Use of IT to enhance the Academic Quality and Educational Environment at University Level *"Use of information technology is indeed the need for the hour"*

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ABSTRACT

This paper is revealing the use of IT and its impact in academic domain. The use of IT services have enhanced the complete scenario abruptly and led the way for academic development and growth at any University tremendously. The introduction gives a complete sketch for the need of IT in today's developing condition. Further the paper gives an understanding of the use of IT at various levels in the departments. The use of IT for the enhancement of education and its quality is at the best level and further need to be classified more. There are many system and software that are used and effecting the educational environment at a very strong side. These systems are of prior importance for the students as well as for the entire administration and faculty. Use of advance CMS based systems and mobile apps have enhanced the ease of data availability at finger tips and is somehow very useful for the entire working class at the university level.

Keywords: System, software, CMS, Academic Quality, Educational Environment, IT enabled services.

1. INTRODUCTION

Information technology had become a great part of our life wherever we see. Whether you talk about the field of entertainment, travelling, business, construction, infrastructure management, electronics, engineering, and academics the role of information technology is significant. We are looking forward for all kind of mechanisms that can help us to achieve results within small click of mouse. Whenever we are talking about any field we emphasize mostly on the automation of the information and the management of information on a broader scope. The need for the hour is to access any piece of information which is required in very small time and unlike in the past days we're taking care of the same using computers and networks. The total quality of any particular organization can be increased with the help of information technology. For the same reason many research papers, empirical studies, case studies, and review articles have been published by many people on different domains [1]. It is a very fact that information technology had become a great habit of our day-to-day life and we are helpless without information technology to run results in least time possible. Literature has evolved from time to time and it indicates the direction of researchers in any particular area and for the same reason the role of IT had been an integral part of any research also [2].

This article is mainly targeting academics as the key domain area in which information technology can act on a very high scale in order to achieve good quality of learning and development of students into day by day life. IT acts as an enabling mechanism which results in enriched jobs and increase of the satisfaction level of any organization and its employees. If you talk about academics the raw material of the industry is the students who enters the system on the very first day and the finished product of this industry is a student who graduates or takes the degree from the organization. The complete scenario can be reviewed from various processes that undergoes with the students at the

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education level where they try to learn many things based on the past results and academic methods. However with the use of information technology the students are now in a position to obtain high-quality results and produce better researchers as well as advanced projects that can be done on a remote location also with the help of IT. Not only the students but the members like faculty and administration are also an integral part of academic domain [1]. There can be various tools that are used by the students that are driven by the force called as IT and also faculty members and administrators use the same to obtain results in a very short span of time. That is further try to look on various factors that can be helpful in order to judge the use of IT in academics to improve the quality of the system.

2. LITERATURE REVIEW

"What became very clear from the past experiences was that, IT has fetched results for our students". This statement have been a vital important statement from the point of view of the students who have been using a large section of IT services in their day-to-day life at the University. The similar kind of statement can be acknowledged for the faculty members were making use of various new trends and technologies in the field of academics in order to impart education to the budding students of the University [1]. But if it out exactly what is the backbone of IT that makes this dream come true then we can broadly classified IT into the following points.

A.Computer Science: The use of computer science that started a beginning of an era in which the entire humanity was involved and all the persons found it very easy to solve complex problems with less time and less human efforts. Effective hardware is an amazing software is makes the combination of computer sciences to solve various big problems in the day-to-day human life. In the academics use of computers have increase the level of students studies to a very high level [3]. Unlike the past days where the students have to work with non-computer aided study now they can work up to any limit and up to any extent without any hesitation for resources since all the needed resources are available on their fingertips.

B.Computer Networks: The information which is required by any computer student maybe across any part of the world is now available within fraction of seconds and this information is actually coming from remote areas and locations but are very useful for any particular work. Computer networks make it possible to transfer data from one site to another however large the distance may be. The use of email helps to send relevant information in a fraction of second from one person to another. It also emphasizes the authenticity of the information which is sent in proper hands unlike the old Postal Telegraph system in which papers were used that were very prone to the loss of information or information reaches in correct person. Various topologies such as Star, bus, hybrid etc. are now available to send information with the help of computer Routers and switches that can route the information to any part of the world in very small time that can help the students to communicate with various other universities and students in order to opting good results.

C.System and Software: A very important and vital part is the use of computer software is to achieve some results during the process of learning by the students in universities. Various big corporate industries that develops

software is are targeting the use of their products to be distributed for the students in which they can actually provide helpful utilities that the students can use now for the researchers and overall growth. May it be Microsoft office, web browsers, simulation tools, email programs, data sharing utilities, cloud computing [3], data management, data warehousing, searching, sorting, analysis, project management, or any other tool the students are now equipped with very fast trends that make things very easy for them in academics [4].

D. Wireless Networks: The suggested technology for achieving the above ambitions of the students and the staff members was none other than Wi-Fi (Wireless Fidelity) is licensed by the Wi-Fi Alliance to better understand the use of wireless local area networks (WLAN) which is being given on the IEEE 802.11 wireless specifications.

E.Web Based Domain Applications: The students now find it very easy to get all the information which is required with the help of various websites that works on a client/server model on which scalability can be improved depending on the number of students who will be using the particular website. If you talk about the student portal EDUGATE, or else if you talk about the e-learning platform I-LMS, you can actually mark the difference between the old times and the new days. The use of certain tools like this have actually increased the use of Web domain and improve the quality using IT [2].

F.Desktop Applications: Various desktop enabled applications like email programs, simulation techniques, dictionaries, dictation software, antivirus programs etc. are really useful in order to achieve better results by the students thereby increasing the quality of education with the use of information technology.

G.Mobile Applications: A very recent trend of using the mobile applications have marked a very drastic change in the quality of the system for all the stakeholders whether they are students or faculty members or administrators [5]. A large range and variety of software is can be used by students and the staff members in order to improve the level of working and achieve better results for themselves.

H.Research Based Tools: A wide range of research-based tools are available for purchase or for free utilization on the Internet by various companies that can be really useful in order to yield quick results for any particular problem. These tools are available from various domains and can be really useful to gather information and compile the results within no time [6]. MATLAB the very well-known assimilation to is used by various researchers to solve many mathematical problems. SIMULA a Linux-based tool that can be used for solving high and numerical calculations. NS2 assimilate for wireless and network terminals that can be used to simulate the outing characteristics of various networks. CHEMBIO a Java-based program which is used for designing molecular structures and synthesize new molecules by chemists and pharmaceutics. There can be many software's which can be counted for improving the quality of work that is done by the system analyst and scientists in order to provide the humanity outstanding results. Some examples are: LISERI, ANOVA, SDLC, KMQ, M9000, QFD, QMIT, RATIONAL ROSE, EDI, CAD, JIT, SPC, FEMA, QFCD, AMOS, SECI, MACS

I. Content Management Systems: There can be many systems that can work for a very small level of clients and database, but there is a sudden change in the market where a large variety of tools being used under the broad category of content management systems [7]. These systems are capable of controlling very huge and bulky amount of users and their data respectively into one machine. Thus VMS units have their own formats and the users are free to use and change the formats as per their desire. Many content management system units are used across the globe nowadays in order to save time and use the concept of object orientation for managing large volumes of data. The use of data mining and data warehousing are implemented accordingly along with the content management systems so that data can be extracted at any piece of time after a wide range of years that have passed successively from the date of deployment of the project [7].

3. METHOD

The various factors that are comfortable whenever we talk about quality management at any organization level can be broadly classified under the headings of [8]:

1. Total employee involvements
2. Continuous improvement
3. Continuous training
4. Teamwork
5. Empowerment
6. Top management commitment and supports
7. Culture change
8. Democratic management system
9. Customer satisfaction

4. RESULTS AND DISCUSSION

The use of information technology can be very helpful in order to improve the quality of the system of academics if we consider students and faculty members both. The members of the staff are continuously working on various problems as a part of the research and the use of IT helps them together various statistics that is required for the research work in order to provide the next and upcoming research. Unlike the old-time in the research level was not very high due to the failure of sharing of information, use of IT had made it possible to conclude any solution and compare with the global boundaries and publish it on various well-known journals and conferences [9]. The staff members can now read the old existing problem solutions and can propose or prove new solutions with the help of information technology that can increase the quality of research at the academia. The use of all the above makes it possible for the students to get information as desired by them. A recent improvement for the students can be marked by the use of virtual classrooms and virtual tutors who can teach the students in a very scientific and systematic manner [10]. The conduction of online exams can be yet another approach in improving the quality of education that requires less paperwork and is more helpful for better examination of the student in order to provide

a proper feedback and a generic approach. The use of information technology is considerably increasing across the University campus in all dimensions. There can be a significant change in the upcoming next five years as far as information technology is considered. The quality of the education and academic era can be in prove significantly with the help of information technology depending on the following points:

5. FUTURE ENHANCEMENTS FOR IT BASED SYSTEM

The use of IT and computers can help to increase the level of the education. It can be of great help to improve the quality of working at the University and other Academy institutions. There can be many approaches which can be implemented with the help of information technology in order to raise the standard of working in the University. Some of the approaches across the system of University can be:

1. Use of virtual classrooms to deliver guest sessions at various remote sites.

2. Use of digital libraries in order to access various researches published across the globe by the students and researchers of the University.

3. Use of software's that can be helpful in order to provide open results.

4. Development of quality software's by the students.

5. Software consultancy and research projects to be given to big organizations.

6. Enhancement of use of information technology driven software's like CMS systems.

7. Attendance management systems like RFID.

8. Use of e-learning for conduction of examination and management of records and grades of the students.

9. Beginning of a journal of the University to publish researches.

10. Better use of hardware-oriented projects and embedded system design by the students.

6. CONCLUSION

All the points that are stated above are giving a brief idea about what information technology is and how it can be used in the domain of academics and education justify the quality improvement for the students and the staff members. Various levels are identified and the use of IT is reflected on these levels that proves the significant increase in the quality of working and increasing the level of education to a very high scope. The various dimensions that are required to achieve quality amongst the use of information technology are stated in one of the sections and best emphasis is paid in order to achieve all those parameters. Yet another section reveals the use of information technology having its advantages. It can be awarded that IT is definitely going to be of great help and importance in order to increase the quality and level of working at an educational organization. The case study of any University is taken into consideration in which the use of IT at various levels is identified and it can be worded from the above facts that at the University site the use of IT had increased the level of quality and have suggested a drastic change in the improvement from the past few years. The quality management can be further increased by the suggested changes at the University. These changes are subjected to be implemented in the upcoming few years to

provide a total quality management increase. A suggested list of approaches is also attached choice to make use of IT further more in order to achieve academic excellence.

REFERENCES

[1] Hokanson, B. and S. Hooper, Integrating Technology in Classrooms: We have met the enemy and he is us: Past, present, and future, in Instructional Technology: Past, present, and future. 2010, Libraries Unlimited.

[2] Grant, E.S. and W.I. Helps, Enhancing Teaching & Learning of Software Engineering in an International Environment. GSTF Journal on Computing (JoC), 2018. 2(1).

[3] Mohammad, A.F. and E.S. Grant. Cloud Computing, SaaS, and SOA 3.0: A New Frontier. in Cloud Computing and Virtualization 2010 International Conference, Singapore May. 2010.

[4] Grant, E.S. and W.I.J.G.J.o.C. Helps, Enhancing Teaching & Learning of Software Engineering in an International Environment. 2018. 2(1).

[5] Page, T.J.I.J.o.M.L. and Organisation, Application-based mobile devices in design education. 2014. 8(2): p. 96-111.

[6] van den Akker, J., et al., Design approaches and tools in education and training. 2012: Springer Science & Business Media.

[7] Kim, K., et al., The impact of CMS quality on the outcomes of e-learning systems in higher education: an empirical study. 2012. 10(4): p. 575-587.

[8] Sallis, E., Total quality management in education. 2014: Routledge.

[9] Devlin, M.J.J.o.H.E.P. and Management, Policy, preparation, and prevention: Proactive minimization of student plagiarism. 2006. 28(1): p. 45-58.

[10] Volery, T. and D.J.I.j.o.e.m. Lord, Critical success factors in online education. 2000. 14(5): p. 216-223.