

How technology impacted biology

There is no doubt that scientific advances depend not only on new ideas but also to a large extent to a technological advance. Technologies have allowed scientists to discover new fields of research for example analysis of DNA or neuroscience. They have also meant that some biological research can be carried out easily and cheaply in every lab.

Modern imaging technology has an immense impact on cell research. Increasingly sophisticated microscopes have allowed scientists to discover and reproduce subcellular structures. Furthermore these technologies have allowed us to video and study cells as well as other subcellular organelles. The discovery of stem cells during this research has enabled us to progress medicine by developing cures to diseases like cancer. These are just some of the few examples of technological advances impacting biological discoveries.

Technologies that have been adapted to easy and affordable use in laboratories have changed the speed of scientific progress. The polymerase chain reaction (or PCR) machine is an example of how technologies have sped up laboratory work to enable research that would be too time consuming or simply not possible. The PCR machine makes millions to billions of copies of a specific DNA sample, allowing scientists to take a very small sample of DNA and amplify it a large enough amount to study in detail. The PCR test is used in the sensitive test for tissue typing and is a vital factor for organ transplants. It also allows us to identify non-cultivable or slow growing micro-organism such as viruses or bacteria and has helped diagnose early tuberculosis saving many lives.

The study of neuroscience has recently been propelled by the invention of novel technology, which is the improvement of processes or activities in the body. Advancing innovative neurotechnology revolutionises the understanding of our brains.

In the future as technology continues to advance and develop we are sure to see more and more technology in the study of biology. In the coming years we will make ground-breaking discoveries using newly invented technology and the study of biology will change and develop with it.

In conclusion I believe that innovative technology developed and used in biological studies has greatly improved our knowledge and understanding of ourselves as a species as well as other species. These technological advancements have led to breakthroughs in cancer research e.g. stem cells, or ground-breaking discoveries in fields like microbiology.