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The Role of Art in a STEM World

Ever since I was a child, I was conditioned to believe that being a STEM major was the only way to achieve success in our society. My middle and high schools encouraged me to take challenging math and science classes so that I would be prepared to apply to universities with competitive STEM programs. My parents, both of whom were science majors, praised me when I expressed interest in pursuing a career in science. My college counselor urged me to apply to schools with well-funded research programs rather than smaller, liberal arts colleges that would have provided me with a more well-rounded education. I have always felt passionate and drawn towards the sciences, and I hope to become a surgeon after college and medical school — but what if this was not the case? How would I be treated as a student if I was passionate about linguistics, philosophy, or English instead? Why is there such a negative stigma associated with pursuing careers in the humanities, and as an aspiring doctor, how would a minor or double major in the humanities help me be more successful in my field?

It is no secret that our country tends to view STEM majors more favorably than those who choose to study fine arts. Our nation's focus on advancing science encourages children to grow up and contribute in the race to scientific superiority over other countries. Unfortunately, when there is too strong of an emphasis on science, many essential elements necessary for a quality education that can be gained from the humanities are lost. For instance, in high school, I

was given the option to register for AP science classes, which I was told were necessary to be considered at a top research university, or art classes, which I was led to believe were the easier path through high school. I was worried that if I registered for too many art classes rather than math and sciences, it would not look like I challenged myself academically during high school. I was surprised that when I finally decided to register for art, it was a bit more challenging than I initially expected because it required me to change my previous ways of learning and caused me to think in more creative ways. Referring back to Howard Gardner's theories of multiple intelligences, I found myself identifying with the logical-mathematical intelligence, and the art classes challenged me to develop the opposing sense of spatial intelligence. I was familiar with how to efficiently solve math problems and memorize information for chemistry exams, but I felt utterly lost when I needed to express my emotions on a blank canvas. However, after becoming more familiar with methods of artistic thinking, my ideas flowed more easily from my mind to the canvas. I enjoyed the ways that art classes challenged me to think spatially in order to present my ideas in an organized and meaningful fashion. I believe that it is crucial for students learn that the arts are an acceptable career path instead of being led to believe that they are slacking off if they chose to deviate from the path that leads to a career in a STEM field; the arts are essential for a well-rounded education as they teach valuable skill sets that cannot be learned in a lab.

STEM encourages students to think mathematically in order to find the fastest and most efficient solution to a problem; in STEM there is a concrete right answer, and this answer can usually only be found in one way. On the other hand, the humanities focus on finding various methods for reaching a conclusion, and the correctness of the answer is usually up to the interpretation of the thinker. Consequently, with the increasing emphasis on STEM-focused

education, students in the United States are losing their ability to think creatively; this loss, surprisingly, hinders a student's ability to think and reason scientifically and mathematically.

I believe that the United States's focus on STEM has led to an increasing acceptance of low standards in humanities education in middle and high schools. Employees at schools who are in charge of managing the budgets for education are pressured by parents to put the majority of the money towards advancing STEM courses; parents want their children to be taking classes that they believe are beneficial for getting into competitive colleges and, eventually, into STEM careers. As a result, when it comes time to cut programs, arts education tends to be the first to go. The elimination of arts education means that children will lose the opportunity to learn how to think creatively and abstractly. Students will not be able to explore talents that could potentially lead to a career in the humanities. The humanities are a valuable tool that provide students the opportunity to develop critical thinking skills, the ability to analyze themes in art and literature, and the ability to express one's thoughts articulately. If the humanities are not studied, students will not understand the degree to which the arts affect our culture, politics, and media. It is essential for educators to realize that the sole purpose of education is not to merely to train students to join the workforce after graduation immediately; rather, students need to acquire the skills that teach them *how* to learn so that they can be efficient and creative problem solvers — they can be taught the skills necessary for their particular job in the field.

Although I am a STEM major, I am frustrated by the social stigmas associated with arts education and careers in the humanities. When people ask me my major, I am never asked "how are you going to get a job after college," or told my degree is useless the way that many humanities majors are. Yes, humanities majors sometimes find themselves working harder than

STEM majors to find jobs after graduation, but their degrees are no less valuable than those in STEM fields. The point of college is for students to identify their unique skillsets, and to eventually find a way to utilize these talents in a meaningful career. For instance, I enjoy learning about biology and tend to score well on biology exams and labs, so I am double majoring in molecular and marine biology, but this is understandably not true of everyone; why should a student who is a gifted and passionate writer be pressured into pursuing a career in mathematics? It is essential for parents and educators to become more accepting of careers in the humanities because the percentage of students majoring in the arts are becoming the vast minority, which could have devastating consequences in fields that require creative problem solvers. Also, while science makes life more efficient, art makes life more meaningful. Humanities majors are essential because if people do not spend time learning other languages, ideas will not be spread across countries, causing more people to possess a relatively narrow worldview and only be considerate of the culture of their own country. The reduction of the number of open-minded, creative thinkers could have a devastating effect on the way that our history and culture is recorded and interpreted by current and future generations.

Even though the humanities have value as independent majors, when earned in conjunction with a STEM major, they can create a highly desirable job candidate. The STEM major will convey a strong understanding of mathematics and the ability to comprehend and memorize advanced material. The humanities major will display the candidate's ability to grasp and articulate abstract ideas. The combination of these majors demonstrates the ability to interpret and explain scientific topics and in a way that is understandable to people in non-STEM fields. This untraditional combination of majors will create an individual who bridges the gap

between two seemingly opposing areas of study. However, if students are discouraged from pursuing with the humanities during their formative middle and high school years, it is unlikely that a large number of students will pursue a STEM-humanity double major in college.

Upon reviewing all of the benefits that come with a focus both in STEM and the arts, I am considering incorporating a major in the humanities into my college plan; I recognize that a well-rounded education will be a beneficial asset when applying for medical school and eventually for jobs. As I mentioned before, I plan to become a surgeon. A career in the surgical field demands a thorough understanding of the processes that keep the human body alive. Surgery can be related to the study of the humanities because the humanities are focused on the study of the human race; a double major with a dual focus on anatomy and a social science will allow me to understand what is going on with patients on both the physical and emotional level. This knowledge could allow me to diagnose and identify both physical and psychological problems more accurately. Also, studying the humanities would give me the ability to quickly and creatively problem solve; a skill that is essential during a procedure when everything may not be going according to plan. If I had a background merely in STEM, I would be used to problem-solving by only relying on knowledge from previous experiences to reach one correct solution; this tactic would not necessarily work in the operating room, which is place where new ideas are constantly being invented and evolve through trial and error.

Additionally, doctors from the United States often travel abroad to help those with inadequate medical care and services through organizations such as Doctors Without Borders. I hope to volunteer with a group like this someday, and when traveling abroad, it is essential to have an understanding of differences in culture and customs that will be encountered. It would be

nice to have a background in the humanities before volunteering abroad because I could arrive with an understanding of the differences in cultural norms and perhaps knowledge of how to speak some of the languages of the people who I will be helping. A double major in a STEM and the humanities would not only provide me with additional knowledge about the human race, but it would make me a stronger scientist; it is essential that more parents and educators realize the connections between these fields before the study of the humanities is entirely obsolete.