Comparing Skills and Competencies for High School, Undergraduate, and Graduate Arts Alumni

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Abstract
This study investigates preliminary findings from the 2009 administration of the Strategic National Arts Alumni Project (SNAAP), comparing alumni perceptions of institutional contributions to the development of skills and competencies across high school, undergraduate, and graduate arts training programs. Responses from 4,031 arts alumni suggest significant differences between perceived skill development contributions in the areas of artistic technique, communication skills, social skills, personal growth, research skills, and technology skills. High school alumni report significantly greater perceived institutional contributions to their development of artistic technique, communication skills, social skills, and personal growth. Graduate alumni report significantly greater perceived institutional contributions to their development of research and technological skills. Potential experiential and curricular reasons for these differences are discussed.
Introduction

“The arts make schools better places to be, places where acceptance and encouragement foster growth” (U.S. Department of Education, 2008, p. 2). Over the last decades, the supporters of arts education have emphasized the social and economic benefits of the arts. One of these benefits is the development of a creative workforce. In this time of economic instability, perhaps one of the greatest weapons we have is creativity and innovation (McWilliam & Haukka, 2008). Since the arts can be a key component in fostering creativity, exploring the skills that students are developing in arts programs in the United States is critical to understanding the true benefits of an arts education. There are several aspects beyond simply learning technical artistic abilities that are important parts of one’s educational experience.

Examining the skills and competencies that students are learning in arts programs is even more relevant considering the increase in arts graduates. The percentage of arts degrees earned has been rising over the last four decades. Between 1970 and 1990, there was a 127 percent increase in the number of artists entering the workforce (Menger, 1999). Statistically significant increases have continued since then as well (Adelman, 2004; Capriccioso, 2006; National Endowment for the Arts, 2005). Furthermore, among those graduating from high school, there has been a 44 percent increase in those who say they plan on majoring in the visual and performing arts (Capriccioso, 2006). “Today, in an era of reduced government funding for the arts and an increased interest from students who want to major in artistic fields, many university leaders are feeling like the stakes are higher than ever before” (Capriccioso, 2006). With stakes so high, it is necessary to examine theoretical and empirical evidence concerning reasons for educational institutions to support training in the arts.

Environmental Influences on Talent Development

While there may be a popular belief that artistic talent is inborn and unchangeable, there are in fact many theories in the gifted education literature that point out the importance of the environment in talent development. Tannenbaum’s Star Model (2003) notes that “environmental supports” can interact with other elements to influence giftedness. Within this model, giftedness is defined as the ability to produce thoughts or tangibles, or perform staged artistry or human services in ways that are creative or proficient (Tannenbaum, 1986). This model addresses the antecedents and concomitants of demonstrated giftedness through the identification of five elements: (a) superior general intellect, (b) distinctive special aptitudes, (c) nonintellectual requisites, (d) environmental supports, and (e) chance (Tannenbaum, 2003). Arranged in a star pattern with each element at a point to suggest interaction, these elements have both static and dynamic aspects to indicate that both stability and change in functioning are recognized within the model. The direct acknowledgement of the potential for influence outside of the gifted individual through the elements of “chance” and
“environmental supports” extends the conceptualization of giftedness outside of the focus on individual traits and abilities, taking into consideration the importance of environmental factors.

Another theoretical model influencing the current study is the Differentiated Model of Giftedness and Talent (DMGT) (Gagné, 1999), which includes several environmental catalysts that can impact developmental processes for the gifted. Recently updated as the DMGT 2.0 (Gagné, 2009), the model makes a distinction between giftedness, considered to be aptitude domains; talents, considered to be fields in which these aptitudes are expressed; and developmental processes, considered to be the connecting path between the abilities of giftedness and their expression as talents (Gagné, 2003). Additionally, this model acknowledges how intrapersonal characteristics, environmental factors, and chance can also influence different aspects of the process. For each of these identified components (giftedness, developmental processes, talent expression, intrapersonal attributes, environmental factors, and chance), there are further elaborative sub-factors. Specifically, the environmental factors to be considered are the milieu (physical, cultural, social, familial), other individuals (parents, family, peers, teachers, mentors), and provisions (curriculum, pedagogy, grouping, acceleration). These sub-factors allow the DMGT to address giftedness as it develops and functions across a broad range of domains, including the arts.

Taken in the context of institutions that provide arts training, there are multiple aspects of the environment that may be influencing the development of students. Peer influence may differ when comparing high school, undergraduate, and graduate level experiences, which could be due to not only developmental differences in the age of the students but also the volume of interactions and the social structures. Teacher and mentor influence may differ with frequency of individual attention and the formality or informality of the classroom culture. Different types of curricular and programming experiences exist for students that attend arts high schools and undergraduate and graduate colleges and universities. Students in high schools may be more focused on learning the basics of technique while more advanced students at the graduate level may be expected to complete various tasks more independently. Thus, the skills and competencies that students develop as a result of their institutional experiences will differ depending on the type of institution they attend. While there is literature focusing on the development of artistic skills and abilities in high school (Gullatt, 2008) and different aspects of postsecondary arts training (Shreeve, Sims, & Trowler, 2010; Tavin, Kushins, & Elniski, 2007), there is a dearth of empirical research that makes direct comparisons between these different levels of institutions.
Arts Training Institutions

Exploring the learning experiences of students who have received arts training is an important task for many educational institutions. America’s colleges and universities are tightly bound with the arts (Arthurs & Gibson, 2004; Capriccioso, 2006). Of those organizations that exhibit the performing arts, 20 percent are connected to institutions of higher education (Tepper, 2004). Research suggests students involved in the arts show increases in their academic performance in areas such as improved test scores, self-efficacy, social capital, and capacity for empathy (McCarthy, Ondaatje, Zakaras, & Brooks, 2005). There are many studies that look at these theorized benefits, but few have the empirical rigor to support their conclusions (see Hetland & Winner, 2001; McCarthy et al., 2005). In addition to the lack of quantitative research on this topic, little research has explored the possibility that students develop some artist-related skills in arts high school programs before even reaching higher education. With the push to assess arts training at all levels (U.S. Department of Education, 2008), this study explores arts graduates from high school, undergraduate, and graduate programs to see at what level arts graduates develop their skills and competencies. Are there differences in perceptions of skill development when comparing arts alumni by school level (high school, undergraduate, and graduate)? If so, what are the patterns in skill development for particular levels of arts training institutions and what do these patterns suggest about the strengths and weaknesses of arts education for the various school levels?

Method

The data used for this study was from the 2009 administration of the Strategic National Arts Alumni Project (SNAAP). SNAAP is a recently developed multi-institution online alumni survey designed to obtain knowledge about arts school education from graduates of arts high schools, independent arts colleges, and arts schools, departments, or programs in comprehensive colleges and universities. SNAAP incorporates a broad definition of “the arts,” including a range of fields such as performance, design, architecture, art history, creative writing, film, media arts, music, illustration, and fine art. Arts alumni are asked about a variety of topics: institutional experiences, formal education and degrees, career path and experiences, resources, arts engagement, and income and debt. Administered by the Indiana University Center for Postsecondary Research, alumni in cohorts 5, 10, 15, and 20 years after graduation were invited to participate in the 2009 administration.

Participants

The participants were 4,031 alumni from 54 different arts high schools, undergraduate, and graduate colleges or arts programs within larger universities. A variety of geographic regions across the United States were represented in the sample. Of the 54 participating institutions,
24 (43.6%) were from Northeastern states, 5 (9.1%) were from Western states, 12 (21.8%) were from Southern states, and 14 (25.4%) were from Midwestern states. Of those alumni who responded to the survey, 488 were high school alumni (12%), 2,745 undergraduate alumni (68%), and 798 graduate alumni (20%). Of these alumni, 38.7% were male, 61.1% were female, and 0.2% were transgender. The majority of alumni reported their ethnicity as Caucasian (84.0%) and were U.S. citizens while enrolled at their institutions (89.6%). The sample was comprised of 19.4% from the 1989 cohort, 21.1% from the 1994 cohort, 24.9% from the 1999 cohort, and 34.6% from the 2004 cohort. The average institutional response rate across all cohorts was 24.6%.

Materials

The outcome measures were a set of questions included in a larger survey administered to participants online from November 2009 to January 2010. Participants were sent an invitation email including a link to the survey. Participants could log in multiple times, so they were not constrained to complete all questions during a single setting.

The outcome measures for this study are taken from a set of skills and competencies. Participants were asked “how much did [your institution] help you acquire or develop each of the following skills and competencies?” and provided responses using a four-point Likert scale with the end points of “Not at all” to “A Lot” and a “Not Applicable” option. For the purposes of this study, the “Not Applicable” responses were removed from the data to create ordinal variables. The skills and competencies used as dependent variables included Artistic Technique, Communication Skills, Social Skills, Personal Growth, Research Skills, and Technology Skills. Each skill was accompanied by a brief description, such as “develop the skill set needed to produce and represent my art effectively” for Artistic Technique.

The grouping variable for this study was school level of alumni (high school, undergraduate, or graduate). Participating institutions provided this information to the researchers through the submission of a population file, which was used to contact alumni with the invitation to participate in the survey.

Results

A series of ANOVAs were conducted to investigate potential differences between alumni school level for the skills and competencies of interest.
Artistic Technique

The results of this ANOVA suggest significant differences by school level in how much alumni perceived their institution as contributing to the development of artistic technique, $F(2,3309) = 25.09, p < .001, \eta^2 = .015$. Games-Howell post hoc analyses showed that graduate alumni ($M = 3.39; SD = .03$) have significantly lower perceived development of artistic technique than undergraduate alumni ($M = 3.50; SD = .015$), both of which have significantly lower perceived development of artistic technique than high school alumni ($M = 3.70; SD = .04$).

Communication Skills

ANOVA results suggest significant differences by school level in how much alumni perceived their institution as contributing to the development of communication skills, $F(2,3348) = 44.35, p < .001, \eta^2 = .026$. Games-Howell post hoc analyses showed that graduate ($M = 2.87; SD = .03$) and undergraduate alumni ($M = 2.86; SD = .02$) have significantly lower perceived development of communication skills than high school alumni ($M = 3.30; SD = .04$).

Social Skills

Significant differences were also found by school level in how much alumni perceived their institution as contributing to the development of social skills, $F(2,3346) = 83.17, p < .001, \eta^2 = .047$. Games-Howell post hoc analyses showed that graduate ($M = 2.99; SD = .03$) and undergraduate alumni ($M = 2.96; SD = .02$) have significantly lower perceived development of social skills than high school alumni ($M = 3.54; SD = .04$).

Personal Growth

The results of this ANOVA suggest significant differences by school level in how much alumni perceived their institution as contributing to the development of personal growth, $F(2,3353) = 48.37, p < .001, \eta^2 = .028$. Games-Howell post hoc analyses showed that graduate ($M = 3.17; SD = .03$) and undergraduate alumni ($M = 3.13; SD = .02$) have significantly lower perceived development of personal growth than high school alumni ($M = 3.60; SD = .04$).

Research Skills

Significant differences by school level were found in how much alumni perceived their institution as contributing to the development of research skills, $F(2,3292) = 6.26, p < .001, \eta^2 = .004$. Tukey’s B post hoc analyses (used instead of Games-Howell due to unequal variances assumption) showed that high school ($M = 2.67; SD = .05$) and undergraduate alumni ($M = 2.67; SD = .02$) have significantly lower perceived development of research skills than graduate alumni ($M = 2.82; SD = .04$).
**Technology Skills**

The results of this ANOVA suggest significant differences by school level in how much alumni perceived their institution as contributing to the development of technological skills, $F(2,3229) = 33.93, p < .001, \eta^2 = .021$. Games-Howell post hoc analyses showed that high school alumni ($M = 2.03; SD = .05$) have significantly lower perceived development of technological skills than graduate alumni ($M = 2.40; SD = .04$) and undergraduate alumni ($M = 2.50; SD = .02$).

**Discussion**

Several patterns of differences emerged. The first pattern showed high school alumni means as significantly higher than undergraduate alumni means, which in turn were significantly higher than graduate alumni means. This pattern was found for artistic technique, a very relevant variable for arts schools. It was at first glance counterintuitive that the “lowest” level of education, high school, actually showed the highest perceived development of the skill. On further reflection, it may be that for high school alumni, their experience at their institutions was the first intensive arts training they had ever received, and therefore they made large strides in their development of artistic technique. Those in undergraduate programs may have already had some intensive training in their younger years, and logically those in graduate programs must have already had intensive training in order to gain acceptance into their programs. While undergraduate and graduate alumni continue to refine their artistic techniques, it may be that the most gains are made during one’s first intensive training experience.

Another interesting pattern was found for communication skills, social skills, and personal growth. In interpreting these analyses, the results suggested that high school alumni means were significantly higher than both undergraduate and graduate alumni means. These skills, consisting of both interpersonal and intrapersonal aspects are often not specifically addressed in arts training programs but are a desired positive outcome nonetheless. While additional research is needed to verify this, one speculation for this result is that arts high schools provided alumni with an opportunity to be with other artists, and this may have been their first opportunity to interact with numerous students with similar interests. High school students undergo a great deal of social and emotional development during their adolescent years (Berk, 2009), and the chance to be around students and teachers that were supportive of their interests may have had a positive influence.

A third pattern was found for research skills. The results of this analysis suggested that graduate alumni report significantly higher perceived institutional contribution to research
skills, as compared to high school and undergraduate alumni. This distinction between levels of alumni is not surprising, as graduate students are often required to complete theses, dissertations, or other culminating projects. Depending on the discipline, students may be expected to present or publish their work, which often requires extensive research skills. Increasing research requirements for high school and undergraduate students may not only increase research skills, but may also give those students an advantage at success in graduate study, if they choose to pursue it.

A final pattern appeared when examining technological skills. These results suggested that undergraduate and graduate alumni report significantly higher perceived institutional contribution to technological skills, as compared to high school alumni. This distinction between levels of alumni is also somewhat logical, as students who are continuing to refine their artistic skills may also require more and more knowledge of the technology associated with their discipline. More research is needed on the impact of these skills and their importance in arts training curriculum. Are these patterns different depending on the cohort year of the alumni, with more recent cohorts having an overall better perception of the development of technological skills? Do institutions with better funding and subsequently more cutting-edge technology have an advantage in this area?

**Potential Applications**

In terms of improving the educational experiences of arts alumni at all three (high school, undergraduate, and graduate) levels, some potential applications arise when considering the patterns found in these results. In examining the major strengths reported by high school alumni, many noted greater development in areas of interpersonal and intrapersonal skills. These social and emotional connections may have arisen from the sense of artistic identity and community felt by students, which was a unique characteristic of attending an arts-focused high school. Undergraduate and graduate level institutions may benefit from attempts to create this sense of community among their students as well. This “cohort” feeling could be fostered by the creation of an arts-based learning community, where a common cohort of students are all enrolled in a set of classes that are linked or clustered during an academic term. Furthermore, less formal programs could also be implemented to create a greater sense of camaraderie, such as co-curricular clubs and activities or arts-based volunteering opportunities. Fostering a sense of community, especially at larger institutions where arts programs are only a minor subset of all programs offered, could help undergraduate and graduate programs enhance the development of many skills and competencies in their students.

There are also improvements that arts high schools can make, given the results indicating the strengths of postsecondary arts programs. Greater development of research and technology
skills were reported for graduate and undergraduate alumni, respectively, which makes sense considering the curricular emphases of the different levels. However, high schools could attempt to incorporate some of these higher level skill sets into their curriculum to provide their students who do go on to study art at the postsecondary level with an advantage. More rigorous research requirements, in the form of presentations, written papers, or other demonstrations of knowledge will compel students to establish a knowledge of the field that transcends the “how to” aspect of making art into a greater understanding of their artistic discipline. Increasing high school students’ technological skills may be somewhat more difficult, given the budget limitations facing nearly all schools nationwide. However, greater access to technology will also provide high school students with an eventual advantage as they go on to further education. Although financial restrictions may not allow all students the kinds of hands-on experiences necessary to gain mastery of a particular technology, simply having the exposure to the technology, in whatever limited form is available, could be beneficial on some level as well.

Limitations

Although there are several strengths of this study, some limitations should be noted. The data was collected only from institutions that choose to participate in the project, and only alumni with contact information were invited for participation. While institutions at a variety of geographic regions were included in the sample, there may be a great degree of difference by region, in terms of administration and curricular emphases, which was not specifically accounted for in this study. Therefore, the sample is not representative of all arts alumni, and caution should be made when making generalizations. The survey also had a somewhat low response rate (24.6%), which may also impact the representativeness of the sample, although recent research suggests that alumni surveys with lower response rates can still provide an adequately representative sample (Lambert & Miller, 2012). Furthermore, this study relied on self-reported perceptions of institutional contribution to the skills and competencies, which may not be completely objective. However, most studies looking at self-reports of students in higher education suggest that self-reports and actual abilities are positively related (Anaya, 1999; Converse & Presser, 1989; Hayek, Carini, O’Day, & Kuh, 2002; Laing, Sawyer, & Noble, 1988; Pace, 1985; Pike, 1995).

Conclusions

This study suggests that all levels of arts education are instrumental in developing skills needed for artistic work, but perhaps the kinds of skills and competencies learned are different. As suggested in both Tannenbaum’s Star model (2003) and the Differentiated Model of Giftedness and Talent (Gagné, 2009), the results of this study provide further support that the environment, in this case the school level, does have an impact on the
development of these artistically talented individuals. The first experiences with arts education might be the most important for gaining critical skills, such as artistic technique. As high school is much more focused on social situations, it might be where artists learn social and communications skills and start building their artistic networks. Higher education programs are suggested to be the place for artists to learn technical abilities. Finally, graduate programs allow students to hone their research skills. This exploratory research suggests that future research should be done to delve even deeper into the education of our creative workforce, in an effort to bring high quality institutional experiences to all those studying the arts. The impact of these experiences can be quite extensive and far-reaching. As one alumna wrote in the final open-ended question on the survey, she considers her time at her arts high school to be:

The best years of my life. They were the “glory years.” We all wish we could go back. The relationships I made there, students, teachers, administrators, [and] head of school are the longest and strongest in my life. My identity as an artist and as a person lies in the foundation that school brought to my life. There will never be clear enough surveys to illustrate what they did for me. There will never be enough words.

References


**About the Authors**

Angie L. Miller received her Ph.D. in Educational Psychology (with cognates in Gifted Education and Research Methods & Statistics) from Ball State University in 2009. She also has an M.A. in Cognitive and Social Psychology from Ball State University and a B.A. in Psychology from Hanover College. She currently holds a research analyst position at the Center for Postsecondary Research at Indiana University. She does research and data analysis for the National Survey of Student Engagement (NSSE) and the Strategic National Arts Alumni Project (SNAAP). Her research interests include creativity assessment and factors impacting gifted student engagement and achievement.

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