The healthcare field is dominated by extremely high-cost procedures, products, and services. In the past decade, 3D printing has played a large role in the reduction of recovery prices. The event I am referencing is the integration of 3D printing into the healthcare field. While the first 3D printer was invented in 1987, it wasn’t until 2001 that the first synthetic scaffolds for human bladder tissue were printed. From there the technology took off. As more medical grade prints were sought after, printer became more and more advanced. Today, scientists are even bioprinting hearts and lung-mimicking air sacs.

While 3D printing allows us to print biological matter in a way that is impossible without the technology, it also happens to create much cheaper alternatives to traditional parts. Amputees all have different stories and slightly different amputations. For this reason, prosthetics are most commonly custom fit to the patient. The cost of a precise fit can be very costly though. For this reason, companies have started using 3D printing technologies to cheaply create custom fitting prosthetics. Xeometry explains that companies “leverage patient data like MRI and CT scans to create personalized implants, prosthetics, and anatomical models.” (Xeometry 2024)

Due to the high cost of prosthetics, many amputees are forced to live without. Depending on the amputation, it could mean they are forced to live life in a wheelchair. Students from the University of California San Diego understood the need for affordable prosthetics and created the LIMBER Prosthetics startup. LIMBER utilizes fast printing technology in order to print single piece prosthetic legs in under 12 hours. While they plan to sell the product in developed nations, the product will be free in undeveloped countries. Reportedly, “large scale could reduce the cost of a prosthesis by anywhere from 50% to 90%” (Patringenaru 2024). They have even partnered with a local veteran help center to supply prostheses to in need veterans.

My choice of one general education interdisciplinary lens would be the history of the technology. The reason that I would prefer to discuss and research the history is because it is necessary to understand the context. Without and understanding of how the technology slowly integrated into the healthcare field, you would be missing huge amounts of context. For this reason a historical lens is an easy choice for me. My thesis statement goes as follows, “The integration of 3D printing technology in healthcare introduces technological opportunities impossible to reproduce otherwise.”

References

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