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Art Education: A Tool for Talent Development for Underrepresented Gifted and Talented Students

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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 (NAGC) (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 (HET) (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

Introduction

Gifted people exist throughout history and are demographically diverse. The National Association for Gifted Children (NAGC) (2017) stated that 6% to 10% of all students qualify for gifted and talented services. Exhibiting talents in general intellectual ability, specific academic aptitude, creative or productive thinking, leadership, and visual or performing art, gifted individuals deviate significantly from the norm and require services appropriate to their talent. For many underrepresented gifted and talented (UGT) students, however, inequity limits access to appropriate learning opportunities. UGT students come from various backgrounds including, but not limited to, low economic status (LES) and minority backgrounds.

Acknowledging that gifted students exist in all demographic groups requires educational systems to develop adaptive programming models to address inequity. Grissom and Redding (2016) pointed out that even when attending the same school, students from low-economic backgrounds often failed to receive gifted education services. Callahan, Moon, and Oh (2014) stated that statistically, low-income students represented a lower gifted population than minority students. Moreover, Ford, Dickson, Lawson Davis, Trotman Scott, and Grantham (2018) wrote about the necessity of culturally responsive practice. These structural deficits challenge traditional gifted identification protocols and created a talented underclass.

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Further, with a general trend of reduced resources, many districts lack the funds to meet these obligations (Leachman, Albarez, Masterson, & Wallace, 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). Underrepresented gifted students rarely received appropriate academic services or opportunities for talent development. Thus, a transformative approach to understanding issues surrounding UGT learners must target program development and content delivery.

Purpose of the Study

Intended to further the discussion on appropriate services for academically gifted, yet marginalized populations, this study intended to explore novel program delivery opportunities supporting UGT students. Framed in a qualitative research methodology this study afforded the opportunities to explore the transdisciplinary issue of UGT students and propose novel solutions. Two questions guided this study:

R_1: How and to what extent does arts education create an equitable learning environment for UGT students?

R_2: How and to what extent does art programming promote the development of academic tenacity for UGT students?

Theoretical Framework

Theoretical Framework: Human Ecology Theory (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). Constant moving challenges academic continuity (Schwartz, Stiefel, & Cordes, 2015). Reardon (2012) asserted income inequality produced the highest achievement gap divide since 2001. 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, 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 needed consideration.

Table 1

HET Framework

Microsystem	Mesosystem	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. Hidalgo (2016) stated that parenting gifted children included unique challenges for families. Financially unstable families often lack access to quality housing or community services, including adequately funded schools. 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.

Summary of the Literature Review

The literature review utilized the HET (Bronfenbrenner, 1979) to analyze the effects of arts education for UGT students. The literature review confirmed that systemic poverty created almost insurmountable pressures that placed stress on the extended microsystem of the home, school, and community (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, Glynn, Healy, & Dettmer, 2018). Lack of services for gifted and talented students poses significant risks for the macrosystemic layer of the HET.

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, Mack-Andrick, Lang, Dörfler, & Maihöfner, 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 (Bowen, Green, & Kisida, 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. Art teaches students to think, builds hand-eye coordination, and introduces children to the history of humanity.

Deficiencies in Current Literature

The literature review presented quantitative proof of the positive impact arts education played in the academic development of marginalized populations. The research further presents data on the adverse effects of poverty on all demographics and the disproportionate levels of poverty in minority communities. The research findings confirmed the underrepresentation of poor and minority students in gifted classrooms. Adjusting identification formats for gifted inclusion also failed learners; the complexity of gifted classrooms proved challenging for underrepresented learners. The consideration of arts as a tool for strengthening underserved gifted learners; however, was not present in the current discussion.

Data Analysis and Procedures

Population, Sample, and Demographics

Professionals working in the fields of education, equity, and art comprised the demographic group. Evetts (2015) explained professional status referred to the type of education required to participate in specific positions. Shafak (2017) stated diverse thinking expanded understanding of nuanced topics. Diversity includes the varied experiences participants bring with them.

Four interview participants 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 1940s to mid-1970s. To ensure confidentiality participants received labels: Respondent A (RA), Respondent B (RB), Respondent C (RC), Respondent D (RD), and Respondent E (RE).

Research Methodology and Analysis

Single-Topic Case Study Research

Qualitative case study research supports the development of revelatory insights into challenging problems. This project followed a single-topic case study research design. Creswell (2014) explained single-topic case study focuses on a central theme and aims to extend a scholarly discussion. The intended purpose of this research was to extend the discussion regarding the use of arts education as a model to support underrepresented gifted and talented students.

Grounded in the HET (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. Each of the nine interview questions included probing follow up questions (Appendix A).

Application of the HET (Bronfenbrenner, 1979) throughout this research study provided a grounded framework supporting the researcher in data analysis. 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.

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. 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.

Neurological research showed that poverty created distinct challenges affecting individuals and their families (Hair et al., 2015). All 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. 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. The research participants stated that the disparity between children from poverty and affluent peers affects school readiness. 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. 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 (2015) labeled the disparity in resource availability for UGT learners as the excellence gap. Limited funding correlated to fewer resources for gifted education. Concern regarding inequitable funding and student services arose in the current research study participants. For example, RB 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".

According to the research, participants involved in art projects utilized areas of the brain that generally worked independent of each other, strengthening neural development. 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, 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. Whitley (2017) shared first-hand experiences of teenage homelessness, despair, and the healing power of art. All five participants in this case study believed art education supported all students. RB 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 Themes

UGT students require services to develop their potential and learn strategies that promote long-term academic success (NAGC, 2015). 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

The interview discussions led to the conclusion of the critical importance of building awareness of gifted and talented students among educators, administrators, and policymakers. 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'". 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 (Kalbfeisch, 2013). RD observed that schools "sometimes … hinder opportunity by outdated ways of thinking, looking at students as at-risk, rather than at-potential … Failure to acknowledge [student] strength limits a student's view of their own potential". Developing an understanding of gifted student characteristics and needs supports educators with program development. UGT students, including twice-exceptional children, afforded appropriate opportunities; developed 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. Delisle (2015) explained that gifted children present unique characteristics and deserve services targeted to them. 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. Three of the five participants stated that teacher training affected students. "One must take a good, hard look at teacher education". RB suggested teacher training needed to broaden its scope and vision. RB continued that "true learning" involved an "exploration, discovery, questions, experimentation, (and) application … to finally owning everything one has experienced". RD spoke of federal grants specific to teacher training for gifted students. 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. 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. The NAGC (2015) 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. 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., 2018). 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. RA 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, Watson, and Cohen (2014) explained academic tenacity as the mindset enabling students to work with diligence and persistence towards long-term goals. 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. 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.

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. (2018) 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

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. To build on prior ability, students need to trust that educators understand what makes them unique, and what strategies best support their strengths. Professional training includes pre-service, and continuing education opportunities need 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. 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 case study participants supported art education for the whole child and all children. 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. 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. Three of the five participants recognized art education as a tool for developing academic tenacity (the growth mindset). RB stated, "Practice and technical skills are required" as well as "persistence, patience, the value of practice". RC observed, "Most gifted students in class need tools for

resilience". Research by Claro, Paunesku, and Dweck (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 (2015) 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.

Conclusion

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: 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.

Based on your experience how important is the role of the family, community and school systems for student development?

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?

Based on your experience how important is access to early childhood opportunities for children?

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?

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?

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?

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?

What strategies should schools use to support underrepresented gifted and talented students?

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