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# The Power of Art and Science

Art is a diverse range of human activities in creating visual, auditory, and physical performances to express emotions and storytelling. Science is the study of behavior of the physical nature of the world through observations and experiments. Yo-Yo Ma is a cellist and songwriter who began performing at the age of five. Ma wants to influence others that music and art has a huge impact in a person's life and helps develop more than just creativity. Ma wants to help add arts and music into the schooling system STEM, making it STEAM. I find Ma's point of view to be very relevant in today's schooling systems. I do feel like education in art and music is often looked down upon. Ma brings to attention that art and music can teach us to cope with tough situations, help us express our emotions, tell stories, and help develop cultures and traditions. Lehrer, the author of "The Future Of Science… Is Art?" argues that the combination of art and science can help develop an open mind, he argues that "having an open-mind in our answers to these questions, will discover that poems and paintings can help advance our experiments and theories. Art can make science better" (Lehrer 7). The last article that we analyzed I felt was the most contradicting of them all. Steven Pinker, a Canadian-American cognitive psychologist, linguist, and popular science author argues against a statement addressed by Kassay who is a post-conceptual artist best known for his work in painting, filmmaking, and sculpture, about the idea of how science affects religion. The power of art and science together as

an equilibrium will have a vigorous impact on health care professionals by developing an emotional consciousness, encourage the development of cultures and traditions, and help open the mind by detecting patterns.

Is science the only point of knowledge needed to be successful? Steven Pinker, the author of "Science Is Not Your Enemy" discusses in his article how science is the key to success. He introduces several great thinkers that have crafted their ideas with the background of science. One thinker was Rene Descartes, Descartes was a french philosopher, mathematician, and scientist. One of Descartes hobbies was cosmology, which is the study of the galaxy and outer space. Another individual mentioned by Pinker was Rousseau, who was not only a philosopher and a writer, but a composer in music as well. Pinker argues that "all great thinkers learned mathematics, physics, and physiology." Yo-Yo Ma, the author of "Necessary Edges: Art, Empathy, and Education" would disagree with Pinker. Ma is a cellist who has a passion for music, similar to Rousseau. Ma believes that art and science create an "equilibrium" of our necessary edges. Ma argues that critical thinking and empathy thinking are needed for science to help develop creativity and a stronger understanding of emotions. Rousseau as a composer may have been a "great thinker" because of his passion for art in the form of music which may have helped him discover new ways of constructing new ways of thinking about how the universe and society interact and behave. Could it really be true that art increases your flexible thinking and discipline imagination?

There is one way to put the power of art to the test. Ma comes up with the idea of transforming "stem" to "steam." Stem is the most common form of curriculum in schoolinging systems today. Stem stands for science, technology, engineering, and mathematics. Stem is

looked at as the most relevant topics of education for students to develop a well-rounded education for a successful career in the future. Ma disagrees with this system, Ma believes that art should be integrated into the schooling curriculum. Ma argues that “the values behind art integration-collaboration, flexible thinking, and disciplined imagination-lead to the capacity to innovate.” To Ma art and science need to be combined to understand empathy and critical thinking. As introduced before by Pinker, Descartes was a french philosopher but also has a passion for cosmology. In the study of cosmology art is needed to explore the ideal image of the galaxy and outer space. Astronomical art is the aspect of space art devoted to visualizing the wonders of outer space. This tool helped scientist discover and develop creativity to assist the thinking of how we can obtain more information on the outer space. This isn’t the only place where the knowledge of art can help improve learning. In today’s society is seems we are all focusing to deeply on critical thinking, rather than empathetic thinking. Art is a key tool used to help develop empathetic thinking. Art and music can teach us to cope with tough situations, help us express our emotions, tell stories, and help develop cultures and traditions. Art can also help improve the way health professionals treat their patients.

The push to advance STEM to STEAM will have a strong impact on healthcare professionals to help enhance their empathic consciousness. There are many health careers that can benefit from the knowledge of art. As a dental hygiene major, I find that learning art and music could help improve the care given to patients. Developing a knowledge for music and art can help health care providers have ~~an~~a strong understanding of empathetic thinking by ~~by taking~~exploring emotions through creating art.~~ emotions as well as reason into account.~~ Science is known to help cure diseases, says Pinker, but isn’t physical health just important as mental

health? Art therapy is a career I have been strongly interested in for some time. With art therapy patients use art materials and the creative process to explore emotions, reduce anxiety, increase self-esteem, and resolve other psychological conflicts.- It is also found that most health care careers have practiced on art models of either teeth or the body, such as plastic skeleton figures to help learn the anatomy of the t~~A~~he body and ~~s~~mouth. ~~a~~ As a current student in today's society I relate to Yo-Yo Ma's argument, "empathic thinking is something that is severely missing in education today that is only STEM oriented" (Ma 2). In high school I was in a science based LNA program, in this program we mainly focused on physics, anatomy, medical terminology, and statistics. My last two years of high school were so surrounded by science based courses I was never able to explore any art programs. I feel like the lack of art education that I did not receive has set me behind in the health field. Coming to UNE, I have been given the opportunity to enroll in an art course, printmaking. In printmaking, as Ma would say, I put my "empathetic thinking" to use to allow myself to create a "new consciousness" by allowing me to engage in variety of emotions instead of avoiding them. I focus on how different shades of colors make me feel and focus on the story that I see behind the image and i've realized that not everyone sees the same chapter of the story. This skill, I find, could help me connect with my patients feelings in the future, and even assist with coping with life or death situations (Ma 2). Like Ma, I find has science evolved major, that art is necessary such as "oxygen, hydrogen, light, acidity, and temperature" to not only help health professionals to not only help us understand our own emotions before we understand someone else's, but to help us create an open-mind and view situations even in the blind spots.

~~Science and music can have the same effect of creating an open-mind by detecting patterns. "Art has been been found to help physicists explore the meaning of mathematics from a different perspective" (Lehrer).~~

Pinker and Kassay disagree on the way are can have an affect on religions and culture. ~~Science is known to help cure diseases, says Pinker, but isn't physical health just important as mental health? Art therapy is a career I have been strongly interested in for some time.~~

~~Dental hygiene is learned through models of the teeth designed by artist, just like the solar system was first studied on a model, and anatomy is studied on a plastic sculpture of a skeleton.~~

Pinker is someone who speaks very retrospective by mentioning people who he believes were "creative thinkers" from the 1600's. Pinker believed what made Rene Descartes and Rousseau creative thinkers was by "contributing to mathematics, physics, and physiology" (Pinker 1). Although Descartes and Rousseau were by Pinkers definition of "scientist", Descartes was also a cosmologist and Rousseau was a composer. As a cosmologist, Descartes was exposed to lots of models made by artist to help study the placement of the planets and the galaxy. Rousseau as a composer had a passion for music, Ma stated that "in music there are patterns and sound" (Ma 5). From music, it could be possible that Rousseau found patterns in music to help explore the meanings of his experiments in a different point of view. Even within the minds of the

“best thinkers” art has had an effect on their work in the scientific field. Cubism is a word that Pinker spoke a lot about, he states that “cubism seems to have nothing in common with modern physics” (Pinker) but it does. Cubism means art, movement, shape and how they are not looked at all in the same perspective, this is the same in art. Art of all kinds is looked at from different views form everyone’s personal lens. While looking at “The Old Guitarist” created by Picasso, one might see a weeping man letting his emotions go, one might see a man writing a happy love song. The colors and movement of the painting change the way each person's views the story created by Picasso.

Music is a way that art can develop and form cultures, traditions, and religion. Yo-Yo Ma discussed how “each culture has adopted music, investing it with specific meaning, but each culture must share ownership” (Ma). What Ma says about the culture of music is similar to the way each culture views science. Each culture understands the process of childbirth, but throughout different religions, child birth might be completed differently depending on your personal beliefs. The different ways of childbirth is like the different ways each person feels and what each culture believes in when they hear a certain song. Ma explains this idea in a better way by saying “different cultures see things in a different point of view-just like someone might view the Big Bang as a cosmic firecracker” (Ma). Although, this isn’t the only way that art develops culture and religion. Pinker and Kassay disagree on the way art can have an affect on religion and culture. Kassay says that “science is doing a battle against our traditional religious and moral teaching, even your self understanding as creatures with freedom and dignity” (Kassay).

Pinker quickly argued against Kassay saying “there is no such thing a state, karma, spells, curses” (Pinker). What Pinker is arguing about there being no such thing as karma or spells is the person example of attacking someone's religion. Another way that I disagree with Pinker would be when we argues that “science is all that matters” and “scientists should be entrusted to solve all problems” (Pinker). The reason I strongly disagree with Pinker is because it has been proved over and over that art is a virgos impact on health care professionals, help develop and form cultures and traditions, as well as help develop an open-mind for scientific experiments.

So why is learning the importance of art and music important to the sciences? Well, art and music can teach us to cope with tough situations, help us express our emotions, tell stories, and help develop cultures and traditions. I find that learning art and music could help improve the care given to patients from a lot of health care professionals like myself as a dental hygiene major. Developing a knowledge for music and art can help health care providers have an understanding of empathetic thinking by taking emotions as well as reason into account. As a primary health care dominance University, I feel that UNE should take charge of making any form of art a requirement here at UNE. This will allow UNE students to give their future patients the best empathy patient care in their future health professional careers. A way UNE has already developed a powerful way to develop an understanding of art and science together is by having such a diverse study abroad program. Studying abroad is a rich way to experience the way different cultures care for their patients, express their care through their art, and develop an open-mind for their research and discoveries. Traveling abroad can not only teach us that different cultures treat art and science in different ways, but that art and science as an

equilibrium can help us all see through a new lense. The power of art and science together as an equilibrium will have a vigorous impact on health care professionals by developing an emotional consciousness, encourage the development of cultures and traditions, and help open the mind by detecting patterns.