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## The Significant Role of Technology in Conducting the Academic Research

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**Abstract:** Actually, the academic research, as a sophisticated method appeared in the Higher Education, needs to facilitate the process, so it is noticeable that technology has changed the way of performing research. In the light of the tremendous technological advancements, like the use of technology in research work saves time, effort and costs allocated to research without affecting its quality, in addition to the diversity of experiences, knowledge and skills lead to the conduct of competitive scientific research. Likewise, the development of positive tendencies among researchers, creative thinking has grown, and it also plays the role of a guide, which leads the researcher to creativity and innovation in his field of research. Technology also, removes the intimidation factor of researchers, who used the technology to gather data for the academic research required in their programs.

Certainly, there are several reasons for using technology in scientific research; eliminating old research methods, that were large books, which requires much time and effort, and the cost, and helping the researcher to understand new concepts in easy ways commensurate with the intelligence and capabilities of each researcher, as well as achieving a high standard of quality in scientific research, furthermore, publishing studies among a larger group of people through modern means of communication, which leads to a high achievement rates among researchers, and increases the number of the study fields. This paper will attempt to discuss and outline the role of technology in performing the academic research, and show the importance of technology not only in doing the research, but also all fields of life, all over the world, as well as shed light on some devices used in conducting the academic research.

**Keywords:** Technology, Academic Research, Development, Education, Performance

## Introduction

Etymologically, the word technology originates from two Greek words, transliterated techno and logy. Techno implies skill, ability, art, or the means, way, or manner by which a thing is picked up. Logy implies word, the articulation by which internal idea is expressed, a maxim, or a saying. Along these lines, in a real sense, technology implies words or talk about the state of affairs picked up, yet in the contemporary utilization, technology has come to mean something other than what's expected. In one regard, the term has come to mean something narrower- the above definition would concede policy and art as a means to gain, yet those activities are pervaded by technology now, the vast majority of us would not believe it to be models or subsets of technology. In another regard, this definition is excessively tight, for when a large portion of us discuss technology today, we mean something other than a talk about the means for gain.

The working meanings of technology can be alluded in five unique senses as the following: firstly, the technological process, which is the judicious one of making a device to arrange and change matter, energy, and data to understand certain esteemed ends. Secondly, technological items, which is the arrangement of means (devices, tools, procedures, strategies, systems) made by the technological cycle, so the technological items go from toothbrushes to transportation systems. Thirdly, technological information, which is the one that makes the technological process conceivable. It comprises of current realities and procedures important to arrange and control matter, energy, and data, just as how to find new methods for such changes. Fourthly, technology is a subset of related technical articles and information, like computer and clinical technology are instances of the advances. Finally, the technological framework, is the plan comprising of the mechanical process, articles, information, designers of technological items, clients of technological articles, and the world perspective (i.e., the convictions and the estimation of the things that shape how one sees the world) that has risen up out of and drives the technological process, this is the thing that Ellul alluded to as the technological framework.

Definitely, the period of the 21st century is generally viewed as the time of technology, which assumes a significant function in our everyday life. It is conceivable just through technology that distances are no more obstructions and educational process can be brought to the student's doorstep, so the effect of technology can be felt in each field and one such field is education. For the most part, Education is a type of learning wherein the information, abilities and propensities for a gathering of individuals are changed from time to another through education, and researches (Nagasubramani, 2018).

Obviously, technology is an ongoing wonder in our regular existence that has taken off, in light of the fact that technology permits the most troublesome assignments to turn out to be flawlessly simple and more effective (Jennifer L. Harris, 2020). Technology assumes a significant part in each field of our life and one such field where its quality is most important is in the educational arena. With the progression in technology, education among individuals has started to multiply and there is consistent, innovative research going on to show new technologies, which make education simpler, enjoyable, and available for all (Budhwar, 2017).

As a result of technology, the world today resembles a small village, so information, and the process of communicating and disseminating knowledge has become an easy process that takes place very quickly. Accordingly, modern technologies have contributed to the development of science and the evolution of research and scientific studies for the ease of collecting data and information, whether through the Internet or communicating with relevant people, so technology has made the education process more effective and widespread, and increased the well-being, so researchers from everywhere of the world can meet up and share knowledge and experiences; the distances of geography are no more hindrances, which has been made conceivable just through technology.

In fact, our world is being reshaped by technology at an expanding rate, and that is amazing, similarly as technology contracts the world and democratizes data, it is likewise recreating how we study and research. This is significant for a rising number of students, and furthermore for the researchers, who drive the developments that improve life. On the research side, the development to smooth out the careful process of investigation started in the last part of the 60s, when the academic researchers began utilizing programming like SPSS to do complex analyses like direct linear relapse as opposed to writing them out in longhand. Many decades later, a cloud-based programming began

changing the manner in which researchers gather information, too. Adding technology to the blend, diminished the potential for human blunder and sped up the research procedures.

Possibly, it was heard that the technology is disturbing learning, yet the American ex-president, Barack Obama's top financial counselor went on record saying that the ascent of Web-based learning will bring down the expenses and hindrances to decent education and increase living expectations around the globe. The digital uprising in education is full steam ahead, and it is influencing something other than the study hall. The academic research is going through an innovative makeover, and it is important more than the vast majority of what we know. For the normal individual, the insightful quest for research workforce may appear to be more diligent to process than storylines about free school, yet when you understand that academic research influences each part of our life — including the economy, medication and human conduct — at that point it is a lot simpler to live with it. Clearly, it is difficult to tell where we are in the world's digital revolution, yet some educated individuals think that we are going through a turning point, with the ascent of internet learning and MOOCs, (Massive Open Online Courses) specifically, marking the appearance of another age. Others properly note that our move to the advanced peak has been a continuous one. Notwithstanding their viewpoints, it is plainly that technology has become the new basis in playing out the academic research and the entire educational community.

Clearly, in the scholastic world, faculty cadres comprehend better than anybody on the grounds that their educational lives rely on published research in academic journals, so remaining between the researchers and peer reviewed publications, notwithstanding, are hills of muddled co-ordinations that must be eliminated to concentrate on the main thing: top notch research plans and investigations. A great instance is Corinne Bendersky, an American, associate professor at UCLA's Anderson School of Management, who as of late distributed an investigation in the Academy of Management Journal. Her academic research, which challenges essential presumptions about the presentation of social open minded and anxious people at work, was made simple by utilizing technology to gather her data of the case study and exploratory information.

Previously, surveying an enormous association for a study is in need to print a large number of studies, purchasing stamps, envelopes, and wishing that everybody getting the questionnaires would accomplish it and mail it back. It would likewise require a significant time span from the association being overviewed. Performing quantitative research would be considerably more complex, requiring diligent research assistants to print and arrange incalculable situations. For instance, technology permitted Dr. Corinne Bendersky to keep away from these exorbitant issues and give the business world a key understanding of who to employ for high performing groups.

Undoubtedly, the development of scientific research evolved according to the documents of technological development, so the tremendous progress of the current century in the field of technology and the tremendous development in various fields by means of communication with others, have led to positive results on humans, for example the ability to perform any work, especially in writing the scientific research, and the constant and continuous need to learn, interact with people from other societies.

Because of the big distances, it isn't reasonable for the research scholars and their supervisors meet face to face and discuss the related issues. Henceforth, the web is utilized to generalize knowledge and communicate. The research scholars set up their assignments and send it to their supervisors and professors through email, though, they, (the Professors) thus give guidelines and put into activity the educational materials through the web. Presently, it is conceivable to go to different courses abroad without leaving your nation of origin and at your own comfort. With the assistance of online courses, anybody can get the subsequent degrees or extra certificates. Dissimilar to the past, when records used to be maintained manually and there were numerous instances of lost documents, so the utilization of technology in education has made it feasible for protecting and appropriate record keeping (Budhwar, 2017).

Technology is referred to be what is human-made, which is in this manner unnatural, so it is known as a scheme made by people that utilizes information and association to create items and procedures for the achievement of particular objectives. People utilize technology can do their activity obligations in an efficient way and conquer all the issues and difficulties. Utilizing PCs and different sorts of technologies

in performing the assignments and exercises have delivered a significant commitment in empowering the people to accomplish the ideal destinations. By using current technology, the people can get to data whenever and any place of the world easily (Ballam, 1989).

Nowadays, there have been various changes occurring in the technology of communications, but in the past, people utilized primitive things for communication purposes, however, right now, people can send various documents, pictures, recordings, videos, and other data. Thusly, communication advances help in accomplishing academic objectives (Budhwar, 2017). By using technology, there are a number of different activities and tasks that can be helped out through technology. These are, inserting tables, diagrams, charts, page numbers, running heads, headers and footers, shading, etc. Aside from this, there can be an expansion or reduction in text font size. One can make the composed content italics, bold or underline according to the prerequisite. Thus, people are in need to have sufficient information and data as far as these perspectives to advance imagination.

Actually, the academic research is viewed as a vital piece of the educational process, and it isn't just considered as fundamental in higher educational establishments, yet in pre-schools additionally it is noteworthy. Practically, research is performed in three unique manners; foremostly, is through utilizing books, articles, records and other readable materials, secondly, is using technology and the web, and lastly, is field research. At the point, when the people are utilizing reading subjects, they can upgrade their insight and comprehension. Field research is basically in the research that is done by people in the area. They make visits to different places and gather information and data through overviews, meetings and field notes. By using the web, people can get a proficient comprehension of the ideas and get a number of articles, documents, reports, projects, videos and pictures with respect to different facets. When people use the PCs and the web, at that point they can expand their cognitions and do research in a sensible, helpful and a less time way.

Unfortunately, one of the significant restrictions of online classes is, that people can't get the chances to listen in to class lectures or set up suitable terms and associations with others. They basically need to get access to the web to go through online courses. When people are situated at a distance of different areas or nations, at that point they utilize web in performing online courses. Inside the educational foundations at all levels, web is viewed as the significant apparatus, which encourages the usage, all things considered, and tasks in an efficient way. The web gives various advantages in the association of the educational procedures. Electronic mail (email) is the broad web/technology service utilized by all research scholars. Notwithstanding its plain use for sending and getting messages, email has become the essence of what are numerous other scholarly research related tasks and activities (Wright, 2004).

Obviously, when people are performing a research project or task or assignment, at that point they need data, so the Internet is viewed as one of the best devices that is utilized to get to assets and make arrangement of required data. Through web, people can get to electronic libraries around the globe and other educational administrations. To prepare research projects, documents, assignments, tasks and reports, it is essential to utilize academic articles. Thus, accessibility of academic articles and getting to assets is one of the essential advantages of the web. Through the web, the research scholar can straightforwardly get to course materials to get to assortment of sources all through the world. Through using the web, people can get instant data as far as number of viewpoints, ideas and subjects.

Actually, technology has progressively become an incorporated aspect of our life. It presents the chance to utilize cognitive devices that can be employed by the researchers to tackle perplexing and genuine issues. With the goal for this to happen, in any case, technology should be utilized in hypothetically stable manners (Brown, 2011). The utilization of technology is changing the state of things are carried out, so technology that permits each research to progress at his or her own field in a chose subject may have numerous applications for deep rooted learning and for chose abilities at different levels (Jibrain et al., 2020). Assistance of communication measures is considered to be of the most important use of technology. Desktops, and laptops are utilized to convey through email. While, mobile technologies, for example, cell phones, iPhones are viewed as more effective in upgrading communication. The people can talk with one another, send messages, records, pictures, videos, reports and different documents, etc.

Undoubtedly, technology is an endowment of God, after the gift of life, it is maybe the best of God's blessings. It is the basis of human advancements, of expressions and of sciences. The function of technology in the realm of education has been ever altering. Recently,

technology has been another wonder to help inspire, motivate, and permit researchers to accomplish and dominate in manners that they have never had the option before (Jennifer L. Harris, 2020). At the present time, the web is something that is available almost in all educational things we use (Nagasubramani, 2018). Use of the Internet and related technologies to direct scholarly research can be sorted out into three general classifications: (1) data and information assortment, (2) information, insights, and text investigation, and (3) results of communication. Today, the web is an overall substance, whose nature can't be effectively or essentially characterized. As per many people, the web is an enormous PC network connecting together a large number of smaller PCs at various locations in different nations having a place with a large number of business, government, research, education, and different associations (Jibrain et al., 2017).

Since the beginning of the 21st century, technology is a significant issue in numerous fields, including education, because it is a wide term, which has several practical mechanical improvements started in the World educational scheme. This is on the grounds that technology has become the knowledge move roadway in many nations. At the present time, technology joining has experienced advancements and changed our communities, that have completely changed the manner in which individuals live, think and work (Wan, 2015). It is the specialized methods individuals use to improve their environmental factors, and they utilize it to develop their capacity to accomplish works (Flanagan, 2008). It can be seen in numerous structures, in this way it is an incredible apparatus to improve the universities students' accomplishments, so recently, there has been a significant promotion in the pace of technology commercialization at colleges (Albert N. Link, 2015).

Obviously, technology utilization proceeds with its consistent development among faculty students, both inside and outside of the study hall, its impact on scholastic performances turns into a significant inquiry to address. The ongoing enormous scope, studies by Educause Pew's Research with others, show that practically all faculty students access the web, communicate wirelessly, utilize long range interpersonal communication sites, own PCs and smart phones and utilize the web or email on their smart mobiles. Most research scholars know about electronic versions of SPSS and SAS programs, especially in Education (Wright, 2004). Technology gives more flexibility than conventional educational techniques once one moves beyond minor changes that can be initiated by the professors. Every research scholar, who has looked for sound observational information to decide the impacts of technological guidance on his own academic performance. One of the most utilized techniques for guidance was the utilization of PowerPoint, which influences the research scholars' performances in the academic fields (Davis, 2012).

The regular work of a researcher includes such tasks as composing proposals, creating hypothetical models, planning examinations and gathering data, analyzing information, communicating with partners, studying research writing, looking into associates' work, and composing articles. Strongly, technology has affected every one of the abovementioned activities, and more change will occur in the coming days. Gathering and investigating data with PCs is among the broadest utilizations of technology in research. PC equipment for these tasks, comes in all sizes, running from PCs to microchips committed to particular instrumentation assignments, huge centralized server PCs serving a university field or investigation facility, and supercomputers. PC programming ranges from broadly useful projects that PC numeric capacities or lead statistical investigations for specific uses of all sorts (Ballam, 1989).

Actually, researches can't work without access to partners, instruments, data sources and, once in a while, to distant PCs. Progressively, PCs and communication networks are essential for that entrance. Three technologies are related with interchanges and joint effort: Word Processing, Networks, and Electronic Mail. Word preparing and electronic mail are seemingly the most unavoidable of the apparent multitude of routine utilization of PCs in research performances. Electronic mail—sending text starting from one PC in the next over the network—is supplanting written texts and phone communication among numerous networks of researchers (Ballam, 1989).

Simply, huge, shared projects, for example, oceanographic journeys, utilize electronic mail to sort out and plan tests, facilitate gear arrivals, and handle other strategic details. With the coming of electronic distributing apparatuses that help spread out and coordinate content, illustrations, and pictures, mail frameworks that permit the exchange of complex documents will be fundamental. Networks go in size from small ones that associate utilizers in a specific geographic zone, to public and worldwide networks. Progressively, researchers at various



sites utilize networks for communication with each other through electronic mail and for redone exchange of text and information files (Ballam, 1989).

## Conclusion

Clearly, technology has changed the manner in which research is led by academicians in all orders, since technology gives integral assets to sorting out and analyzing data and demonstrating ideas and basic structures. Research scholars, who have the chance to utilize these apparatuses increase a more profound comprehension of complex themes and ideas and are bound to have the option to recall data later in life and utilize them to tackle issues in non-faculty circumstances (Middleton, 2014). At the present time, the higher education communities are more recognizable contrasted with the ones of only thirty years left is to a great extent because of technological steps. While it is difficult to anticipate absolutely what will happen in a year, five years, or 50 years from now, we can expect that technology will play a noteworthy role in molding the coming days of higher education.

Undoubtedly, throughout history, technology has changed society, in light of the fact that since the most recent couple of many years, cell tools, iPads, PCs, and above all the webs have totally updated the manner in which individuals communicate with the community and the manner in which teachers work in the educational fields. During history, improvements have happened and at last make life simpler for people, so technology permits them to send data rapidly and broadly, connecting inaccessible spots and various zones of attempt in gainful new manners. At the point, when technology is applied to students' carries, a positive result emerges (Kadam, 2016). Absolutely, technology is the future; it is fundamental, that we discover methods to communicate to tackle the issues and difficulties of the present digital students, so the research scholars must keep on finding the best strategies to improve guidance.

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