VIRTUAL TEACHER– THE NEW ERA OF TEACHING

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ABSTRACT: In the last few decades, education has witnessed some advances in technologies involving computer aided learning that promises to drastically change the methods of teaching and learning. The World Wide Web has played a major role in information storage and dissemination in the educational community. Conventional classroom-based teaching involves the delivery of course materials by the lecturer in a particular place at a defined time. Hence it imposes a constraint of time and place on both the instructor and the student. Due to human factor arising from the traditional classroom method, the lecturer may not always be able to put in optimum effort towards preparing and delivering course materials. There may also be inconsistencies in the pedagogy and learning style due to repetitive nature of teaching/learning. The objective of this paper is to develop a virtual trainer to enhance the quality of teaching and to provide assistance to clarify the doubts of the student community at any time of their convenience. Today's digital era, dynamic teaching and learning in higher education has moved from traditional class room, face-to face learning environments to more interactive and collaborative environments, due to a demand for online distance learning from students, and the desire from academic institutes to promote and deliver courses across the globe. Advancement in open-source virtual learning platforms technology, enables the development of flexible online learning environments to exist that can be accessed anywhere, anytime and in any place by students, hence enabling academics and academic institutes to teach and increase their market across the globe.

Keywords: Virtual reality; Education; Immersive Education

INTRODUCTION

New generations have new needs in the learning method. The changing information gathering and processing ways have effects on the educational processes. Because of the renewing requirements, teaching needs to find new ways all the time. This research aims to renew both the contents and the methodology of teaching geography. This shifts our focus from use of glass screen-based systems to more simulated world around us. Hence, we can say "AR/VR" is the new normal. As technology evolved the transition from the web-based technologies to mobile has been transformative: we moved away from "Point-click- tab type" to the "touch-swipe-talk "paradigm. Now AR/VR takes a further step by enabling experiences to build around natural modes of interactions such as gesture, gaze, posture etc. AWS provides a cost-effective way to build AR/VR applications using Amazon Sumerian. With Amazon Sumerian, you can build an immersive and highly engaging virtual trainer experience without the need of

any additional device or complex virtual reality platform management.

Present technologies enable the creation of virtual trainer using the Internet and its resources. For the educators and trainees, a benefit of the Internet as platform for virtual learning is that the information that can be stored is almost limitless. The information being electronically stored can be accessed or downloaded by learners at their own pace, thereby overriding the constraint of time and place experienced in classroom-based learning. The involvement of the distance learning includes teaching using telecommunication tools, which transmit and receive numerous materials through data, voice, and video. There is also an increased use of virtual classrooms (online presentations delivered live) as an online learning platform and classroom for diverse set of education providers. In addition to virtual classroom environments, social networks have become an important part of e-learning. The aim of this project is to provide a web enabled interactive model of e-learning in which the course material is presented using the advantages of multimedia and hypermedia.

LITERATURE REVIEW

The term education generally refers to the process of facilitating learning, acquiring knowledge, skills or positive values. The main goal of education is to prepare students for life, work and citizenship by training their knowledge and skills deemed necessary in the society. The educator's task is to improve qualifications, competencies and skills of graduates during the education path. Usually, classes are divided into two parts: theoretical and practical, such as exercises, laboratories or internships. Theoretical courses consist of knowledge transfer in the form of lectures among a large group, which may contain discussions. Over time the needs of students and the labor market forced changes in the education system. Basing of the wisdom of Confucius who said, "Tell me and I forget, show me and I may remember, let me take part and I understand", the practical part had been made a priority. Many students have problems understanding issues, especially the science courses, because of its technical complexity, a necessity of abstract thinking and the fact that those concepts are not entirely tangible. Deficiencies in fundamentals prevent further development and exploration of more complicated problems. Practical exercises, mainly based on specialized research equipment, must be carried out under supervision; therefore, students cannot self-configure lab equipment, experience states of emergency or effects of misconfiguration which may lead to equipment damage. Moreover, there is no possibility to practice and catch up outside the laboratory schedule.

Currently, the solutions are modern technologies such as online courses blended learning different computer-based platforms and many others, which allow the students to repeat several times the same topic, make mistakes and learn from them. Numerous examples of hardware and software which have been successful in educational processes indicate that ed-tech industry can improve learning outcomes for the majority of students. More and more educational centers around the world are starting to introduce powerful new technology tools that help them to meet the needs of diverse student populations. Traditional books are being replaced by digital instructional content (especially from open educational resources). Notebooks, tablets or cell phones with dedicated application have replaced classical copybooks. Distance and personalized learning are used to tailor education to each student's academic strengths, weaknesses,

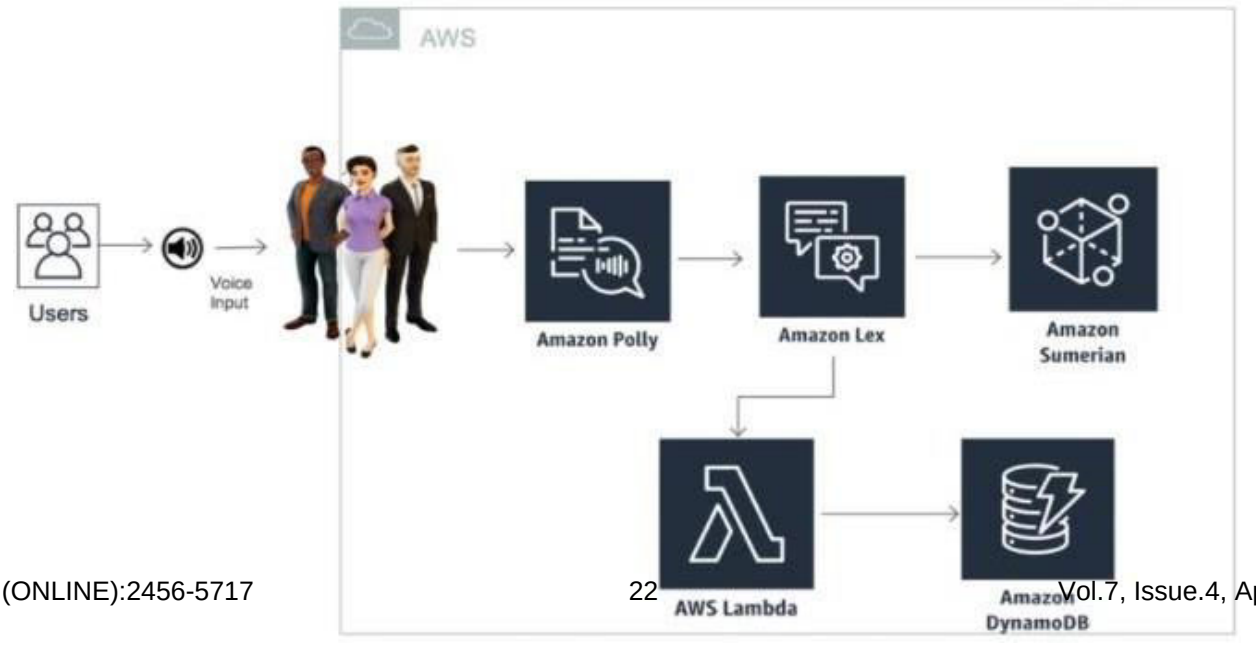
preferences and goals. It is well known that the use of information and communication technologies have been found to improve student attitudes towards learning. It is a rapidly growing field of research, continually developing and looking for new technological solutions. Over the last several years, Virtual Reality (VR), which provides an interactive computer-generated environment, has moved from being the purview of the gaming to the professional development such as military, psychology, medicine and teaching applications. In 1987, Jaron Lanier, together with Steve Bryson, formulated the first definition of VR, which they described as follows, “VR is the use of computer technology to create the effect of an interactive three-dimensional world in which the objects have a sense of spatial presence” [. Another definition of VR found in literature isI3: Interaction + Immersion + Imagination Currently theI3paradigm is mainly achieved through the generation of visual, audio and less often tactile, smell or taste effects. Human brain has the capability to process these sensations and allows an abundant flow of information between the mind and the environment, creating the experience of reality. This means the perception of reality can be changed if the sensory information sent to the human brain is altered to provide fictive information. In technical terms, VR is an artificial three-dimensional environment created by a computer and presented to a person in an interactive way. It refers to the computer simulation displaying an environment through which one can walk and interact with objects and simulated computer-generated people (avatars). Virtual environment is usually three- dimensional, and it often attempts to replicate the real world in its appearance and physical phenomena. It simulates the user’s physical presence in an artificially generated world that allows interacting with the environment.

METHODOLOGY

I SYSTEM DESIGN AND ARCHITECTURE DIAGRAM

Experiential learning using AR/VR solutions can actively engage learners in fast learning, better retention and improved decision making. AWS provides a cost-effective way to build AR/VR applications using Amazon Sumerian.

With Amazon Sumerian, we can build an immersive and highly engaging virtual trainer experience without the need of any additional device or complex virtual reality platform management.



This architecture utilizes Amazon Sumerian along with Amazon Lex and Amazon Polly with out-of-box integration provided by an Amazon Sumerian host. Amazon Polly provides text to speech capability and Amazon Lex is used for the questions and answers bot. Questions and Answers are stored in Amazon DynamoDB and Amazon Lex will pull those questions and answers, using Amazon Lambda. The user will interact with Sumerian Host via voice command to get training and learn about different AWS Services.

ADVANTAGES OF PROPOSED SYSTEM

- **NON-RESTRICTING**

  Both learners and instructors around the world to participate in live classes to collaborate an interact

- **AFFORDABLE**

  Low costs. Participants also save time since all that is needed is an internet connection.

- **FLEXIBLE AND ACCESSIBLE LEARNING**

  Online Lectures and Tutorials.

III. CONCLUSION

The education system has been evolving for centuries. It has always adapted to the available technology and needs of the students. We are now on the threshold of another development and itis a duty of scholars, educators and teachers to embrace it and prepare for it. The generation that is starting education right now has been online for whole their lives. Digital world is as important and immersive as the real one. They are digital natives, born onto the world of mobile phones, omnipresent, Internet and immediate access to most of desired information or data, is it music, video or content. Educating the future generations is a challenge and it requires a completely different approach to maximize efficiency and engagement.

In this Project **"Virtual Teacher- The new era of Teaching"** we are addressing the educational use case using Sumerian. But this idea can be extended to many different industries and verticals where a lot of money and time is being spent on training. For example, you can create an animated educational tutorial for students to make a subject more interesting with interactive learning or listen to morning news with a different Sumerian host Avatar of your choice in a regional language. By utilizing Amazon Sumerian, you can reduce a lot of overhead and it can really help transform monotonous learning into an interactive and exciting experience.

The new system is expected to serve as a remedy to the problems and weakness observed in the old system. It will combine open learning techniques based on new technologies (in this case, the world wide web) with conventional classroom teaching. The main intention is to make the learning experience more flexible, stimulating and available around the clock and at any place with Internet facilities. The students will be able to navigate freely within the virtual classroom environment and enhance information

resources used by the students.

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