INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

Impact Factor: 8.165

An Analysis of New Cloud Computing Paradigms in the Context of Systematic Educational Reform

[1#]Miss. Maithili M. Desai [2#]Miss. Harshita V. Dudani, [3#]Dr. Bhaskar V. Patil[4#], Dr. Deepali M. Gala

[1# 2#]Student, Bharati Vidyapeeth (Deemed to be University), Institute of Management, Kolhapur, India

[3#, 4#]Assistant Professor, Bharati Vidyapeeth (Deemed to be University), Institute of Management, Kolhapur, India

ABSTRACT: Institutions of higher learning are always looking for ways to manage their resources more efficiently. Education plays a significant role in a country's economy, and today the educational model in many countries has evolved with technology. Cloud computing is an emerging computing paradigm that promises to provide opportunities to deliver a diversity of computing services in a way that has never been experienced before.Worldwide, schools and colleges employ cloud-based technology widely.

Many educational institutions are currently having trouble keeping up with the demand for infrastructure and IT. By providing the necessary infrastructure, software, and storage, cloud computing, an emerging technology that depends on existing technologies like the Internet, virtualization, grid computing, etc., can be a solution to these issues.To demonstrate how cloud computing may be used in education to enhance teaching, agility, and have a cost-effective infrastructure that can bring about a revolution in the field of education, basic research was conducted for this paper.

KEYWORDS: Cloud computing,E-learning, technology, higher education, infrastructure

I. INTRODUCTION

Companies or institutions, including educational institutions in open-technology countries, have moved to make their applications available via the Internet using this technology, which has benefited many large-scale beneficiaries, including universities, by developing modern technologies accessible through the web and accelerating the flow of information through. The primary objective of constructing an educational site and center is to serve the community of beneficiary students who are enrolled in classes by addressing and meeting their curricular demands.

Because the services' qualities have expanded to include electronic cloud services for all operations, activities, and facilities to provide all requirements for the students' academic community, the success and effectiveness of the educational website are primarily related to the quality of electronic cloud services. The delivery of the courses and curricula with the least amount of work and expense is the overarching objective. The computer systems in developing nations, including those in our communities, have a lot of issues.

Cloud computing resources, which include hardware, software, storage services, data services, and firewall services, are made available to clients or groups of clients as virtual services over the internet. Cloud computing architectures can be deployed utilizing public, private, or hybrid models. The cloud offers important advantages including on-demand service, scalability, elasticity, etc.

1.1) Cloud Computing:

A significant and cutting-edge concept in the field of information technology is cloud computing. It is a sort of computing that uses virtualized resources that are extremely scalable and accessible to all users. It has been described in various ways by academics, IT companies, and analyst firms. A large pool of easily available, shared virtual resources is referred to as a "cloud," and they can be dynamically altered to allow for maximum resource use.
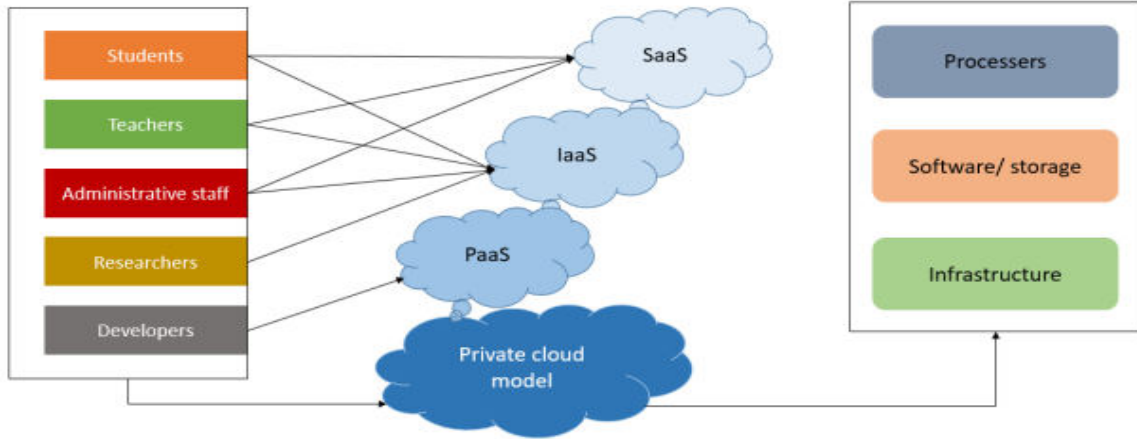
1.2) Model for cloud services:

Fig1. Cloud Computing Service Models

I) Software as a service (SaaS): Software as a service (SaaS) enables cloud platform applications to be used to access software online through the Internet. E.g., Netflix, Google Apps, and Office 365.

II) Platform as a service (PaaS): Platform as a service (PaaS) offers capabilities for managing applications and hosting development sets. Software programmes can be launched, managed, deployed, and coded. E.g., Microsoft Azure and Google App Engine.

III)Infrastructure as a service (IaaS): The most effective and fundamental cloud computing service type, Infrastructure as a Service (IaaS), offers both physical and virtual resources. E.g., Web Services by Amazon (AWS).

I.   Cloud computing in the education sector

There are various issues with the old educational system, such as a lack of teachers, lab space, modern textbooks, infrastructure, etc. Most private educational institutions now rely heavily on information technology to meet their needs. More and more often, professors and students can access these services through web browsers and Internet technology. The services are provided for free or at a far lower cost to education, frequently with a considerably higher availability than the educational institution can supply.

The platform and technology integration process can be supported by the cloud computing environment. In order to meet the demands of teaching and learning, it connects resources for research and teaching that are dispersed across several places. The development of the education sector, the second largest in the world, is essential for boosting the economy and raising the standard of living. Wide-area networks, which are typically used as a platform for sharing remote computing resources, are referred to as the "cloud." The cloud offers scalability, lower prices, and less complexity. Cost savings and increased productivity are the greatest benefits of the cloud. An organisation can rely on the "pay-as-you-go" feature of the two SaaS and PaaS cloud pillars. Efficiency is improved by ease of maintenance because the burden of software maintenance has been transferred to the cloud service provider. The cloud service provider is accountable for any technical faults with online portals for distant learning programmes and online exams.

The cloud platform can help teachers prepare their teaching portfolios, presentations on teaching to local audiences, conference presentations on teaching to local audiences, conference presentations, manuscripts that will be submitted for publication, and other tasks. For the purposes of critical review and evaluation, it may also include self-reported portfolios that highlight a teacher's key teaching accomplishments and strengths in the form of brief summaries of activities and achievements (e.g., what and how they teach - types of instructional methods, materials, and techniques, reasons they teach that way, and whether or not it works with empirical data). comments from students, peer evaluation of related scholarly efforts based on instructional observation, and peer feedback.
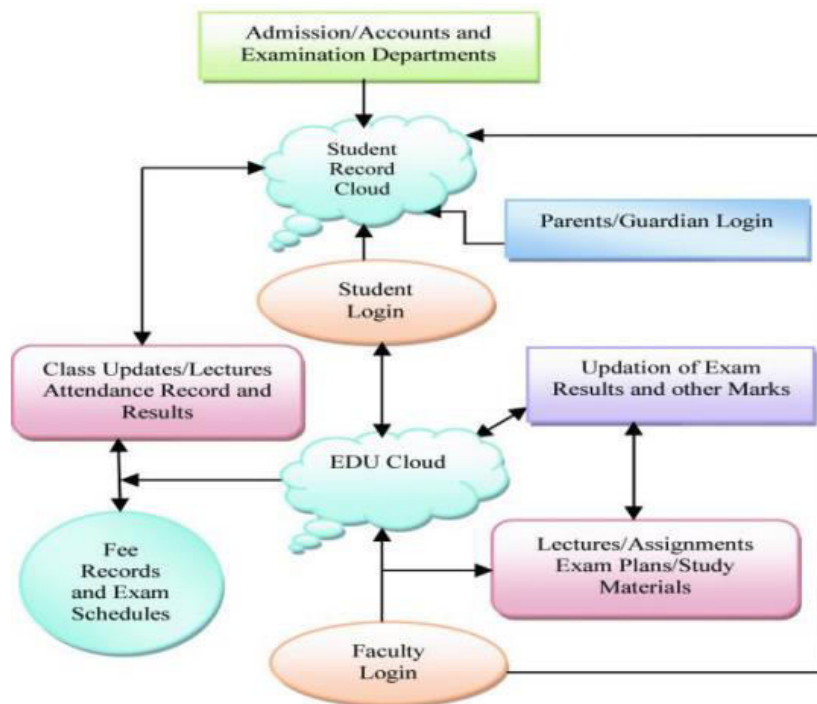
Fig2: Model of the Education System Using Cloud Computing

II. Cloud Education System benefits

The following advantages of cloud computing in education include:

1) Personalized Learning: Students who use cloud education systems have access to a variety of resources, may share those resources with others, and can access data from any location at any time. They can also sign up for online classes and take part in group projects.
2) Cost-effectiveness: There is no need to physically purchase gear and software. At a lower cost, it offers a virtual environment.
3) Service Availability: Users can access their cloud-stored data from anywhere at any time.
4) Low Maintenance: Because of virtual infrastructure, the expense of maintenance is almost non-existent.
5) Storage Capacity: In comparison to other storage devices, it can store a lot of data for any cloud user.
6) Security: Only authorised users can access stored data thanks to the confidentiality, data integrity, and privacy features of the cloud system.
7) Performance: By sharing infrastructure, cloud computing enables users to modify system setup, boosting system speed and performance.
8) User-friendly and environmentally friendly: Cloud services are incredibly simple to use, there is no need to worry about complexity, and they unquestionably minimise carbon footprints.

II. CONCLUSION

An emerging paradigm in computing called cloud computing offers the potential to deliver a range of computer services in a way that has never been seen before. It is crucial for a learning organisation that promotes education. To use the cloud formations best suited to its IT activities given its budgetary constraints and sustainability issues. In this research, several advantages of the move to cloud computing were highlighted.The paper's major goal was to outline the fundamentals of cloud computing, which may be seen as a fresh beginning for higher education and has the ability to bring about a "revolution" in the subject of education.

III. ACKNOWLEDGMENTS

REFERENCES

[1] Impact of Cloud Computing on Education System Mr. Amol Kale1 , Dr. Rajivkumar Mente2 1,2 School of Computational Sciences, Solapur University, Solapur, Maharashtra.

[2] Adoption of Cloud Computing In Education and Learning K.Srinivasa Rao1 , Ratna Kumari Challa2 Assistant professor, Dept. of MCA, Yogi Vemana University, Kadapa, Ap, India1

[3] Cloud Computing and its Impact on Online Education To cite this article: Duha Khalid Abdul-Rahman Al-Malah et al 2021 IOP Conf. Ser.: Mater. Sci. Eng. 1094 012024

[4] Cloud Computing Platform for Education System: A Review Yogita Borse Assistant Professor Department of Information Technology K J Somaiya College of Engineering Mumbai, Maharashtra, India Sheetal Gokhale PG Student Department of Information Technology K J Somaiya College of Engineering Mumbai, Maharashtra, India

[5] The Impact of Cloud Computing on e-Learning during COVID-19 Pandemic NavishSamyan, Pierre Olivier St Flourt of Cloud Computing on Educational Institutions: A Case Study Thamer Al-RousanIsra University, Jordan

[6] International Journal of Computer Theory and Engineering, Vol. 4, No. 3, June 2012 Implementation of Cloud Computing in Education - A Revolution Saju Mathew.

INTERNATIONAL JOURNAL
OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING