Content Based e-Learning and Mobile Application Platforms Through Information and Communication Technologies

Sunil Karamchandani∗

Mumbai, India

∗Corresponding author

Keywords: Video based learning, MOOC, Content architect, SME.

Abstract. In the end of 2017 statistics revealed that 500 million people in India have access to the Internet. We propose three Content Based e-learning and Mobile Application platforms that have taken roots in the Indian Education system and spread its wings in both rural and urban institutes. Each of them contribute to motivate the system, however as standalone tool they are proven to be inefficient. Thus each of them have to be integrated in the classroom through Information and Communication technologies to account for peer presence and put the feedback mechanism in place. The authors strongly believe that Technology or AI can never replace peer teaching. Technology has to be integrated in the teaching learning process and thus be a part of Outcome Based Education.

Introduction

A 2012 Microsoft study rated the average attention span of human to 8.25 secs in 2012. Imagine then how less attentive are the students in an environment engulfed with technology and digital gadgets at their fingertips [1]. Even the fish manage to have more attention spans than college children [2]. We propose technology as a measure to increase the attention span of the student. When we say technology we are not referring to just the PowerPoint presentations of the content. We need to turn the tables around. Exploit the Trojan horse of technology which has already spread its roots in young students. We prove to transform these gadgets into tools for learning. The 4-G technology has spread its spectrum into every major village and town in India. The spectrum wars between the major players Jio, Airtel and Vodafone have made data rates affordable to the Indian diaspora. Thus e-learning has managed to enter into the home of the Indian rural class. Technology is in terms of the interactive ppts. Videos, one-minute papers, flipped classrooms or any form of interactive e-content. This has also given rise to EdTech startups in India since 2015. Bengaluru, Pune and Noida being the key hubs of e-learning. Education in India is observing a continuous renovation brought about by technology. These start-ups bring the classroom to our homes. Teachers are mere facilitators of the education process. The EdTech wave has spread its fangs all over the country and the world has its eye on it. While Zukerberg has financed a few of these start-ups like the Bayju’s, MHRD has tied up with Microsoft [3]. MHRD in association with the IIT’s has jumped into the bandwagon with full preparation. EdTechs can change the way education has been perceived. The author proposes three e-learning platform which will be the pedestal on which the Indian education system stands. Content based video learning, Massive Open Online Courses (MOOC) and applications developed on the Mobile with concepts introduced through Gamification. However the author feels that all the three stand alone or even together may not make an impact due to poor feedback and assessment mechanisms and no peer supervision. We propose that these three methods be integrated with Classroom Teaching. An hour of lecture can be split into four parts in any random order so there is peer involvement which still is of prime importance in teaching-learning mechanism. The mantra of management KISS has been now extended to Technical Education ‘Keep It Short Stupid’.

Organization of the Text

The paper describes the implementation of three contrasting e-learning platforms which have taken over the realm of Tech Education in India. It finally concludes with how they need to be amalgamated
into the Teaching-learning process so that whatever the student learns can be evaluated in terms of Outcome Based Education.

**Content Based Video Learning**

In India Sikkim Manipal University for its Bachelor of Science (BSc IT) course has designed mobile e-learning platforms given by reputed and highly qualified faculty. The speaker is a Subject Matter Expert (SME) in the related field. The SME is also referred to as a domain expert. This concept may not be limited to distance learning only. Class room learning can also be effective using these techniques. The Content Manager / Learning Architect is required to manage the end-to-end content flow and delivery. The prime concern of the architect is to customize the content build projects; the final content is delivered in multiple formats—Instruction Led Training, distance training, animated facilitator-based eLearning, and video-based Learning. They are responsible for the client and SME interactions for source content. The Content Manager may have one or more SME’s reporting to him. He would develop and maintain client-wise/project-wise scope of work document, process and technical standards, and function-wise style guides. The Manager is also responsible for analysis, design, development, implementation and evaluation phases of custom content development projects. They are required to understand the requirements of the client and suggest apt development/instructional style based on type of content [4].

Additionally they have to keep abreast of the state-of-the-art technologies, approaches and training stratagems, and recommend suitable solutions for the ongoing or new projects. They should be aware and adher to latest ISO standards. Above all they should ensure client satisfaction, build working relationships with the clients and at the same time improve the skills and competencies of the team members.

The SME works under an instructional designer. The job of the instructional designer is to extract maximum intelligence information from the SME. Communication between the SME and the instructional designer is of prime importance and plays an important factor in the manner in which the course shapes up in the end. The client in our case the SMU will play cupid and establish an interplay between the SME and the designer. The instructional designer has the Design Document (DD) ready even before he has met the SME. The document is created by the Content Provider (CP). The instructional designer acts as the bridge between the two. The SME will initially go through the entire document and authorize its technical content. Ultimately it depends on the camaraderie between the two which decides the fate of the course designed. The SME is an important thread in a large network. Thus he has to be flexible with logistics and also be involved in performing tasks leading to the finalization of the end videos. The instructional designer takes care of mapping the course content in the design document with the video presentations. If any modifications are there it is brought to the notice of the SME during the production of the video presentation. SME forms a critical part of content validation.

The similar models are followed by companies such as IBM for training their personnel in subjects such as Artificial Intelligence and Machine Learning. Software companies such as Larsen & Turbo go a step ahead and insist that the SME create tests and questionnaires as well for the trainees. Both the PG and UG institutes need to not invest heavily in outsourcing for the SMEs and Content Managers. They simply need to record lectures given by their faculty and upload it on YouTube. The YouTube also provides a form of discussion forum where the videos can be rated, ambiguities cleared and concepts understood. Many institutes have started this process and gone a step further by uploading these videos under Common Creative license which will allow the students to reproduce this information

As student facing such challenges during their placements which requires that they be well versed in this method of training.
MOOC’s in India

The Ministry of HRD (MHRD), Govt. of India has taken a keen initiative as far as MOOC’s are concerned. A graduate student in any vocation, whether Technical or Non-Technical acquires Credit Mobility of his grades achieved through any MOOC program. SWAYAM (meaning: on your own) is a portal announced as recently as 2016, now has over. In addition MHRD has started TV channels called “SWAYAM Prabha” (prabha meaning: light or glow). In the beginning of 2018 about 76 universities allow credit transfer of courses taken through SWAYAM. In a years’ time SWAYAM developed a whopping 755 courses and implemented e-learning programs in more than 22 different states. By end of 2018, the number would be way beyond 1000. The SWAYAM is based on a four quadrant structure: watch the recorded lectures, download the related printed material followed by assessment through different exam formats. All this while the student has a discussion forum in place where he can argue his points and place his difficulties.

India with more than 22 different languages and 700 dialects, technical communication faces a major challenge. The very near target is over 80000 hours of e-learning material, this with the aid of Google and Microsoft. The two social networking sites form the pillars on which the technology is developed, with SWAYAM login being facilitated through these websites.

Disadvantages of MOOC’s: Any learning without the presence of real time teaching has disadvantages.
1. Mapping of MOOC’s to course outcomes is difficult [5]
2. Poor Feedback mechanism
3. Researchers argue that not all MOOC lectures can be interactive. Quite a few may be just informative to take the curriculum along
4. No MOOC lecture can cater to a particular curricula

Utilization of MOOC’s as a Tool for Training

National Mission on Education through ICT under MHRD, Government of India has started training program to train ten thousand teachers on use of technology in teaching. They have MOOC courses which are equivalent to Faculty Development Program (FDP) on Pedagogy for Online and Blended Teaching-Learning Process. They have associated with it a Boomerang model. Over 2000 teachers were trained first and the top 253 participants out of the 1800 that actually finished the course became the associate faculty for the similar program conducted a year later. In this manner the Ministry plans to train over 10,000 teachers in as short period of time. MHRD has established Remote Centers all over the country so that peer presence and instructions are followed completely. As of today there are 543 active existing remote centers all over the country. In order to assist the online facilitation of these courses the support is obtained from other programs developed and initiated by the IIT’s such as eLearning Animation, Spoken tutorials, Virtual labs, and FOSSEE. NMEICT is a perfect example of how e-learning is integrated with classroom teaching.

Mobile Apps Riding on the Gamification Trend

The learning apps designed dwell on the child psychology as well [6]. With the advent of AI the behavioral pattern of the student can be studied. These apps have provide the user with a perfect analysis of the motor skills of the students by identifying what type of questions the students manage to answer, how fast they answer, which questions they find difficult to answer and many such assessment criteria’s.

Conclusion

The days of classroom teaching are far from over. Smart boards may have replaced the Blackboards. Technology is at the fingertips of every child. Attention spans are decreasing. This paper proposes that the conventional class room teaching should be integrated with any of the above e-learning methods. This proves a major advantage as the main drawback of e-learning being lack of peer
presence can be overcome. We eliminate the disadvantage of one and get the best of the three e-learning platforms. We explore the three method of e-learning which has gained prominence since the last three years in India. i.e. Context based video learning, MOOC’s and Mobile apps with gamification based learning. The world now has moved one step further, augmented reality has arrived in Technical Education.

References