



E-LEARNING FOR DEAF STUDENTS USING CLOUD COMPUTING IN HIGHER EDUCATION AT CHENNAI.

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Abstract

E-learning includes all forms of electronically supported learning and teaching. It is a computer and network-enabled transfer of skills and knowledge. E-learning applications and processes include Web-based learning, computer-based learning, virtual education opportunities and digital collaboration. It is also a useful tool that has contributed in facilitating education for deaf people.. Deaf people are able to get benefit from this technology by increasing their knowledge and improving their skills. They can utilize the mobility feature to learn anywhere and at any time. E-learn is an important one in higher education. Most of the students easily learn and develop skill and knowledge in e-learning method. Now a day's the cloud computing tools are much used in e-learning method. In this paper we study about how deaf peoples used e-learning system using cloud computing in higher education at Chennai.

Keywords: E-Learning, Deaf Learning, Higher Education In Chennai, Cloud Computing.

INTRODUCTION

According to the World Health Organization in 2015, 360 million people all over the world are Deaf or have hearing difficulties [1]. According to the tamilnadu census data 27273 peoples are hearing impaired in chennai [2]. World Federation of the Deaf, 80% of Deaf people are illiterate or semi-literate [3]. So we must take more efforts to the Deaf equal opportunities in education and in working with others. E-learning is the excellent ways to increase the percentage of educated Deaf people by optimizing new technology. Today, many new systems were designed to assist Deaf people access the web for learning and training. E-learning is commonly referred to the intentional use of networked information and communications technology (ICT) in teaching and learning. Fig- 1 shows about e-learning system.

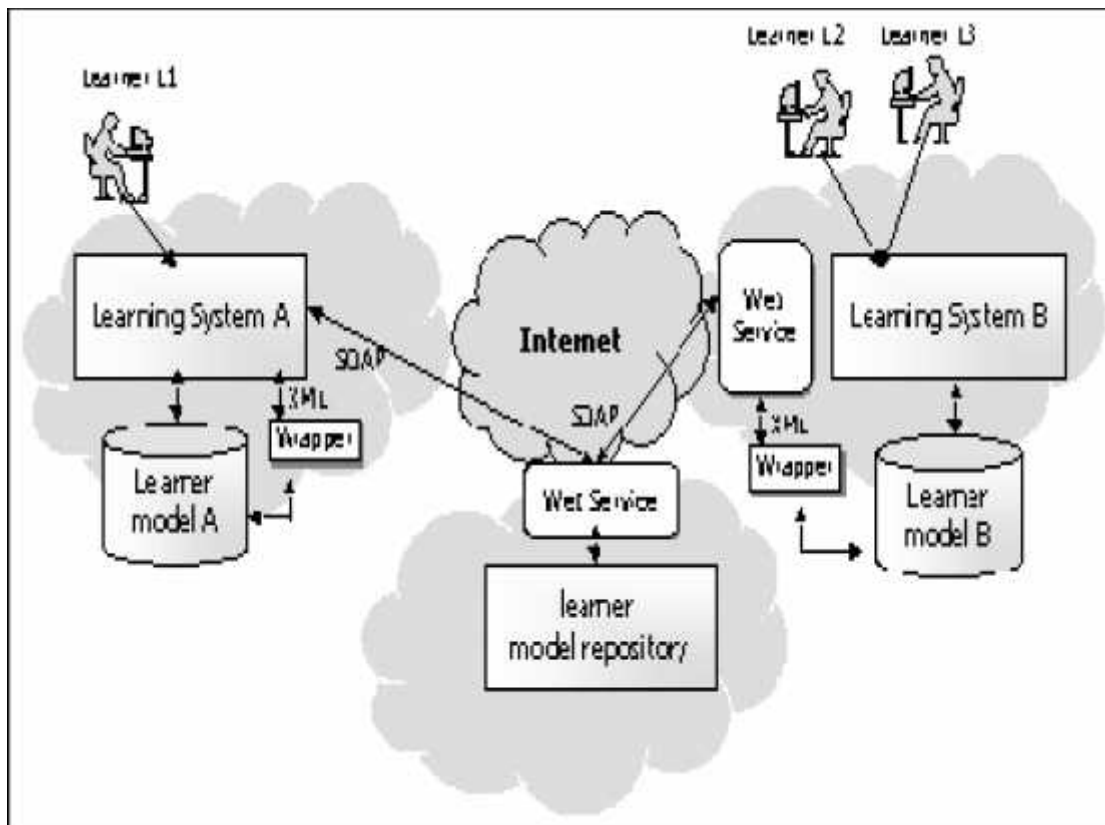


Fig- 1 - e-learning system

Deaf peoples are communicate through sign language. It is one of the most growing fields of research today. Many new techniques have been developed recently in these fields. In this situation we have to assist deaf people with their study



material translated into the Sign Language based on e-learning technology. The user-friendly multimedia based, telecommunication and the information services of the Internet can be used as a standard electronic platform to support primarily the main procedures of distance, life long and continuing training for the Deaf people.

In India only low amount of institutions implement e-learn method to deaf peoples. In Chennai only few number of higher education institutions used e-learn method, because of lack of telecommunication devices, multimedia software's and high implementation cost. So that we can implement cloud computing technology in e-learn method to achieve the great result in deaf people's e-learning. Cloud has lot of tools and futures to support e-learn system. Here we present effectiveness of e-learn for deaf peoples using cloud computing in higher education at Chennai. Fig – 2 shows the deaf peoples hand sign language samples.

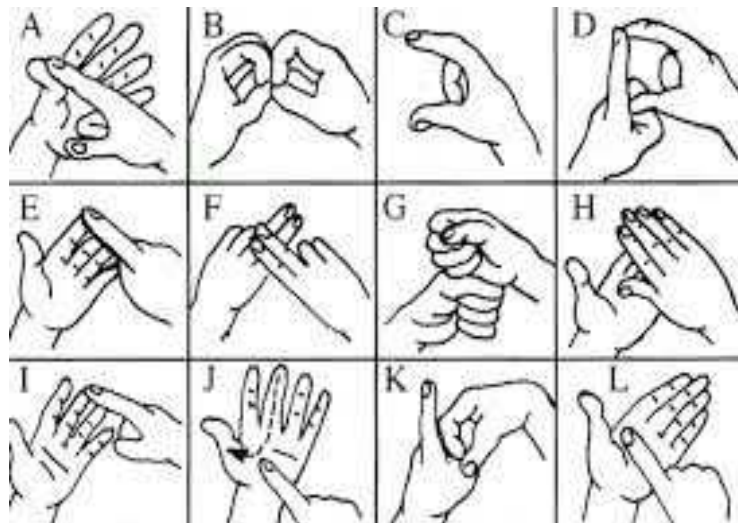


Fig – 2 – deaf hand sign language

LITERATURE REVIEW AND RELATED WORK

Deaf students in higher education reveals a significant body of knowledge about the barriers these students face in gaining access information in the classroom. In addition, there is a dearth of research on the effectiveness of such support services as interpreting, note taking, real time captioning and tutoring, particularly with regard to their impact on academic achievement[4]. e-learning environment is one of the most used techniques for educational purpose and this includes the education for hearing impaired(HI) students. However most e-learning environment available does not particularly can be useful to those students due to its feature which is lacking in terms of adaptability they often encounter problem in accessing the information available in terms of understanding it and using it in a proper manner [5]. E- learn system assist deaf people to communicate hearing people. One of most important impacts of the technical revolution has been in the field of education and learning. Distance learning is very convenient for people in different demographical locations and who are not able to continue formal education [6].

Now a day's e-learning has the shape of learning that gives Information and Communication Technologies (ICT) in education by using different types of multimedia (audio, video, images, and animations) and different technologies (DVD, video tape and TV). E-learning can occur inside or outside of a classroom learning [7]. All segments of society can benefit from e-learning and m-learning facilities, including disabled people. If they do not become familiar with new technology, it can negatively affect their life [8].

Deafness is a hearing disability in which a person is incapable of receiving auditory information. Most people who are deaf are also speech-impaired and they use sign language (SL) as the main way of communication [9]. Sign language uses hand signs, facial expressions, lip patterns and body language instead of sound patterns. As on spoken languages, sign languages vary amongst countries and have their own vocabulary and grammar. They also vary within the same country and there is no standard sign language [10]. This paper aims to assist e-learning in higher education using cloud computing system for the Deaf. The primary data taken from the higher education institutions especially for deaf in Chennai.



STANDARDS IN E-LEARNING

E-learning standards are documented agreements containing common rules and guidelines that are used throughout the design and the implementation of any learning course. Standardization is essential in system design and implementation to ensure reusability, portability, flexibility and interoperability. Furthermore, management of learning content becomes easier when standards are applied. Moreover, this will reduce the time and effort the learner needs to learn new courses.[11]

E-LEARNING SYSTEMS FOR THE DEAF

To implement e-learn we need the following,

virtual classroom, webpage translator, dictionary for sign language, etc.

1. computer and communication devices
2. cloud computing tools
3. sign language interpreter
4. Hand sign images
5. sign language educational content video
6. sign language animation
7. sign language text

CLOUD COMPUTING

Cloud Computing is a new paradigm that provides an appropriate pool of computing resources with its dynamic scalability and usage of virtualized resources as a service through the Internet. The resources can be network servers, applications, platforms, infrastructure segments and services. Cloud computing deliver services autonomously based on demand and provides sufficient network access, data resource environment and effectual flexibility. Cloud computing is growing rapidly, with applications in almost any area, including education.[12]

Cloud computing applications provide flexibility for all educational universities, schools and institutions. The benefits of cloud computing can support education institutions to resolve some of the common challenges such as cost reduction, quick and effective communication, security, privacy, flexibility and accessibility. “Cloud computing” is the next accepted action in the evolution of on-demand information technology services and products. Cloud computing allows to move the processing effort from the local devices to the data center facilities. The software is seen as a service and the applications and data are stored on multiple servers that can be accessed from the Internet.

The benefits of cloud computing are

1. Achieve economies of scale
2. Reduce spending on technology infrastructure
3. Globalize your work force on the cheap
4. Streamline processes
5. Reduce capital costs
6. Improve accessibility
7. Monitor project more effectively
8. Less personnel training is needed
9. Minimize licensing new software
10. Improve flexibility.

BENEFITS OF USING CLOUD COMPUTING IN E-LEARNING

One of the most interesting application of cloud computing is educational cloud. It focus the power of thousands of computers on one problem, allowing researchers search and find models and make discoveries faster than ever. The effectiveness of of cloud computing can help colleges keep pace with ever growing resource requirements and energy cost. Students expect their personnel mobile devices to connect to campus services for education.[12]. Fig – 3 shows the e-learn in cloud computing

e-learn system can be benefit from cloud computing using,

1. Infrastructure
2. Platform
3. software

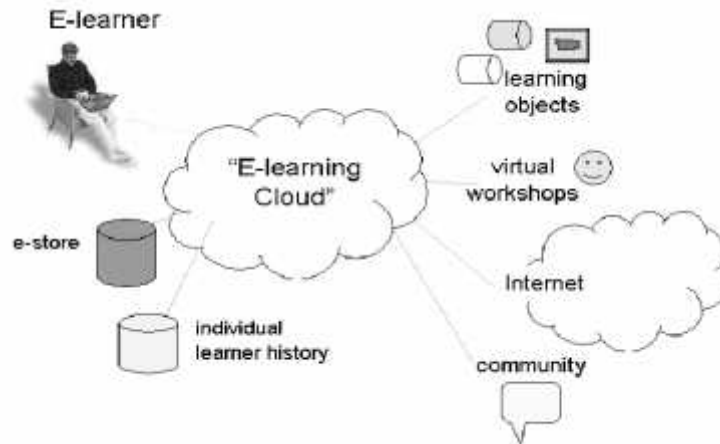


Fig – 3 e-learn in cloud computing

DEAF SCHOOLS IN CHENNAI

Nearly seven schools for hearing impaired available in and around Chennai. Due to lack of technological device and communication system they were not implement e-learning system for teaching. Sometimes if they need to show any multimedia related image and video , they have to use e-learn method. Student studied in these schools mostly got minimum e-learning skills.

In these seven schools only 4 schools has higher secondary education and remaining schools has only secondary level education(up to 10th). To give successful education to deaf students we must implement e-learn method of teaching in all schools using cloud computing.

DEAF COLLEGES IN CHENNAI

Only two arts & Science Colleges avail in Chennai for teaching deaf students. After finishing their school education deaf peoples utilize these two college, one college is an fully government and next one is self finance. Both colleges not used/ implement e-learn method . sometimes they may use e-learn for their time of using. Its also lack of communication and technological devices and adaptability.

BENEFITS OF E-LEARNING IN SCHOOL AND COLLEGES IN CHENNAI

Chennai is the most important developing city in India. Day-by-day new improvement and changes in Chennai. More familiar things available in Chennai. We must give importance in education also in Chennai. In education we must inclusive disabled peoples like deaf peoples. To give better education to the deaf peoples is possible through e-learn system. During the e-learn method we need the infrastructure, software and platform. So that to use cloud computing for get better result in deaf peoples higher education.

Some of the Internet websites are especially developed for disabled persons. Some of these websites are e-learning applications for the disabled people.

CLOUD COMPUTING IMPLEMENTATION

This paper focuses on the implementation of an e-learning environment for the educational support of the deaf, as a paradigm of deaf inclusion in the Information Society. The developed platform allows structuring and presentation of Indian Sign Language and educational material.

The popularity of learning on the internet, the construction of perfect web-based learning environment has become one of the hot points on researching remote education. Cloud computing will have a significant impact on the educational and learning environment, enabling their own users(i.e., learners, instructors, and administrators) to perform their tasks effectively with less cost by utilizing the available cloud-based applications offered by the cloud service providers. To implement the cloud computing in Chennai based higher educational institutions we need good infrastructure, platform, application and software



PROPOSED SYSTEM

- To implement e-learn with cloud computing in all deaf education institutions
- To upload new educational sign language video, controlling video speed
- To implement good computer and communication system with cloud
- Save video ,Search in the content
- User tracking Chatting(text chat or video chat)
- File sharing and all educational updated materials.
- To implement various advance futures.

CONCLUSION

Now a day's Chennai one of the developed city in not only companies but also in education fields. In olden days deaf peoples not having awareness about their education. But now a day's more number of deaf peoples entering in higher education. After finishing the education most of the deaf peoples got job in IT companies. The deaf peoples job may be non-voice oriented. After enter the IT companies they face more struggles to use computer and communication devices. So that we have to implement in e-learn system in both school and higher education. During their higher education they can get various knowledge related to using communication devices. then they may feel free working environment in their profession. So we have to implement e-learn method using cloud computing tools in all higher education institutions in and around Chennai. Cloud has lot of tools to support education. The author conclude that e-learn in cloud computing needed in deaf people related higher education in and around Chennai.

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