STEM Education & Where it Can Take Us

At 18 years old I became certified as [*redacted*]. This opened many doors of opportunities for me such as dual college credit, employment opportunities, advancement in my employment, and a substantial amount of knowledge on how to save a life. With the help of high school offering STEM related classes such as this one, it has prepared me for my career in [redacted] as well as gain exceptional amount of experience that has been beneficial throughout my time leading up to becoming a [*redacted*].

In 2001, the acronym STEM (Science, Math, Engineering, Mathematics), was first introduced at the U. S National Science Foundation by the scientific administrators, previously went by SMET. According to Wyatt Dalton in his article, [“What Is STEM?”](https://pearsonaccelerated.com/blog/stem) he defines STEM education as the amalgamate of subjects containing Science, Technology, Engineering, and Math that teaches the four subjects tied together into one program. STEM offers creative ways to incorporate study methods and ways to solve real world problems. Students attending California Institute of Technology has the opportunity to engage in producing cutting edge technology and innovative discoveries. With large portion of STEM programs being hands on, students learn skills by doing on their own. Some of the largest field of STEM is computing with a little over 70% careers. The second largest field falls under Engineering and Physical Science. These careers consist of Orthodontist, Nurses, Biochemist, & Civil Engineers. Even though mathematics and science make up smaller portions of the fields in STEM it makes up a third of STEM careers.

In another article by Elisabeth McClure, she makes the claim STEM is important for all children in all subject areas in the article, [“4 Things Everyone Should Know About Early Stem Learning.”](https://www.commonsense.org/education/articles/4-things-everyone-should-know-about-early-stem-learning) This framework provides students with conceptualization and real-life instructions that offer critical thinking experiences and problem-solving skills that will follow throughout adolescent life and will be relevant in when dealing with real world problems. Children of all ages can have the opportunity to learn STEM skills and habits from everyday play or learning activities. In the same article by Elisabth McClure, it discusses how a child can begin to collect data, develop different approaches to problem solving, and adjust to tough situations at young ages. It further explains how one researcher put to reality, the equivalent number of scientific practices that high school students could do, children younger in age were capable of doing as well. Documents also shown children being able to conduct systemic experiments in the first years of life. The job market for STEM careers continues to grow based on an article by Ryan titled, [“Why Is STEM Important? Why Do We Keep Talking About It.”?](https://www.idtech.com/blog/why-is-stem-important) Even with the vacancies in certain areas in STEM, STEM jobs will continue to evolve. The author also claims a powerful link connecting STEM to early childhood. Further explains studying STEM skills early have an impact on children by prepping them for school and future career paths.

Behind The Scenes of STEM Education

In the article, “Why We Need More Young People In Stem- And How We Can Do It” by [Alistair Cox](https://social.hays.com/2018/02/26/young-people-stem/) discusses the different approaches to take in order to influence more opportunities towards a STEM education as well as the importance. The article further explains the needs for revision in the curricula to remain relevant to the 21st century. Some revisions include adequate time educating students on the copious work labor industry and applying the skills learned into the work industry. Without the revision new apprenticeships such as the UKs are at risk of delivering a bad reputation towards STEM education.

The author begins to use reasoning to persuade readers by influencing the change to help countless young individuals with having a better work industry then previous generation. This is done by the author emphasizing the growth from individuals with quality skills in science, technology, engineering, and mathematics by crossing subjects and discovering new ways to forecast the weather with data and detecting illnesses with wearable technology. The author makes the bias statement that more students that are female need to be interested in STEM because a percentage of the female population in STEM has decreased even though the jobs have increased since 1990.

Another bias statement the author makes is that individuals are resistance to the subject’s math and science because they are seen as uninteresting or to challenging.

The Reasonings & Thoughts behind STEM Education

Alistair shows credibility by sharing an experience with a student. Student expressed appreciation in video games but dispersed STEM employment opportunities. After detailed conversation over creation of video games, this resulted in students’ connection and interest in engineering. He also shows credibility by sharing the apprenticeship he was a part of, the British Aerospace, aeronautical engineering and sharing the emotions and benefits from the aerospace. According to the article, students that job-shadowed in STEM environments had a higher influence choosing a path in a STEM career. Author begins to use emotions by explaining how companies can integrate ‘Bring Your Child to Work’ days. This will be introducing the children of the employees to the STEM workplace at an early age. Readers can be intrigued by this especially if they have young ones they support.

[Joseph Lanthan](https://onlinedegrees.sandiego.edu/steam-education-in-schools/#why-steam) defines STEAM as the educational subjects that intrigue students in Science, Technology, Engineering, the Arts and Math in the article titled “Why STEM Is So Important To 21st Century Education.” Students educated under the STEAM framework are introduced to other helpful skills besides just the subjects of STEAM such as gaining understanding how to learn, asking questions, and ways of creativity and experimentation. This composes students to work in fields that are destined for growth. The arts were later added to STEM regarding recognition and creative ways to solve problems, combine propositions and convey information. In this article the author shows biased by saying STEAM education prepares students with skills and to see the bigger picture with solutions because readers may develop emotions towards statement if a traditional education was received by the reader. The author establishes credibility by offering many resources and activities to begin exploring the world of STEAM. The author also offers a list of opportunities to receive scholarships along with STEAM Grants for schools to incorporate STEAM education. This can be a steppingstone for those that spark an interest in STEM related careers but unaware n how to get there. Lastly the author expresses emotions by stating the faults in the education system. These faults including children unable to solve real-world problems, and lack of group activities.

In the Article “Stop Pushing STEM” by [Dana Albert](https://www.albertnet.us/2019/10/stop-pushing-stem.html), the author proclaims the disbelief that a greater income doesn’t come from STEM, and the chances of finding a job with STEM education doesn’t increase. The article also gives doubts about STEMS importance to students. The author Dana Albert shows biased with the graphs he uses to incorporate how jobs play out over time. This shows biased because the graph assumes that everyone is great at each job which is known to not always be true. Emotions are shown to attract readers when the author begins making analogies to cats versus dogs by stating you wouldn’t treat a cat the same way as a dog so why do it to humans. Making that connection with readers gives the readers the impression to feel guilty. Another act where emotions are displayed is when the author expresses the mental health conditions obtained from constant pressure of opinions by adults. The author also mentions kids who are not given the opportunity to establish self-identity, more kids end up experiencing depression, anxiety, emptiness, and even substance abuse. This is credibly since the author also states the key factor for happiness in a person results from job security and the income it brings. Credibility is also displayed by author when talking about students having to study STEM to get a well-paying job to live in certain communities. The author uses neighbors as an example explaining the decrease in their STEM background but still able to afford living in the community.

After reviewing multiple sources over the emphasis of STEM education, I believe it is necessary for students to have early exposure to STEM related activities. Working in an elementary school I see first-hand how students exhibit different skills throughout the day. Many students lack basic skills. In some instances, children have complained about the challenges they are being faced with instead of using critical thinking and problem-solving skills to face the challenge head on. I also believe early introduction to STEM is a great opportunity for students to decide what career field they would like to pursue into adulthood. As previously stated, I became certified as an EMT-B, this opened many doors of opportunities for me at just 18 years old. With the STEM course it has given me the opportunity to see what I like and dislike in the medical field. For example, deciding to be [*redacted*], or pursue my goals as being a [*redacted*]. Some other accomplishments I have benefited from taking this course is earning different certificates such as CPR, and weapons of mass destruction, as well as an opportunity to join the [*redacted*]. I am thankful for the opportunity I was given in high school as it has prepared me for my future career path in [*redacted*].

As parents we lead by example to our children. By partaking in STEM related activities or careers this can be influential to children without even knowing it when they see us setting goals and achieving them. For example, I am currently in school for [*redacted*]. My daughter has seen all the hard work I have dedicated to my education and future career. She has also experienced the knowledge I obtained first had and has sparked interest in the medical field. Just from my daughter observing my actions she has decided she wants to become a veterinarian and I support her decision 100%.

However, some sources displayed some weaker and stronger points related to STEM education. In the article, “Why Is STEM Important? Why Do We Keep Talking About It?” the author Ryan makes a stony point by saying, “we need to first educate in order to educate.” We are the first teacher to our children and with the lack of a parent’s knowledge on STEM I believe this can significantly impact the choices made by our children and the futures to come. Based on my experience as stated in the last paragraph I believe this to be true. Another interesting point one of the articles made was the growth of individuals predicting weather and discovering illnesses with technology. Technology has advanced tremendously and being able to incorporate the use of technology to potentially save lives of individuals is amazing. Some of the weaker points the sources mentioned was that females need to be more interested in STEM. You can’t force something onto a person. Regardless of if they are female or male, an individual has that right to decide whether a STEM career would best suite them. I believe a reason there isn’t many females in STEM careers is because of the stereotype put on females that females can’t put in the same effort of work in as males could. Another weaker point a source makes is those students uninterest in math and science. This is weak to me because there are multiple jobs that have to do with math, science, or both and not all those jobs are boring. Nursing for example is mixed with both and I have learned about many interesting things from classes that required the use of these subjects.

Works Cited

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| **Project Portion** | **Ideal Criteria** | **Overall Feedback** |
| Introduction | * Engaging * Shows importance of question * Indicates major parts and content |  |
| Background | * Uses credible, neutral sources * Effectively and sufficiently explains essential information * Written objectively in own words * Well organized and focused paragraphs with transitions * Minimal error |  |
| Analysis | * Smooth transition from background * Summarizes accurately and in own words two opposing answers and one objective answer to the question * Recognizes bias * Reasonable observations about how all sources make their arguments impactful * Well-organized and focused paragraphs with transitions * Minimal error |  |
| Response | * Smooth transition from analysis * Incorporates strong points from sources * Draws a reasonable and well-supported conclusion, answering the question * Provides satisfying conclusion to the project * Good transitions between focused paragraphs * Minimal error |  |