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HARNESSING CLOUD COMPUTING IN EDUCATION

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ABSTRACT

Cloud computing has been one of the hottest trends today. Basically, in the world of business, cloud computing has been seen as something that is highly beneficial. After all, modern day businesses will not be able to compete and they will not be able to keep up with the dynamism of the world if they do not make use of the latest in digital and internet technology which includes cloud computing. Is there a need to modernize education? Of course, there is! Schools are, whether we like it or not, the second home of the learners. In fact, learners and young people spend more than 7-8 hours in schools and colleges, while they spend their sleeping hours at home. What we are saying here is that schools, apart from the formal education they give, also influence the learners indirectly. Basically, if we want to produce quality learners, then we must have quality schools updated with the latest technological developments.

Keywords: Cloud Computing.

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INTRODUCTION

There was a time when, to use files on different computers, you needed to save your files on a thumb drive or CD-ROM disk. The drive or disk then travelled around with you so that you could load your information onto other computers while holding your breath until the document or PowerPoint slide was actually retrieved. The safety, stability, and ease-of-use of cloud computing in education is resulting in widespread adoption in educational institutions of all sizes and types.

MEANING OF CLOUD COMPUTING

According to Cruz (2011), Cloud computing is a collection of applications and technologies which can be accessed and manipulated by a large number of users in real time.

Dictionary.com Unabridged defines cloud computing as, "Internet based computing in which large groups of remote servers are networked so as to allow sharing of data processing tasks, centralized data storage, and online access to computer services or resources."

The term ***cloud*** has been used to refer to platforms for distributed computing. Cloud computing is, without doubt, one of the latest technological innovation that is good use to the

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education sector. Cloud computing does not only allow school administrators to make work more efficient, it also allows learners to keep themselves updated. Through cloud computing, learners will be able to access most of the modern internet amenities that are out there. And, through it, they will be able to learn at a pace that we have not imagined possible before. Basically, to assume that education can continue and prevail without modernizing it is, well, foolish. If we want our learners to learn, then we must make sure that our schools are at par with the technological breakthroughs in the real world.

NEED AND SIGNIFICANCE OF CLOUD COMPUTING

Cloud computing in higher studies open avenues for better research, discussion and collaboration. It also provides a software desktop environment, which minimizes hardware problems. Cloud computing also enables classes to be run on remote locations. Many institutes have moved their resources online with libraries filled with hundreds of thousands of books that students can access at any time. It will expand a lot within the coming few years.

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WHY STORE IN THE CLOUD?

(According to the survey by Gail Staines in 2013)

- **No more carrying around devices,** such as thumb drives or CDs. You don't need to worry about losing the device, breaking the CD, or not having your information load properly.
- **Easy access!** Lesson plans, labs, grades, notes, PowerPoint slides – just about anything digital that you use in teaching is easily uploaded and accessed anytime.
- **Stability:** cloud computing is now to the point of being a very stable technology that you can rely on.
- **Security:** Your data, content, information, images – anything you store in the cloud usually requires authentication (ID and password, for example) – so it is not easily accessible by anyone. In addition, should something happen to the technology at school, your content will still be available to you and your students if it is stored elsewhere.
- **Shareability:** Working on an instructional assignment with other teachers? You can share some or all of your files that you have stored in the cloud. No more obtaining an extra thumb drive or burning another CD or DVD. You just need to send a link to the file(s) destination.

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- **Trackability:** Make changes to a lesson and want to change it back? No problem. Cloud computing will save multiple revisions and versions of a document so that you can chronologically trace back the evolution of an item.
- **Collaboration:** You can set-up various student groups to work on projects and assignments in the cloud.
- **Good-bye copier!** That's right! With cloud computing, the amount of photocopying is reduced significantly – even more so if each student has their own smart device (computer, laptop, tablet, etc.). Quizzes, tests, assignments all can be taken, scored, shared with student and parents, and stored.
- **Good-bye file cabinets!** With cloud computing redundancy, there is no longer the need to both save files digitally as well as in paper format. Cloud computing systems are regularly backed-up, so the chances of losing content are quite small. And, no more file cabinets means more classroom space for you and your students!

GOING PAPERLESS

In the early 1980s, **F.W. Lancaster** predicted a paperless society. We are not quite there yet and many not be for many years to come. There are some instances where paper is still the preferred format. Even though we have e-books, people still prefer to hold an actual paper book in their hand. There are situations,however, that going digital makes sense.

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Classroom and school administrative management is a perfect example. If your school has information technology infrastructure (wired and/or wireless), it is easy to implement cloud computing. And, the advantages of cloud computing far outweigh any disadvantages. From the administrative perspective:

- Staff and teacher time spent printing, filing, and distributing can be better used on more educationally-directed activities that impact student learning.
- Cost savings in terms of buying, leasing, and maintaining photocopiers and printers, ink cartridges, and paper.
- Return-on-investment by not needing to invest in purchasing, housing, and maintaining servers, software, and related IT items, such as thumb drives, and CD-ROMs.
- Greater efficiencies as teachers and staff can easily access documentation anytime, anywhere without needing to rely on someone being at their desk to sign-out a paper file.
- Streamlined workflow: Workflow can be tracked using various analytical tools to see how often files are accessed, busiest times of the day and days of the week, etc.
- Short learning curve: It does not take long – a few hours (if that) – to learn how to manage digital documents in the cloud.

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Shuai Zhang (2010) in his paper explains that cloud computing is growing day by day.There is a requirement of various computing models to access the relevant data and the resources to be more efficient and provide effective outcomes. The basic framework of the cloud should be shared among various resources and the outcome should be a result of all the features extraction from the cloud infrastructure .The various services provided by the cloud infrastructure should be used to yield better results and performance in the SE Project .

Xu Wang (2011) in his paper describes the various developments that have taken place in past few years with the technological advancement in the field of cloud computing .As the word cloud suffices maximum with no boundaries its important and in fact more enriching feature with help of which the limitation of the growing requirements of project can suffice otherwise it was very difficult to add speed in computing and more resource's easily with the pay and go model it's very easy to increase and decrease the resources as and when required by the project in the cloud infrastructure.

SECURITY ISSUES

In her research article **"Role of Cloud Computing in Education System" KiranYadav** says that in cloud computing we are saving our important and crucial data in one place and it will be easy for hack Protection of data is a major security issue. Educational Institutions may consider that their data is more secure if it is hosted within the institution.

Transferring data to a third party for hosting in a remote data Centre, not under the control of the institution on and the location of which may not be known presents a risk. Some cloud providers now provide guarantees in their contracts that personal data will only be stored in particular countries. It has been suggested that the provision of cloud services through a single provider is a single point of failure and that it would be better to contract more than one cloud provider in order to minimize risk. Another security issue is Unsolicited advertising in which cloud providers will target users with unsolicited email or advertising.

CONCLUSION

The present availability of high-capacity networks, low-cost computers and storage devices as well as the widespread adoption of hardware virtualization, service oriented architecture and automatic and utility computing have led to a growth in cloud computing. Cloud computing has now become a highly demanded service or utility due to the advantages of high computing power, cheap cost of services, high performance, scalability, accessibility as well as availability. There is a need to be given proper attention to make cloud computing services more reliable and user friendly in educational sector.

In the field of education, cloud computing is very practical for a variety of reasons. Indeed, cloud computing will enable a certain educational institution to actually make use of the global internet resources for data analysis and data storage. Furthermore, the world today

is, quite literally, run by the cloud and cloud-connected technologies. As such, to work independently from this fact is to work with futility. Some problems such as platform security, technical standards, regulatory and other services are not well resolved yet in practice, pending further research and exploration. Either way, e-learning application model based on cloud computing will not stop its pace to proceed. As the cloud computing technologies become more sophisticated and the applications of cloud computing become increasingly widespread, e-learning will certainly usher in a new era of cloud computing

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