Results in Relation to the Literature

This research study focused on poverty and its effects on underrepresented gifted and talented children. The Human Ecology Theory (Bronfenbrenner, 1979) framed the research and provided the basis for the case study methodology, data collection, and analysis. This section discusses the research findings in relation to the literature review.

Poverty limits opportunities for children, their families, and communities. Conway (2016) and Desmond (2016) reported on the effects of poverty on health and housing security. Biddle and Berliner (2012) reported on the effects of unequal funding for school systems. Mani et al. (2013a) documented how scarcity limited cognitive functioning regardless of demographics. Plucker et al. (2013), Reardon (2012), and Reardon et al. (2013) reported on the excellence gap affecting UGT students. The interviews conducted for this study provided data

from five professionals on the adverse effects of poverty on the educational opportunities of UGT children. Bolwerk et al. (2014) and Bowen et al. (2014) presented research on brain development and arts education.

Poverty impacts children both in the short and long-term. The development of an understanding regarding the critical nature of poverty on children and the services they receive drove this researcher. The literature review detailed the effects of poverty on the microsystem, the family. Currier and Sattlemeyer (2012) reported that poverty existed in all demographic groups. All five respondents shared opinions on the adverse effects of poverty on families. Respondent A (RA) spoke about the disparity in early childhood programming options. Respondents B, D, and E (RB, RD, RE) shared comments on the critical role of early childhood programs for children in poverty.

Understanding that poverty affects all demographic groups and manifests itself with specific characteristics supports the belief that educators need to understand the needs of the communities they serve. Families in systemic poverty tended to live in communities with higher housing insecurity and less access to quality school systems (Desmond, 2016). Chapter 2 discussed research reporting on the neurological effects of poverty on child development (Hair et al., 2015; Jackson et al., 2016; Luby et al., 2013). All five interview participants spoke about systemic stressors creating challenging learning environments for students and their families. RA explained that affluent children enter kindergarten with two or more years of enriched programming. RD shared that lack of opportunities limited options for UGT students. RE observed that children from systemic, disadvantaged backgrounds needed more exposure to everyday experiences to build a shared knowledge base.

The effects of systemic poverty further stressed limited school resource allocation. The interview data correlated with the research on the systemic effects of poverty reported by Biddle and Berliner (2012), Jackson et al. (2016), Kaiser Family Foundation (2015), and Kneebone (2014). The interview respondents observed that community choices and opportunities affected options for students. RA noted that the United States educational system relied on local control for program opportunities. RB shared that change to the system included positive and negative aspects. RD and RE observed that current school funding practices limited options for economically stressed communities. Succinctly stated, the interview participants concurred with the literature review findings that poverty negatively affects student service opportunities.

This research study focused on UGT students. According to the NAGC (2017), lack of gifted services accounted for a significant leadership loss in the United States. Dai (2009) explained many people hold opinions about gifted individuals limiting service delivery opportunities. Plucker et al. (2013, 2015, 2018), Reardon (2012), and Reardon et al. (2013) explained that inequality affected underrepresented gifted and talented students leading to a systemic loss of talent development. The importance of understanding all gifted children and the characteristics that defined them permeated the interviews. RA and RD noted that loss of gifted programming exacerbated the opportunity gap. RC explained that many gifted students needed to learn how to grapple with challenges. RE concluded that many teachers lacked awareness about gifted children.

The disparity in resource allocation and distribution for UGT children concerned the participants of this study. The interview responses highlighted issues reported by Callahan et al. (2014), Kraeger (2015), and Peters and Engerrand (2016) regarding inequitable funding distribution. RB reported that gifted and talented programming positively affected numerous

low-income and immigrant children and worried that programming no longer existed. RD explained, “If school systems are cutting gifted programming, they are cutting off opportunities for cognitive development.” RE shared that “kids who are not challenged in these communities but fall within the gifted range many times use their abilities in negative ways.” According to the interview participants, UGT students benefited from appropriate services. Lack of services limited student academic growth.

This research study sought to discover if professionals believed that arts education could support UGT students. The interview participants shared that art supported all students (RB, RD, & RE), and contributed to the development of academics (RA), and academic tenacity (RB, RC, & RE). Respondent C (RC) observed that the Waldorf system employed an arts-rich curriculum for its pedagogical model, stating, “This is what we do.” The interview responses aligned with existing research on the role of arts education for equity (Baker, 2013; Bolwerk et al., 2014; Bowen et al., 2014; Gifford, 2012; Haroutounian, 2016; Scripp & Paradis, 2014). Art education provides a tool for academic development and academic tenacity development for all students including UGT children.

Limitations

Qualitative research faces limitations to size, framework, and implementation. Simon and Goes (2013) explained researcher lack total control over all aspects of the study.

Understanding and acknowledging these limitations support the research study findings. This section presents the limitations of this study.

This study sought the opinions of five professionals from a Midwest location regarding UGT students. Evetts (2014) explained the term professional defined individuals working in careers requiring study and attainment of higher education degrees. The five people selected for

this study represented individuals with expertise within the parameters of this research topic: gifted students; equity; and arts education. Two of the professionals represented the field of gifted education; three represented fine art and art education, general K-8 education, and work in student advocacy. Creswell (2014) and Yin (2014) explained single-topic case study research centered on the subject matter, not the number of participants. As an initial study, the size of the sample provided a diverse pool of opinions and allowed for rich data collection; it was not a limitation. However, a more focused interview pool, for example, all gifted and talented professionals, art educators, educators working with students in poverty, or student advocate experts might provide a different set of data points. Research with gifted and talented students, including identified artists, could further add to the research of this study.

This study utilized a single-topic case study interview model. Johansson (2016) proved that the desire to agree often challenges the brain, creating false positive responses with 90% accuracy. According to this data, researchers need to be careful that the data collected truly reflects honest opinions. The specific steps taken to guard against interview bias included providing copies of the questions to the participants before the interview and copies of the transcripts after. All participants agreed with the transcripts. Administering an online survey, along with the one-on-one interviews, could limit interview bias.

As a beginning researcher, I aligned the questions developed for this study with all five layers of the HET (Bronfenbrenner, 1979). Burns et al. (2016) explained the HET required a comprehensive analysis; use of only one level, limited data results. To respect participant time and allow for rich discussions nine questions were developed. While the response to the questions was positive, the development of more streamlined questions focusing on UGT learners within the HET framework might create richer discussion opportunities.

Implications of the Results for Practice

Underrepresented gifted and talented students often fail to draw attention to, or receive services for, their unique needs. Plucker et al. (2015, 2017) documented the adverse effects the loss of talent development created. The themes discovered in this research study offer recommendations for implementation that support the development of all students, including those marginalized through poverty and minority status. Moreover, these recommendations correlate to the positive success indicators identified by Hattie (2016). This section presents the recommendations stemming from the themes identified in the data. Organized in a structure designed to support UGT students, educators, and educational systems the recommendations offer suggestions that support all students.

Recommendation 1: Understand the characteristics and needs of UGT students. Dai (2009) wrote about that negative misconceptions associated with gifted individuals including appearing to know all the answers or appearing arrogant created misunderstandings about student needs. Hattie (2016) noted that students in trusting environments perform at higher levels. Throughout the case study, the interview respondents shared opinions on the importance of understanding gifted students and their needs. Most importantly, participants recognized that correctly identified and served students develop greater opportunities to succeed.

Killian (2017) reported that prior ability produced a significantly high effect size. According to the NAGC (2015b) position paper, however, undeveloped talent can atrophy. To build on prior ability, students need to trust that educators understand what makes them unique, and what strategies best support their strengths. UGT students exist in all demographics and communities. Professional training includes pre-service, and continuing education opportunities needs to encompass all educators.

Recommendation 2: Frontload for talent development. All five respondents spoke about the importance of programs that supported student readiness. Frontloading for talent development requires providing opportunities for students to build skills that encourage problem-solving and critical decision making. Wilson (1998) discovered the developmental connection between fine motor dexterity and brain development. The more pliable the hand, the stronger the neuron connections in the brain.

Frontloading for talent development involves systematic opportunities for learners to work in creative pursuits. Respondent C (RC) offered concrete examples of this philosophy in action through the Waldorf system. RC explained children build trust in individual abilities by developing “their fine and gross motor skills early.” Larrison, Daly, and Van Vooren (2012) reported that long-term data from Waldorf schools confirmed students appeared to lag behind peers in early elementary grades yet scored in advanced levels by eighth grade. Developing fine and gross motor skills build a strong foundation for talent development.

Recommendation 3: Provide art education for all students. The need to communicate visually exists for all children (Hayward, 2016). All five case study participants supported art education for the whole child and all children. RA shared the opinion that art supports academic development. RD added that art education enhances human development. RE explained art focuses other parts of the brain. RC shared that Waldorf espoused an art-rich philosophy for all students and in all its schools. RB explained that art education offers “vital [lessons], not only for those who have special gifts but also for every young person.” The recommendations arising from the interviews correlated to neuroscientific research on the importance of participating in the arts and brain development (Bolwerk et al., 2014; Kaufmann, 2014; Wilson, 1998). According to Killian (2017), activities promoting visual perception, creativity, evaluation, and

reflection, created statistically positive change in classrooms. Arts education programming incorporates these strategies; thus, involvement in the arts provides a tool for cognitive development.

Recommendation 4: Utilize art education for academic tenacity. Training in the arts increases critical success indicators such as concentration, persistence, engagement, effort, and deliberate practice. Killian (2017) reported that these effect sizes ranged from (.56) for concentration to (.79) for deliberate practice. Three of the five participants recognized art education as a tool for developing academic tenacity (the growth mindset). Respondent B (RB) stated, “Practice and technical skills are required” as well as “persistence, patience, the value of practice.” Respondent C (RC) observed, “Most gifted students in class need tools for resilience.” Dweck (2006) discovered that people possessing the growth mindset exhibited higher success indicators than those with the fixed. Research by Claro et al. (2016) confirmed that students from marginalized communities exhibited higher rates of the fixed mindset than those from affluent ones. Resources that support the growth mindset assist with academic tenacity and long-term success.

Recommendation 5: Remove barriers to services. Often, enriched opportunities require fees, transportation, or computer access limiting accessibility. Szymanski and Shaff (2013) explained that structural barriers limited UGT students’ opportunities. All five interview respondents noted that limited service options challenged UGT students. RA explained eliminating gifted services “could easily exacerbate inequality.” RD specifically warned that many opportunities for gifted services required after-school commitments that would limit options for families in poverty.

Implications for Theory and Policy

Grounded in the Human Ecology Theory (HET), the recommendations stemming from this study provided simple steps to inform theory and policy to support UGT children. Cooper (2011) wondered whether society created a problem by eliminating most gifted programming opportunities from schools. Bronfenbrenner (1979) explained that successful microsystems included family, community, and schools that worked interdependently through the mesolayer. The case study participants presented research supporting the importance of providing strong school systems with enriched programming for all students including UGT children. School systems that promote frontloading through arts education support the microsystem and build stronger mesosystemic bonds. Students need to develop their abilities to solve problems through constructive methods; art education builds those strategies and skills.

UGT children represent a significant loss of talent for the United States (Plucker et al., 2018). Iyengar and Hudson (2014) reported that communities offering arts education programs in schools noted stronger civic engagement and a higher return on the investment. Further, neurological data (Bolwerk et al., 2014), confirmed art creation strengthened neural pathways. Lastly, numerous research studies such as those of Ellis (2013), Erwin (2016), Gifford (2012), and Kaufmann (2014) supported art education as a medium for underrepresented children. The macrosystem and chronosystem succeed with art education opportunities. Art education supports UGT children because it provides them with the tools to build stronger neural pathways and frontload for talent development. Art education programs strengthen school environments for all students and support underrepresented gifted and talented students in the development of academic tenacity and cognitive abilities.

Recommendations for Further Research

The current case study sought the opinions of five professionals in the fields of gifted education, art and art education, and student advocacy on issues related to UGT students. Central to the interview questions was the inquiry regarding art as a tool for equity for UGT learners. The respondent data supports the research reported in Chapter 2 that art education benefits all learners (Bolwerk et al., 2014; Zaidel, 2014). The respondents further provided examples of how art education supported academic tenacity and extended student learning. This qualitative research study provided rich data and opportunities for further research exploration. The participants involved in this study shared personal stories that sparked ideas for further research topics. This section presents key recommendations from the data.

Replicating this study. This study intended to see if professionals working with gifted and talented education, art and art education, K-8 education and educational equity thought arts education could support underrepresented gifted and talented students. Chen, Stolee, and Menzies (2017) stated qualitative research provides novel insights but proves challenging to replicate. Chapter 3 provided a detailed methodology with systematic description of the design and study development. A researcher could replicate the study through solicitation of similar study participants and administration of the same interview questions. The questions and methodology developed for his study created a replicable design model. Further, the repetition of specific themes leads this researcher to the conclusion that repeating this study may produce some similar results, as well as, introduce different themes.

Frontloading for talent development. This study introduced the idea of frontloading for talent development before formal gifted and talented identification. Historical mandate placed the importance of providing educational opportunities for all students, including those in

traditionally underserved communities (Coleman et al., 1966). Since that time, legislative mandates such as No Child Left Behind in 2000 and Common Core in 2011 attempted to provide tools to support all students. The development of an economically viable way to frontload for talent development would support all learners, including UGT children. A long-term research study following a group of students participating in such a program would provide helpful data for educators and policymakers alike.

Biographical case study. Mezirow (1999) stated that transformative experiences often require a reflective trigger to occur. Respondent B (RB) shared specific, personal stories of the transformative effect of gifted and talented art education. RB shared that this interview process created the opportunity for thoughtful contemplation. Extending the interview into a personal biography would provide an opportunity to understand an extraordinary person on a deeper level.

Updated comparative analysis of Waldorf schools. Respondent C (RC) worked for a setting, a local Waldorf Academy that espoused a philosophy similar to the arts education pedagogy proposed in this research study. Larrison et al. (2012) reported on quantitative and qualitative research comparing Waldorf schools to similar public schools. An updated comparative analysis utilizing the local Waldorf Academy could provide interesting research data.

Proportional representation. One theme developed in this research was that of proportional representation for equity in gifted education. Stake (2010) explained that case-study research allowed different research ideas to develop. The development of proportional representation into a mixed-methods study comparing three similar school systems—one without gifted programming, one with traditional gifted programming, and one with proportional representational gifted programming—would provide quantitative data on this recommendation.

Comparative analysis similar, not the same. Baptist and Befani (2015) explained that comparative analysis allows for critical discussion of a given outcome within a specific context. Respondent E (RE) stated that schools that appeared demographically similar exhibited starkly different student-body attitudes and behaviors. According to RE, one school was in a systematically disadvantaged community. The other school was in a university housing section. Both schools had children currently living in poverty; however, the university housing families lived “in hope,” according to RE. A comparative analysis of these two schools would provide significant information for educators, administrators, and policymakers.

Conclusion

I should not be here. As a first-generation immigrant from a highly at-risk family, nothing in my background identified me as a candidate for continuing education, let alone a terminal degree. Placement into an art-enriched gifted and talented seventh-grade classroom provided a transformative experience during a most challenging time in my personal life. Those experiences provided the foundation for my future academic trajectory. Discovering strategies readily adaptable to classrooms supports educators in the work of encouraging talent development for all students, including UGT children.

This qualitative case study sought to discover if experts in gifted education, art and art education, and student advocacy believed art education supported UGT students. According to the mandated legislature, public education institutions must provide appropriate services for all gifted students. Chapter 1 introduced and defined UGT students as a subset of the gifted population (NAGC, 2015b). The HET (Brofenbrenner, 1979) created a methodological framework to frame the study. Chapter 2 developed the argument that underrepresented populations existed in all demographic groups and detailed the existence of neurological research

on systemic poverty, scarcity, and decision-making; as well as, the benefits of art creation for underserved populations. Chapter 3 described the current study methodology and design, including participant selection and IRB process.

Conducting qualitative research requires the development of critical protocols to ensure the data reflects participant opinions. Two propositions framed this study: arts education supports UGT students and arts education promotes academic tenacity. Johansson (2016) reported on the ease with which research subjects accept false data as their own. To protect against research bias, the participants for this study received the questions in advance and had the opportunity to review their transcripts before final reporting of the data. Chapter 4 described the interview data protocol process.

According to the research results, the respondents agreed that art education supports all learners, including UGT students; the research findings aligned with the propositions framing this study. The respondents further recognized the vital role of quality early childhood programs and the need to provide enriched opportunities to underserved populations. The second question focused on academic tenacity or the belief that effort leads to success. Three of the five experts provided responses that confirmed the critical role that art education plays in promoting academic tenacity. Participating in the arts allows UGT students to develop fine and gross motor skills while actively participating in critical problem-solving activities. Furthermore, study in art theory, history, and appreciation develops higher-level criticism, analysis, and synthesis skills. Involvement in arts education supports all learners not because it makes them artists, but because it provides tools to build persistence and mastery over a medium.

Educators exhibit hope for the future and a belief in student opportunity. This chapter synthesized the argument developed in this paper into a summative whole. Neuroscience

confirmed both the adverse effects of generational poverty on brain development and the positive effects of art education and creation on underrepresented populations. UGT children, like all students, need resources to build their cognition and encourage higher level thinking skills to develop. The ability to transform material such as paper and pencils into objects of art requires multiple problem-solving steps to co-occur. Art education provides a salient tool to promote frontloading and encourage problem-solving strategies in students. Educators can change the future, one child at a time, provided they give that child a chance to discover her innate abilities.

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Appendix A: Chapter 3: Methodological Process

Single Case Study Rationale

Yin (2014): The single case study is an appropriate design under several circumstances and 5 single case rationales that is, having a critical, unusual, common, revelatory, or longitudinal case are given below.

1st: Are propositions correct?	2nd: Is the case extreme or unusual?	3rd: Is the situation common and does this study provide lessons?	4th: Is this case revelatory?	5th Is this case longitudinal
	Unique	Yes	Yes	No

Study Bounds

Setting	Midwest city
Actors	Professors, Professionals, Artists, Educators, Student Advocates
Events	Research, case-study
Processes	Interviews, Surveys
Ethical Considerations	Respect the rights, needs, values, and desires of the informant(s)
Research Question	How and to what extent does arts education create an equitable learning environment for underrepresented Gifted and Talented students?

Research Question How and to what extent does art programming promote the development of academic tenacity for underrepresented Gifted and Talented students?

Potential Propositions Arts education promotes equity for disenfranchised populations
 And:
 Arts education promotes academic tenacity for disenfranchised populations.

Source Professional Literature;
 National Arts Association;
 Arts Board;
 Talented and Gifted Association;
 Museum Educational Outreach Programs;
 National Equity Project;
 University Professors/researchers;

Rival Propositions Arts education does not promote equity for disenfranchised populations.
 And:
 Art education does not promote academic tenacity for disenfranchised populations.

Source Professional Literature;
National Arts Association;
Arts Board;
Talented and Gifted Association;
Museum Educational Outreach Programs;
National Equity Project;
University Professors/researchers;

Unit of Analysis: Arts Education as a Transformative Tool (Analytic Generalizations)

Arts and Underrepresented GT Arts and Academic Tenacity Arts and Equity

Logic Linking Study to Proposition: Bronfenbrenner’s Human Ecology Theory
(Analytic Generalizations--Criteria for Evaluating Data)

Microsystem	Family, School,Community
Mesosystem	Interplay between Microsystem levels
Exosystem	Effects both Micro- and Meso- but neither controls
Macrosystem	Extends Exosystem
Chronosystem	Time

Logic Linking Study to Proposition Transformative Research Paradigm

Ethical stances of inclusion and challenging oppressive social structures	Builds trust and enhances social justice	Applies to marginalized/disenfranchised populations
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Appendix B: Interview Question Bank

Protocol: These questions will be asked of experts in the fields of education, gifted and talented, art, and equity. One to two hours will be allocated per interview. Interviewees will be given the option to review their transcripts to ensure that their answers were correctly recorded.

1. Based on your experience how important is the role of the family, community and school systems for student development?
2. Education is often touted as a tool to promote opportunity. Based on your experience what strategies do schools employ that support or hinder equitable opportunities for students?
3. Based on your experience how important is access to early childhood opportunities for children?
4. Schools in poorer communities often have reduced resources and face greater challenges. Based on your experience, what should schools do to ensure equitable learning opportunities for all learners?
5. Limited funding forces many districts to eliminate arts and physical education and reallocated the money for remediation classes. Based on your experience, should art and physical education classes be eliminated? Why or why not?
6. Internationally, schools have systemic arts curriculum embedded in daily instruction. Should the United States take this information into account as it evaluates programming and curricular options? Why or why not?
7. One population of students is identified as Gifted and Talented. Budgetary cuts often force districts to reduce or eliminate programming for gifted learners. Based on your experience, why would such cuts hinder student development?
8. What strategies should schools use to support underrepresented gifted and talented students?
9. Based on your experience, would highly enriched arts programming support the needs of these learners? Why or why not?

Appendix C: Consent Form

Concordia University – Portland Institutional Review Board

Approved: March 21, 2018; will Expire: March 21, 2019

CONSENT FORM

Research Study Title: The Transformative Qualities of Fine Arts in Academic Settings: A Means for Equity for Underserved Gifted and Talented Students

Principal Investigator: Maria Katsaros-Molzahn

Research Institution: Concordia University-Portland

Faculty Advisor: Julie McCann, PhD

Purpose and what you will be doing:

The purpose of this survey is to interview experts in the field of art and art education, gifted and talented education, and equity to explore if art could be a tool for academic equity. We expect approximately 5-8 volunteers. No one will be paid to be in the study. We will begin enrollment on March, 2018 and end enrollment on March, 2018. To be in the study, you will be asked to answer a series of questions about human development and education.

Doing these things should take less than 1 hour of your time.

Risks:

There are no anticipated risks to participating in this study other than providing your information. However, I will protect your information. I (Maria Katsaros-Molzahn) will record interviews and I will transcribe the recording. After checking for accuracy, the recording will be deleted. Any data you provide will be coded so people who are not the investigator cannot link your information to you. Any name or identifying information you give will be kept securely via electronic encryption on my password protected computer locked inside the cabinet in my office. The recording will be deleted as soon as possible; all other study documents will be kept secure for 3 years and then be destroyed.

Benefits:

Information you provide will help extend the discussion on equity, underrepresented gifted and talented students, and educators. You could benefit this by extending your understanding of equity issues as related to underrepresented gifted and talented students.

Confidentiality:

This information will not be distributed to any other agency and will be kept private and confidential. The only exception to this is if you tell us abuse or neglect that makes us seriously concerned for your immediate health and safety.

Approved: March 21, 2018; will Expire: March 21, 2019

Right to Withdraw:

Your participation is greatly appreciated, but we acknowledge that the questions we are asking are personal in nature. You are free at any point to choose not to engage with or stop the study. You may skip any questions you do not wish to answer. This study is not required and there is no penalty for not participating. If at any time you experience a negative emotion from answering the questions, we will stop asking you questions.

Contact Information:

You will receive a copy of this consent form. If you have questions you can talk to or write the principal investigator, Maria Katsaros-Molzahn at email: [email redacted](#). If you want to talk with a participant advocate other than the investigator, you can write or call the director of our institutional review board, Dr. OraLee Branch (email obranch@cu-portland.edu or call 503-493-6390).

Your Statement of Consent:

I have read the above information. I asked questions if I had them, and my questions were answered. I volunteer my consent for this study.

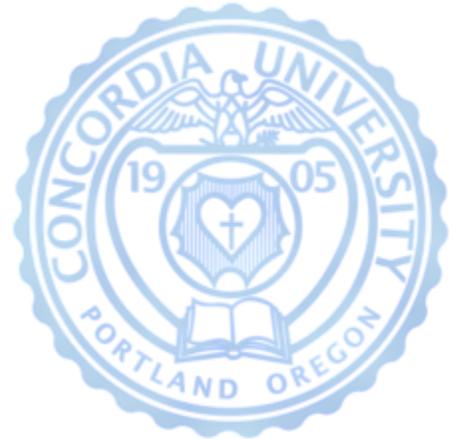
Participant Name _____
Date

Participant Signature _____
Date

Maria Katsaros-Molzahn
Investigator Name _____
Date

Investigator Signature _____
Date

Investigator: Maria Katsaros-Molzahn
email: [email redacted](#) c/o: Professor Julie McCann;
Concordia University – Portland 2811 NE Holman Street Portland,
Oregon 97221



Appendix D: Statement of Original Work

The Concordia University Doctorate of Education Program is a collaborative community of scholar-practitioners, who seek to transform society by pursuing ethically-informed, rigorously-researched, inquiry-based projects that benefit professional, institutional, and local educational contexts. Each member of the community affirms throughout their program of study, adherence to the principles and standards outlined in the Concordia University Academic Integrity Policy. This policy states the following:

Statement of academic integrity.

As a member of the Concordia University community, I will neither engage in fraudulent or unauthorized behaviors in the presentation and completion of my work, nor will I provide unauthorized assistance to others.

Explanations:

What does “fraudulent” mean?

“Fraudulent” work is any material submitted for evaluation that is falsely or improperly presented as one’s own. This includes, but is not limited to texts, graphics and other multi-media files appropriated from any source, including another individual, that are intentionally presented as all or part of a candidate’s final work without full and complete documentation.

What is “unauthorized” assistance?

“Unauthorized assistance” refers to any support candidates solicit in the completion of their work, that has not been either explicitly specified as appropriate by the instructor, or any assistance that is understood in the class context as inappropriate. This can include, but is not limited to:

- Use of unauthorized notes or another’s work during an online test
- Use of unauthorized notes or personal assistance in an online exam setting
- Inappropriate collaboration in preparation and/or completion of a project
- Unauthorized solicitation of professional resources for the completion of the work.

Appendix D: Statement of Original Work (continued)

I attest that:

1. I have read, understood, and complied with all aspects of the Concordia University- Portland Academic Integrity Policy during the development and writing of this dissertation.
2. Where information and/or materials from outside sources has been used in the production of this dissertation, all information and/or materials from outside sources has been properly referenced and all permissions required for use of the information and/or materials have been obtained, in accordance with research standards outlined in the *Publication Manual of The American Psychological Association*

Maria Katsaros-Molzahn

Digital Signature

Maria Katsaros-Molzahn

Name (Typed)

December 17, 2018

Date