An Effective Mechanisms of Cloud Computing In Education Sector

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ABSTRACT:

   Education is highly important in today's society. It helps to motivate the minds and shape it into intellectuals. Many Academic Institutes are exploring new technologies for effective teaching and learning methodology. One of the emerging technologies cloud computing can be very useful in teaching learning process. As cloud provides a variety of services, an institute can offer quality education by providing latest infrastructures in terms of hardware and software. This presentation focuses on basic introduction of cloud computing and how cloud computing can be introduced in the education to improve teaching.

I.   INTRODUCTION:

During the last two decades the evolution of distributed computing has changed the working of scientific and commercial applications. This progress has evolved several newer applications. The latest evolution of distributed computing is cloud computing.

In simple form cloud computing means storing and accessing data and programs over the Internet instead of computer's hard drive. In other words cloud computing provides shared resources, software and information through internet as a PAYGO (Pay-as-you-go) basis.

Cloud computing can be a welcomed optioned in the universities and educational institutes for studies. It gives a better choice and flexibility to the IT departments by building multipurpose computational infrastructure once and then uses it for several purposes for several times.

Teaching is now not just restricted to classroom with students. Today education is heavily more

extra financial burden on institute. Continuous upgrading hardware and software is difficult and also it leads high cost to maintain them. Cloud computing provides the solution for this problem. With the help of cloud computing the user the platform and application on-campus or off-campus or combination of both depending on the institutions need. It offers services at the least cost to users like students, staff who can aquire it anywhere any time.

II.   CLOUD COMPUTING:

NIST defines cloud computing as:

"a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (eg: networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction".

Cloud computing is Internet-based computing in which shared resources, software and information are delivered as a service that computers or mobile devices can access on demand. Cloud computing is already used extensively in education. Free or low cost cloud-based services are used daily by learners and educators to support learning, social interaction, content creation, publishing and collaboration.

Some major examples of cloud computing services includes Google Drive, Amazon Cloud Drive, Apple i cloud, Microsoft's Sky Drive.

III.   SERVICES OF CLOUD:

To use the cloud services the universities and the institution has to first define their requirements and has to take a special attention for the privacy and critical issues.

There are several cloud services as follows;

- **Infrastructure as a service (Iaas):** can be used to satisfy the infrastructure needs of the students, faculties or resources globally or locally with some specific hardware configuration for a specific task.
- **Platform as a service (Paas):** with Paas, students teachers or other academicians can develop new applications or services in the cloud which is platform independent, and also make them widely available to users through the Internet.
- **Software as a service (Saas):** works so much better for students because it provides access to applications anytime, anywhere for any type of devices like laptop, smart phone, tablet, or other wed-enabled device. Adding more users or scaling the software to more classroom or campuses is becomes very easy task with Saas.

IV.   CURRENT SCENARIO OF EDUCATION:

Education system is always based on the marks, grades and figures. But in real life the practical knowledge, reflective thinking and some practice is required to remain in competition.

Most of the private educational institutions have become highly dependent on information technology to service their requirements. These services are increasingly provided using Internet technologies to faculty and students and accessed from web browsers. The services are offered cheaply or freely to education, often with much higher availability that can be provided by the educational institution.

Another factor is that Institutes are heavily depend upon content management system according to that institute can also hire a service to store the content on the cloud and any student or staff or any academia's can use that from anywhere and anytime and on any device.

V.   IMPLEMENTATION OF CLOUD COMPUTING IN EDUCATION SECTOR :
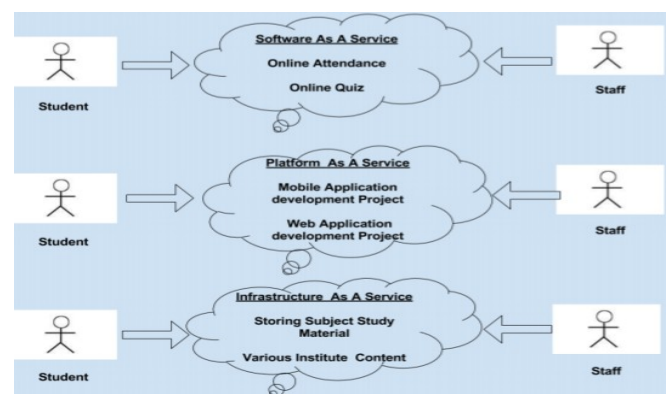
VI. BENEFITS OF CLOUD COMPUTING FOR INSTITUTIONS AND STUDENTS:

With the development of educational cloud, new web applications such as Lecture tools, Slide share etc., allows the lecturer to get their web browsers rather storing and carrying it on the hard drive.

Its gives the benefits such as;

- Access the files from anywhere.
- Share content more easily.
- Software free or PAYGO.
- Reduced the cost to update infrastructure.
- 24*7 access to infrastructure and content.

Cloud computing has the potential for improving the efficiency, cost and convenience for the universities and educational sectors, but it has few limitations such as

- Not all application run on cloud.
- Organizational support.
- Speed and lack of Internet can affect work methods.

VII CLOUD COMPUTING ALTERS EDUCATION SECTOR

1. No more expensive textbooks. It's no secret that university-level textbooks are expensive. The cost of textbooks has outpaced the cost of virtually everything else in education, including tuition. As a result, many students are simply refusing to buy them. Cloud-based textbooks can solve this problem as digital content is significantly less expensive than printed content. This levels the playing field so that lower-income students can have the same access to quality learning materials as their higher-income counterparts. Currently, higher education institutions across the United States are piloting an e-textbook program involving 50 publishers and close to 30,000 textbooks.

2. No more outdated learning materials. In the K-12 arena, the problem of expensive textbooks means that many of the materials students are using are outdated. The average social studies book in elementary and junior high schools is seven to eleven years old, which means that the world maps in these books are no longer correct. With cutbacks in school budgets, many districts, especially in less affluent areas, simply can't afford to replace these outdated resources. Cloud-based materials are easy to update in real time so that students always have access to the most current learning resources.

3. No expensive hardware required. Cloud-based applications can be run on Internet browsers, but most are compatible with mobile devices as well. This means that schools and students do not necessarily need to own expensive computers—a $50 smartphone can access these applications just as well as a $500 laptop. Students also don't need to purchase external storage devices as there are plenty of companies, like Google, that offer free cloud-based storage.

4. No expensive software required. One of the biggest advantages of cloud-based computing is the software-as-a-service (SaaS) model. Many software programs are now available either free or on a low-cost subscription basis, which substantially lowers the cost of essential applications for students. For example, instead of purchasing a single Microsoft Office student license for $140, students and their families can purchase a cloud-based subscription for five computers and five mobile devices for only $10 per month. Even better, they can use Google Docs for free. Institutions can also save big by using SaaS applications—traditional learning management systems can cost upwards of $50,000 or more, but cloud-based learning management systems like **ProProfs**' Training

Maker are available starting at $60 a month with no per-user fee.

5. Reaching more, and more diverse, students. Cloud computing opens up a world of new **possibilities for students**, especially those who are not served well by traditional education systems. For example, until education moved online, the options for adult students who didn't finish high school were very limited—now these students can earn their diploma or GED online. There are many other types of students for whom a traditional school environment simply doesn't work, and these students now have many options for pursuing alternative forms of education.

VIII CONCLUSION:

Cloud computing is an arising technology in the coming years which provides range of advantages to students, staff and academicians. The Cloud allow, us to access our work anywhere, anytime and share it with anyone. Despite of these limitations cloud computing offers reliable services to student and staff so that teaching learning methodology become effective and qualitative.

In this presentation, cloud education system is introduced and how it is beneficial for students, faculty and the educational institutes for providing quality education.

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