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## CLOUD COMPUTING- ONLINE LEARNING PLATFORM

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### Introduction

Internet has grown aggressively in terms of numbers of networks connected to it. The number of Internet users worldwide has increased since the birth of the World Wide Web. Internet evolution has affected all industrial and educational activity and accelerated e-learning growth. Due to cost, time, and flexibility e-learning has been adopted by learners as an alternative training method. The introduction of cloud computing to e-learning platforms has brought a powerful learning mechanism. Cloud computing has brought about new changes and opportunities in the field of education & IT industry. The rising numbers of educational institutes every day are creating a gap between the educational institutes & the industrial requirements which has become critical for the working system, the technological enhancement of cloud computing might be able to fill up the gap by providing free or paid training to the user using systems that do not require any additional cost. The Internet nowadays is accessible from maximum telecommunication devices like desktops, laptops, tablets, mobiles, I-Pad, etc

### Cloud Computing

Cloud computing is a model for enabling shared pool of computing resources that can be rapidly provisioned & released with service provider interaction. With cloud computing the software programs we use are not run from our personal computer but are stored on a collection of servers accessed over the internet using network protocols. The basic term in cloud computing is cloud, it is a large group of interconnected computers, these computers are personal computers, large servers etc. The application provided by cloud are available to large group of users, organisations and these applications accessed through the internet. One of the main uses of cloud computing is storage of data. With cloud storage data is stored on multiple third-party servers. When storing data, the user sees a virtual server. It appears as if the data is stored in a particular place with specific name, but that space does not exist in reality. But in fact, the user's original data could be stored on any one or more computers used to create space. and the actual storage may change from minute to minute as the cloud dynamically manage the available storage space. Cloud computing is a method of computing where a shared group of resources such as file storage, web servers, data processing services, and applications. Examples of cloud computing services include Amazon Web Services, Microsoft Azure, Google Cloud Platform, etc. Compared to other platforms cloud in the field of education offers strong virtual classroom environments, ease of accessibility, secure data storage, greater reach for the students.

## E-learning

E-Learning means learning conducted using electronic devices or electronic media, typically on the internet. It refers to the use of information technology to enable the access to online learning resources. Nowadays the pattern of education extremely changing from conventional learning to e-learning. The e-learning models are being adopted by several educational institutions due to ease of learning. With the rapid growth in technology and the advancement in learning system, it is now accepted by the masses.

E-learning falls into two categories:

- **Asynchronous**

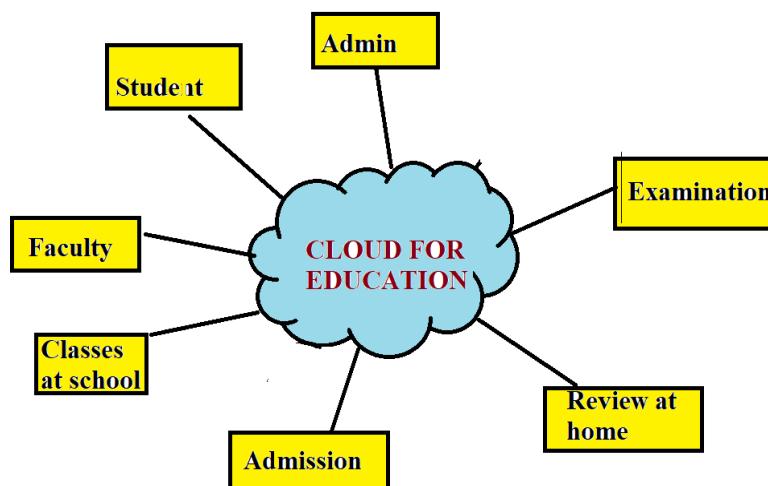
In asynchronous e-learning, the learners are taking the course on their own device, usually on a laptop. This program may include pre-recorded lecture content, video, visuals, text, games, other interactive elements

- **Synchronous.**

In synchronous e-learning (referred as online training or online learning), uses a web-conferencing or virtual class room platform that offers features such as slide sharing or screen sharing, as well as the interaction tools such as chat, polling and annotation.

## Cloud Computing in Education Industry

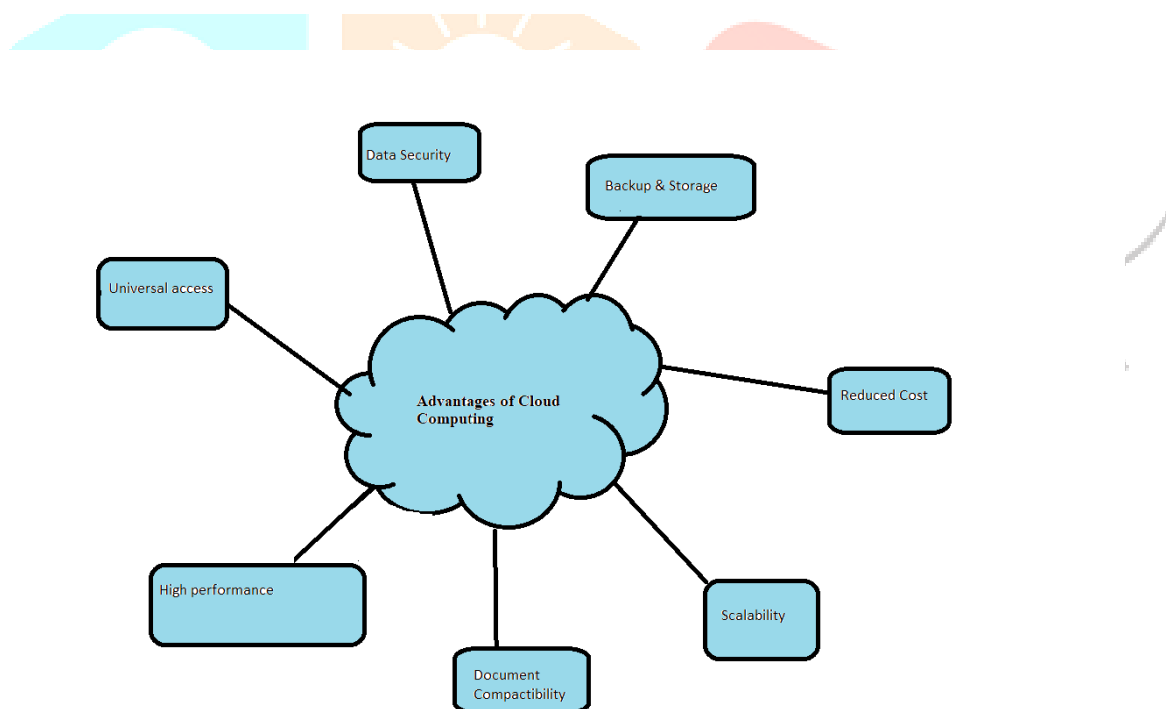
All educational institutions use the cloud computing to deliver better services with limited resources. By implementing cloud computing in educational institutions, it opens up a universe of new conceivable outcomes for students. In the cloud computing infrastructure, the sharable e-learning platform can be proposed to provide a good learning environment for students. By using cloud computing educational institutions such as schools, colleges, universities need not buy, own, and maintain their own servers.



Educational Institutions are Adopting the Services of Cloud Computing because of the following reasons:

1. **Universal Access of documents:** Students can access the study materials remotely from anywhere. This facilitates independent learning and makes it easier for distance learners to participate fully in the course.
2. **Increased data security.** The cloud is a very secure option for securing data, including learning materials other data.

3. **Data backup & Storage capacity.** The cloud securely backs up data in real time. That means that even if an individual educator's PC breaks down the course materials will not be lost from cloud.
4. **Support for a wide variety of learning styles.** Cloud platforms can support video, audio, interactive quizzes, student discussion forums etc. You can turn your cloud-based eLearning platform into a highly engaging, multimodal learning site.
5. **Can be customised to your needs.** Educators can develop their cloud-based eLearning platforms to suit the needs of the module, and the students, that they are teaching. Cloud based Learning Management Systems are thus very flexible tools that can become whatever you want them to be. Building digital learning environments is easy with the cloud.
6. **Reduced Infrastructure cost.** There is no need to invest in large number of system and associated components, so reduces hardware and software maintenance cost for organizations. And also, many basic cloud-based eLearning platforms are actually totally free to use.
7. **Scalability:** One of the major reasons for using cloud computing is its scalability. Cloud computing allows universities, colleges and IT industries can be handled with scalability of respective resource without much effort, time and cost.
8. **No time limit:** This allows for on-demand analysis of study material instantly.
9. **High Performance:** For using the cloud computing the performance should be enhanced. Computers in a cloud computing system will boot up faster and run faster because they will have fewer programs and processes loaded into memory.
10. **Improved document format compatibility:** There are no format incompatibilities when everyone is sharing apps & documents in the cloud. The document you create on your machine being compactable with other users' applications or operating systems.



### Education Applications Offered by the Cloud

Some of the educational applications offered by cloud are:

1. **Google Apps for Education:** Google Apps for Education is the most commonly used platform for web-based email, calendar, documents, etc.

2. **Chromebooks for Education:** It is one of the most important Google's projects. It is designed for the purpose that it enhances education innovation.

3. Tablets with Google Play for Education: It allows educators to quickly implement the latest technology solutions into the classroom and make it available to their students.

4.AWS in Education: AWS cloud provides an education-friendly environment to universities, community colleges, and schools.

## Conclusion

During COVID 19 Pandemic, higher education institutions were replaced traditional learning with online education. The main benefit of using cloud computing in online learning is the convenience of students and educators. Cloud computing is becoming a flexible technology for many of the organizations with its dynamic scalability and usage of virtualized resources as a service through the internet, it can be utilized under circumstances where the availability of resources is limited. Students and educators have the opportunity to quickly and economically access various application platforms and resources.

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