

CLOUD: A New Way to e-learning

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Abstract - The web is huge, diverse, and dynamic and widely distributed global information service center. We are familiar with the terms like e-commerce, e-governance, e-market, e-finance, e-learning e-banking etc. The rapid internet growth has made both business community and customers to face a new situation. Due to intense competition in every field, e-learning plays a very important role towards the remote areas to provide the education to all. Several options for education are available, to choose from several alternatives, for providing the education to the students. Cloud plays an important role through which education is to be provided to everyone anywhere. This paper presents the important concepts of cloud computing utilized in e-learning.

Index Terms -- e-learning, cloud computing, Data Centers, Mobile learning.

1 INTRODUCTION

We are living in the globalization era where connectivity of complete world together available in an electronic devices (from big gadget to small hand-held). As learning plays an important role in our lives so, the e-learning concept have connected the whole world and also remove the barriers of age, place, time and physical boundaries of class room. The technological revolution has created a new dimension in whole education scenario. Distant learners from far flung, remote areas are using internet on portable devices as a best way of communication and their education. Tom Kelly quoted that "E-learning is about information, communication, education and learning" [1]. It is a platform with flexible learning using Information Technology and Communication resources, tools and applications, and highlighted on interactions among teachers, learners and online environment. E-Learning is becoming popular as it refers to the managed and systematic structured way of learning, it involves the use of internet, video lectures, video conferencing, software and other telecommunication media for making the e-learning more flexible and beneficial to the end users. Since it provides the right information in right time and in right place, students are now more familiar and feel more comfort with this new education system. A research on learning outcomes in distance education versus face-to-face instructional setting has got a long history, reaching back to the 1920s [2].

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The findings of thousands of studies, over the decades and through the 1990s have been consistent - there are no significant differences in learning outcomes achieved by students engaged in face-to-face instruction compared to those participating in distance education.

Earlier studies of distance learning concluded that these technologies were not significantly different from regular classroom learning in terms of effectiveness. Educators have reasoned that if online instruction is no worse than traditional instruction in terms of student outcomes, then online education initiatives must be justified on the basis of cost efficiency or need to provide access to learners in settings where face-to-face instruction is not feasible. Moreover, with the advances in Web-based and collaborative technologies which are a much better from earlier distance education applications, —Policy-makers and practitioners want to know about the effectiveness of interactive online learning approaches and need information about the conditions under which online learning is effective.

2 PRIMARY BENEFITS OF E-LEARNING

- Increased quality and value of learning achieved through greater student access
- Combination of appropriate supporting content, learner collaboration and interaction, and on-line support
- Increased reach and flexibility enabling learners to engage in the learning process anytime, anyplace and on a just-in-time basis
- Decreased cost of learning delivery, travel, subsistence costs and time away from the job

- Increased ability to respond to evolving business requirements with rapid roll-out of new and organizational-specific learning to a distributed audience

3 PROSPECTS OF E-LEARNING THROUGH CLOUD

- Learners can access information that is correct and up to date through the web
- Learners are able to meet in a virtual space with other members and practitioner experts to discuss issues,
- Answer questions and even participate in simulations and management games without having to leave their office or home.
- Learners benefit from learning when required,
- Learners are able to access the right sort of training at the right time with the right people.
- Learners have access when they want it.
- Learners have access to the same materials.
- Learners regardless of their places can receive the same message and are able to engage other learners and practitioners globally.

4 CLOUD COMPUTING

Clouds that provide on-demand computing instances can use instances to supply software as services (SaaS) or to provide a platform as a service (PaaS), such as Amazon’s does with its EC2 product [3]. Cloud computing is a recent trending in IT that moves computing and data away from desktop and portable PCs into large data centers. It refers to applications delivered as services over the Internet as well as to the actual cloud infrastructure – namely, the hardware and systems software in data centers that provide these services. The key driving forces behind cloud computing is the ubiquity of broad-band and wireless networking, falling storage costs, and progressive improvements in Internet computing software. Cloud computing is changing the way Information Technology (IT) resources are utilized and consumed now a days. Enterprises and Service Providers want the ability to access IT infrastructure with flexibility and on-demand basis Although the NIST [3] definition of cloud computing is general, five key characteristics include:

On-demand: Cloud Computing and IT resources can be provisioned immediately when needed, released when no longer required, and billed only when used, without requiring human intervention.

Broad Network Access: The IT resources and its capabilities can be accessed through a standard network, with a client platform as the endpoint.

Resource Pooling: This implies a Multi-Tenant environment where the resources are provided to many customers from a single implementation, utilizing physical and virtual assets.

Rapid Elasticity: This implies the service provides the illusion of infinite resource availability in order to meet whatever demands are made of it.

Measured Service: This implies Cloud systems have metering capability at some level of abstraction appropriate to the type of service. Resource utilization can be monitored, controlled and reported providing transparency for both the provider and consumer of the utilized service.

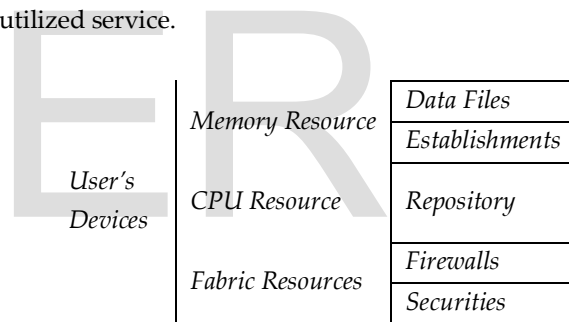


Figure 1: Cloud Model and its Integrated Resources.

This model is for where the data is to be distributed, so that knowledge resources will be used by all sorts of user in the education streams. The applications are developed which will mainly concentrate on the invalid usage of cloud and the data has to be managed and send to the user based on the various data centers available so that the model will check for the registration and valid clients to login into the system and use the application and also the security is maintained in this model so that the data are safeguarded. This model will be used to access the data and share the knowledge. [4] A mobile learning system [5] which is implemented for education using cloud computing. The main objective of Mobile-Learning is that the students get the knowledge from the common

shared resource point at any time and at free of cost. Mobile-learning [5] is a system where one can learn through any source on topics of his choice without the need of storing anything. You can use the service as-you-pay from the cloud data centers for learning specific topics over hand-held devices (like Mobile Phones) even if student is in a small village or remote area.

5 RESULT AND DISCUSSIONS

For the purpose of sample collection for E-Learning through clouds we have considered Uttar Pradesh, a large state of India. The cities considered for data collection is listed in Table 1. The mean E-Learning providers who validly responded to survey is approximately 12 per city, and the median is 10, ranging from 07 (DA) to 20 (MU). In the smaller cities (BJ, BT, KH, DA) the survey covered the majority of the existing E-Learning providers, while in bigger cities (MT, GZ, HP, MZ, RO, MU) a more modest proportion of providers responded. The percentage of providers is shown in Figure 2.

TABLE 1
 E-LEARNING PROVIDERS

City Name	Abbreviation	Providers' Count
Meerut	MT	16
Ghaziabad	GZ	17
Bijnor	BJ	08
Bagpat	BT	09
Hapur	HP	10
Muzaffarnagar	MZ	21
Roorkee	RO	13
Khautali	KH	06
Daurala	DA	04
Muradnagar	MU	20

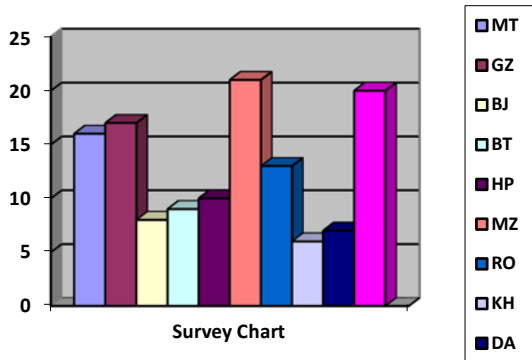


Figure 2: e-learning survey sample of selected city

Providers have selected E-Learners to take part in the survey. The learners are divided into groups to provide information on their socio-economic characteristics which made it possible to compare them as well as portray the structure of each sample. The results obtained from groups are compared in terms of gender, age and education. The result is analyzed in terms of current use of material, satisfaction from E-Learning and expectation from the E-Learning.

E-Learning Satisfaction: Considering the benefits experienced by learners, one in five E-Learners stated that they learned all they needed, while one in two reported that they learned enough. Overall, over 50% of the E-Learners stated that their needs were satisfied more or less. This however reflects partly the extent to which they use what they learned: less than 44% use it a lot, and less than 35% use it a little. The satisfaction graph is shown in Figure 3.

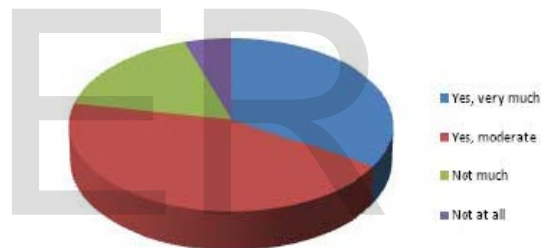


Figure 3: E-Learning Satisfaction

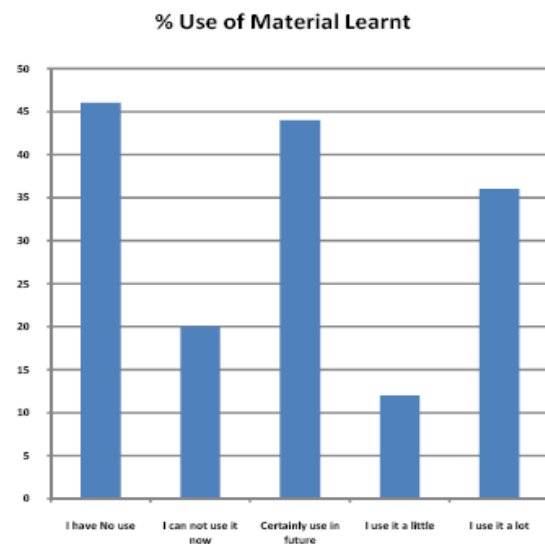


Figure 4: Use of e-learning material

Material Utilized: The benefits reported by E-Learner groups reflect that E-Learners are rather pessimistic regarding the benefits from the course they attended: 42% do not expect any benefits, 23% of the learner group members reported absence of real benefits. A personal interest accounts for the main benefit reported by the E-Learners (44%) (see Figure 4). A relatively important benefit is also to continue (secure) present job, which is reported by one in four E-Learners.

6 CONCLUSIONS

The Complete Education System is about to change with the already initiation of the e-learning system. As cloud Computing is used, as the need which works on the phenomenon pay as much as you use, will have a revolution, which will help the people from the community who are not able to afford a big amount for the education system. Even the persons from the far flung areas are able to learn the concepts and knowledge on their mobile hand-held devices. Many models are already started for the same and many more

are developing for the help to every person related to education system.

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