EMERGING TECHNOLOGIES FOR BLENDED LEARNING IN TEACHER EDUCATION

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ABSTRACT

Higher Education Institutions have started embracing technologies to bring effectiveness to the classrooms. Gone are the days of traditional classrooms where teaching was done mainly through lecture methods. NEP-2020 also talks about the use of innovative pedagogies by incorporating novel technologies in the classroom. Moreover, educational institutions worldwide have experienced an online learning environment in the recent past due to the sudden outbreak of the COVID-19 pandemic and social distancing. As the nature and mode of teaching learning environment in schools are rapidly changing, teacher education institutions need to adapt to emerging situations to keep pace with the new developments. The execution of blended learning demands innovativeness in pedagogy as well as variations in curriculum. The article is an attempt to explore the various digital technologies that are being employed worldwide for classroom discussions and group activities for blended classrooms. It can be concluded that there is a dire need to bring changes by emphasizing new pedagogies for better interaction and collaboration among pupil teachers.

KEYWORDS: Blended learning, Emerging technologies, Online pedagogy, Teacher education

INTRODUCTION

Higher Education institutions worldwide have started using Web 4.0 tools and technologies for various academic and administrative purposes. Information and communication technology tools are being used to impart education at different levels of education in India which is in synchrony with 'Digital India programme', a flagship programme of Indian Government with an objective to change India into a knowledge based and digitally empowered society. The Report of National Education Policy-2020 indicates that all the aspects of pedagogy and curriculum will be revamped soon for holistic development of students. The importance of innovative teaching has also been documented in NEP-2020 which reiterates that teachers of Higher Education will be provided freedom to develop their own teaching approaches within the framework approved by the bodies.

Earlier it was rightly remarked by Kalny (1999, p. 18) that "to confront the new paradigm of learning, teachers of the next millennium will be required to have skills in the 'Six Cs: computer mastery, communication, change management, collaboration, cooperation, and critical thinking." The

researcher stressed that inculcating such digital skills will empower the future teachers which in turn can play vital role to benefit students for a better future. Similarly, NEP-2020 had clearly stated that "Schools will develop smart classrooms, in a phased manner, for using digital pedagogy and thereby enriching the teaching-learning process with online resources and collaborations". Therefore, it demands that both in-service and pre-service teacher education programmes need to be reoriented to prepare pupil teachers for innovative pedagogies. This is an indication that teacher education institutions can play an important role in this digital age by inculcating digital skills required for either blended classrooms or online teaching among its prospective teachers. As the pedagogical practices of digital mode are different from the traditional mode of teaching, the teacher educators need to be empowered for this purpose by providing training for efficient use of digital tools. Hence an attempt has been made through this article to discuss the use of blended learning in teacher Education as well as highlight some easily available free web tools that can be employed by teacher educators for efficient teaching through blended mode.

OBJECTIVES

In the light of review studies, the study attempts to understand the significance of blended learning in teacher education. It attempts to identify the various asynchronous digital platforms available for Blended learning. Furthermore, explore the emerging digital tools for conducting online discussions and group activities that can be employed in Blended classrooms.

METHOD

An introduction has be given in order to highlight the importance of technology integration in teacher education system. Furthermore, effort has been made to explore the use of Blended Learning in teacher education as well as the popularity of various digital tools for innovative teaching for the empowerment of Teacher educators. This has been made possible with the help of review studies conducted on the applications of emerging digital technologies in blended classrooms in higher education around the world.

BLENDED LEARNING AND ITS SIGNIFICANCE

There are three ways of e-learning strategies that are generally being used in educational institutions such as a supporting medium to face-to-face interactions, for blended learning purpose and as complete online purpose (Mitra, 1999; Berge et al.,2000; Laurillard, 2002). The terms Blended learning, mixed mode of learning or Hybrid learning are being interchangeably used in the literature. According to The American Society for Training and Development in 2003, Blended Learning is "one of the top ten trends to emerge in the knowledge delivery industry" (Rooney, 2003). It is an approach that stresses face-to-face and computer-mediated instructions (Ferdig et al., 2012). Garrison and Vaughan (2008, p. 5) had similar view and reiterated that "face-to-face oral communication and online written communication are optimally integrated such that the strengths of each are blended into a unique learning experience congruent with the context and intended educational purpose". Blended learning is "a mix of traditional instructor-led training, synchronous online conferencing or training, asynchronous self-paced study, and structured on-the-job training from an experienced worker or

mentor" (Singh, 2003), on the other hand if not designed properly, then it can combine many least desired facets of both online and face-to-face instructions. Mc Gee and Reis (2012) suggests that any blended course need to provide due importance to some key elements like bringing variations in design, alignment of content, moderation of interactivity, use of technology in the classrooms etc. Hence various aspects of both the pedagogical approaches need to be carefully designed before applying blended mode to a course. Osguthorpe and Graham (2003) observed some benefits of blended environments such as better access to knowledge, richness in pedagogy, better social interactions, economical, ease of revision etc. Blended learning can be implemented at various levels such as at the levels of Institution, program, course or activity (Bonk & Graham, 2006). The researchers predicted that education systems will largely be of blended form in future. (fig:01).
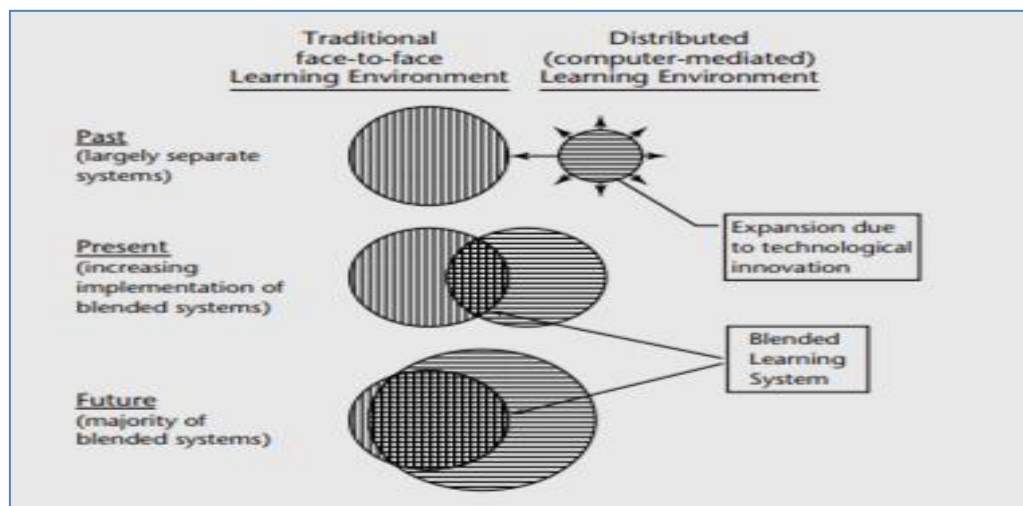

Fig 01: Convergence of Face to Face and Distributed Learning Environments

Source: Bonk & Graham (2006)

http://www.publicationshare.com/graham_intro.pdf

According to Jachin and Usagawa (2017), there are different models of blended learning such as the *Supplemental Model, Replacement Model, Emporium Model, Online Model and Buffet Model.* Course related online components are used by the teacher to supplement the traditional face-to-face classroom interactions and assessment in the *Supplemental model* of blended learning. Apart from the usual classroom meeting, the online course components can be utilized to compliment the teaching learning process. This model extends 'learning beyond the classroom'. Students are expected to complete various online activities. It also helps to bring online collaboration among students to deepen classroom interactions. Many of the concepts are made clear to the students by making use of online resources and there is better use of class hours. This particular Model can be effectively applied in the Teacher Education Institutions for bringing better interactions, flexibility, to create interests and build collaborations among the pupil teachers. Teacher Educators can make use of online resources to

supplement the class period as well as conduct various activities like online quizzes for formal assessments.

Osguthorpe and Graham (2003) outlined some goals of blended classroom environment that can help a teacher to comprehend its importance. The researchers suggests that first and foremost it is important to bring flexibility while making use of class timings which is referred as the pedagogical richness. Secondly the accessibility to knowledge for which the online resources can be sought. Better social interaction occurs which in turn increases communication skills in blended environment unlike traditional classrooms. Shared responsibility in teaching-leaning process provides students, a wide range of personal choices. Blended learning is economical as it reduces time. Researchers further opines that it is convenient to design online resources in blended learning in comparison to programming and graphic arts in pure distance education.

ASYNCHRONOUS TEACHING PLATFORMS

The blended learning environment may allow teachers and students to interact with each other by using both asynchronous and synchronous communication technologies (Cheung and Hew, 2011) as it offers flexibility by giving chance for real time face-to-face as well as online discussion. Asynchronous mode of online teaching is an approach where teaching materials in the form of digital text or video are provided through digital platforms and students are engaged in different activities utilising their own time and space by communicating with peers and the instructor. The teacher educators not only supplement their teaching by preparing online modules (either digital text, podcosts or videos) related to complex topics and provide it to the pupil teachers in an asynchronous mode but also in the process, attempts to prepare the pupil teachers for technology integrated teaching in future

Fig:02 Asynchronous Learning Activities

Source:https://er.educause.edu/blogs/2020/8/6-models-for-blended-synchronous-and-asynchronous-online-course-delivery

Various asynchronous teaching platforms like Google Classroom, Canva, MOODLE, WhatsApp etc. are currently available to share the resources. The teacher can post project/Assignment topics and give time limit for submission. After assessment immediate feedback can also be provided, can also make use of rubrics for this purpose. A teacher can make the best use of such easily available digital platforms to assist the students for sharing online resources and conducting assessments outside the restrictions of space and time and thus make the learning environment spaces more flexible and blended.

PODCAST AS A DIGITAL TOOL

Podcasts are being used in higher education, particularly in blended-learning or in distance learning (Carvalho and Aguiar, 2009). A podcast is "episodic series of digital audio files that a student can download to a personal device or cell phone for study purpose". It is simply an audio transcription of information that can be played anywhere and anytime. In this age of digital technology, the benefits of podcast cannot be ignored. It can easily be used in schools to engage students and improve the teaching and learning practice. "Students who can use podcasts as a learning resource experience the benefits of audio learning, experience aspects of podcasting technology and encourages learning outside of the classroom" Goldman (2018). Similarly Durbridge (1984) stressed the importance of audio media suggesting that the spoken word can have an impact on both cognition and motivation of students Nowadays elementary school students are creating podcasts of their own called as "kidcasts" (Felde& Rogers, 2017). When students create their own podcasts, they are acting as knowledge constructors and empowered learners. It is also a tool for creative expression (Bell,2021). There are so many web-based podcasts that can be employed by teacher educators to empower the pupil teachers. Screenshots of Homepage of some of the commonly used Podcasts are shown in Fig:03, Fig:04 and Fig:05.
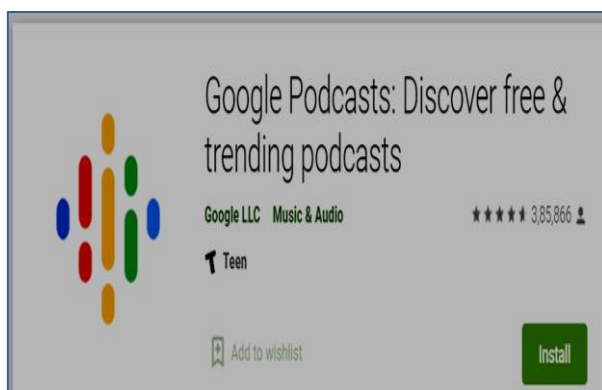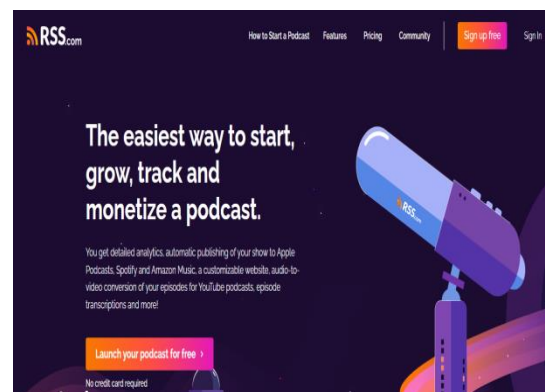

Fig:03 Google Podcasts
Source: https://podcasts.google.com/settings

Fig:04 Homepage of RSS Podcast
Source: https://rss.com/
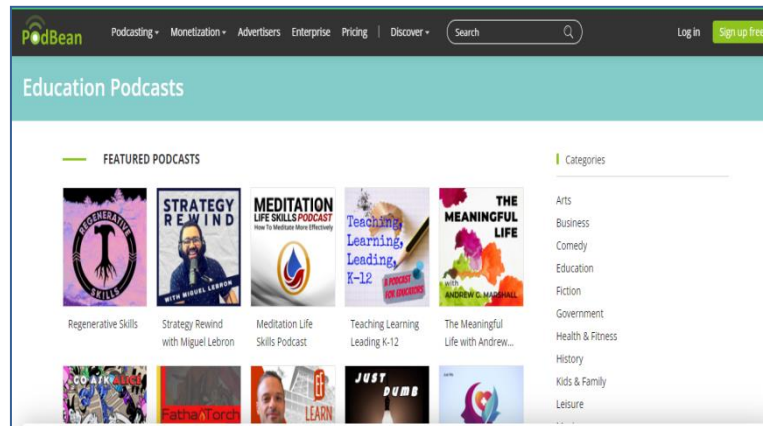
Fig:05 Homepage of PODBEAN Podcast
Source: https://www.podbean.com/education-podcasts

Carvalho and Aguiar, 2009 opined that introduction of podcasts in the classrooms was an innovative practice for students as well as the faculty members who showed interest in listening to podcasts of other courses were equally enthusiastic about creating their own podcasts. The researchers observed that the podcasts were very useful "to provide feedback about assignments, presentations, to give orientations for readings or for the following sessions". Research indicate that podcasts can be efficiently employed in language learning as listening exercises, vocabulary revision etc. (Godwin-Jones ,2005). Hence "Implementing podcasts as part of teacher candidate training courses leads to more prepared teachers" (Goldman, 2018, pp10). An effective teacher can prepare podcasts of his/her own and upload in the Learning Management System (LMS) to help students to develop effective listening, problem solving and speaking skills as they are excellent tools for meeting the learning standards. As Teacher Education Institutions are the best place of producing the best possible future teachers, the teacher educators can use the podcasts as well as assist the pupil teachers to prepare their own podcasts on various topics as part of project activity as well as part of practice teaching. This not only helps to bring inclusiveness in the classrooms but also helps in bringing efficiency by inculcating digital skills.

WEB TOOLS FOR CONDUCTING ONLINE DISCUSSIONS

Discussions can be held in both synchronous and asynchronous approach in a blended class. Online discussions help in conceptual development and clarification. Both voice and text mode can be employed by the teachers but need to act as facilitators by providing the required support for knowledge construction and to develop ideas among students. Regular Online discussions are also of immense help during the period of practice teaching and internship to get clarify the doubts of pupil teachers.

A Teacher has vital role to play in online discussions. Some key points are to be taken care off while conducting online discussions.

- The teacher explains about the topic of discussion.

- Objectives or Goals of the discussion are framed and discussed with the students.

- Teacher instructs about the ethical online behaviour to be mandatory followed by the students.

- The roles and expectations of students are explained.

- Introduces the digital tool used for discussion and also provide firsthand experience of the App to the students.

- The teacher monitors the participation of each student and responds to them by giving the necessary help (can be in the form of providing comments in the comment box) that can help students to understand the depth of the problem or topic of discussion. It can also be in the form of clarifying the doubts or explaining   the issue when students are in a state of confusion or misinformed.

- The teacher supervises the whole discussion period, being vigilant and prevent students from getting out of the track or speaking very personal.

- The teacher also encourages such students who are real contributors in the online discussions and also tracks those students who is inactive, and motivates them for participation.

VOICE THREAD AND WIMBA VOICE BOARD FOR ASYNCHRONOUS VOICE DISCUSSION

The application of asynchronous voice discussion helps in interaction in many ways such as interaction between students, or with the teacher (Hew and Cheung, 2012). It can be used in language learning for developing listening skills, practise speaking, providing verbal cues and for self-identification of pronunciation errors (Gleason and Suvorov 2011; Yaneske and Oates 2010). Apps like Voice Thread and Wimba Voice Board has been successfully experimented in blended classrooms and has been opined that these digital tools are of immense use as it can be used independent of geographical space and time, provide students with enough time to think and respond (Hew and Cheung, 2012). Voice thread can be successfully used to create online community of learning (Delmas,2017).
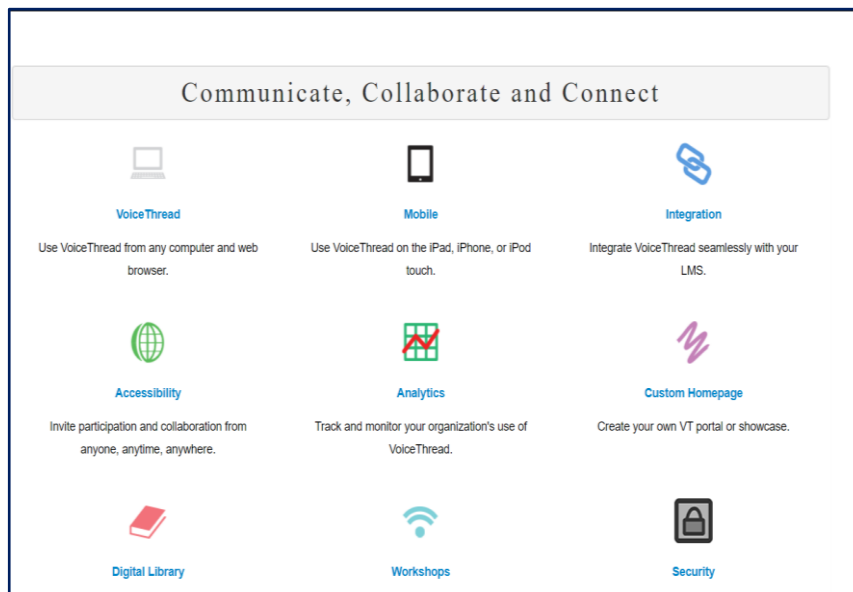
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Fig:06 Homepage of VOICE THREAD

Source: https://voicethread.com

SOCIAL MEDIA PLATFORMS

Learning in the context of social media has become an integral part of the academic experience (Grosch, Berger, Gidion, & Romeo,2014). It provides innovative ways for improving collaboration and communication in the classroom, thus raising pedagogical practices to a new level (Chan and Leung, 2016). It is a fact that students at various levels of education enjoy spending most of their time texting messages using a variety of free mobile apps, such as WhatsApp, Telegram, Snapchat, Facebook, Twitter, Signal, Slack etc. These kinds of digital platforms are being efficiently used as powerful tool to extend learning for blended classrooms by creating group chats to help the students for better communication and take greater control of their own learning (Annamalai, 2019). Teachers can make use of online chat rooms to motivate students for debate or discussion on the topic previously held in the class. Thus, discussions and collaborative learning activities can be carried on various interesting topics through chats.

WIKIS

Wikis are collaborative digital tools with structured pages interlinked in many ways and also linked with other internet sources. One of its special features is its 'open-editing system', in which the user is free to edit. It can be utilised for developing creative and collaborative open environment by providing freedom to share the knowledge or information by students. This collaborative tool can be used by students for carrying out discussions and adding related facts to enrich the content. The founder of first Wiki, W. Cunningham, opined Wiki as "the simplest online database that could possibly work".
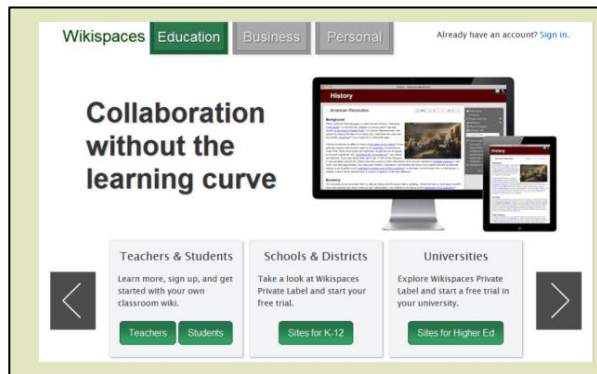
Fig: 07 Homepage of WIKISPACE

Source: http:// www.wikispaces.com/

Fig: 08 Homepage of WIKIDOT

Source: http://www.wikidot.com/education

There are number of WIKI sites which can be efficiently used by teachers for organising collaborative activities like WIKISPACES (Wikispaces.com), WIKIDOT (http://www.wikidot.com/) , PBWORKS (https://www.pbworks.com/) etc.

WIKISPACES are specially designed for classroom use, Wikispaces can be used as classroom management tool for collaborative activities for students. Itis free and has a variety of assessment tools. Various assignments can be created by teacher educators and also assist the students in this regard. It has a discussion board where pupil teachers can be motivated to share their ideas on any particular topic or even post comment on others work. This kind of digital spaces can be efficiently utilized by teacher educators holding discussions and also for training purpose.

CONCLUSION

Bringing Quality in Teacher Education programs through continuous professional development of Teacher Educators is the need of the hour and can be attained by proper hands-on training for acquiring latest digital skills. The execution of blended learning demands innovative pedagogy on the part of the teachers as well as variations in curriculum. The new practices of blended learning are to be included in teacher education curriculum to cope with the growing demands of the schools. No doubt, many academic training institutions at national level are playing a major role in this regard by organising capacity building programmes from time to time to empower the faculty by providing training. Its high time that teacher educators get empowered by attending such training programmes and make use of the latest digital tools, vital to carry out discussions and group activities to engage prospective teachers for better interactions and unveil their creative potentials in the actual teaching learning situation.

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