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Technology Mediated Learning in Higher Education: Orthodoxy of The Era

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Abstract: The English language classrooms have seen changes in teaching learning theories, approaches and methods. There was a shift from Communicative Language Teaching (CLT) of the eighties to Task-Based Language Teaching (TBLT) in the nineties. It was considered a shift from one pedagogy to another, but technology mediation in education in general is considered an external force that shapes our pedagogic principles and approaches. The Information and Communication Technology (ICT) which started serving educational sector by 1995, has evolved so tremendously that education without it is impossible. In the globalised context of English teaching and learning, the language classes operate on many theories and approaches with no specific focus on any one of them, because various theories and approaches seamlessly merge in a language classroom with technology as a catalyst, which, while strengthening the teaching learning process ensures learning outcome. This is a boon to higher education portals where digital natives are stakeholders. The ubiquitous presence of technology mediation in language learning makes it the orthodoxy of the era. This article studies the pedagogical perspectives of technology mediation in the language classrooms.

Key words: Higher education; Catalyst; Digital natives; Orthodoxy; Pedagogical perspectives

Introduction

During and after pandemic, innovative digital technologies have seamlessly blended with classroom teaching. Application of technology in various learning contexts is common these days that it is impossible to think about education without technology. Ever since, technology had been integrated into teaching learning, it was believed that it would surely change the latter's pedagogical perspectives. English as Second Language (ESL), English for Specific Purposes (ESP), Teaching English to Speakers of Other Languages (TESOL) and English as Foreign Language (EFL) teachers across the world have been familiar with the educational technology and its application in their field of operation. MOOC (Massive online open classes), Google Classrooms, Google meets, Microsoft streams, and online webinars conducted on the zoom platforms were the norms

during pandemic everywhere. We cannot but think about the innovative use of digital devices, especially the smart phones during the pandemic times to engage heterogenous digital native students in the Google classrooms.

The technology application/integration/mediation in higher education learning has transformed the routine norms of the classroom practices into new norms of higher education and is referred to as Technology mediated learning (TML). TML is eclectic; it operates with the assistance of various theories and approaches. It is termed as e learning, computer assisted learning (CAL) and after the introduction of mobile technology in the educational contexts as mobile assisted learning (MAL). When they are pragmatically combined and used in a traditional classroom setting it becomes blended learning (BL) and with the assistance of the smart phones when classroom practices are flipped to lure the learners into lively interactive discussions, then the learning becomes flipped learning (FL). The contexts of academic learning, the involvement of teachers, students, and the administrators of Edu-enterprises (Private Universities and other Govt. sponsored academic institutions as Educational Business Houses), and technology as a tool for providing and enabling access to education from anywhere and at any time necessitates an objective assessment of the technology mediation in learning.

The Challenging Trend

While recording the major trends in twentieth century language teaching, Richards and Rodgers (2019) say Audio-lingualism of 1960s gave way to Total Physical response, and Silent way in the 1970s. Then there were other methods like Competency-Based Language teaching, and Cooperative Language Teaching; with second language acquisition as a focus in 1980s, Communicative Language Teaching, Content-Based Language Teaching etc. thrived; but by 1990s, with Allwright, Stern and Bailey, analysing the second language classrooms and the teaching learning process, the teachers were awakened to the necessities of second language learners and looked for an alternative to Communicative Language Teaching (CLT) and hence the entry of Task-Based Language Teaching. The basic concern was the outcome for their teaching - the learners' ability to use the language outside the class; Task-Based Language Teaching, (CLT by another name) (Kumaravadivelu, 2006 p.64) holds good even today as the learners understand the form and function of the target language as they do a pedagogic task (Nunan, 1989). It remains in today's project-based learning that rides on content-based teaching with cooperative learning approach as an able partner while enriching the learners' cognitive ability. Problem-based learning and the use of authentic tasks have become an alternative to more content-oriented approaches to education (Oliver & Herrington, 1998). TBLT's methodological disconnect prompted Prabhu (1990) to authenticate post method era teachers that there is no best method and that what really matters is the need for teachers to learn "to operate with some personal conceptualization of how their teaching leads to desired learning" (p.172) which could be reliable.

To make the post-method era teachers more autonomous, and make their classes learner centred, Kumaravadivelu's (2003) macro-strategies, wish the teachers to maximise language opportunities, facilitate negotiated interaction, minimize perceptual mismatches, activate intuitive heuristics, foster language awareness, contextualize linguistic input, integrate language skills, promote learner autonomy, ensure social relevance, and raise cultural consciousness. Using these macro-strategies as guidelines, practicing teachers can design their own 'appropriate micro-strategies' or classroom activities, to devise for themselves a systematic, coherent, and relevant theory of practice" (Kumaravadivelu,2003; Kumaravadivelu, 2006: p 69). The ESL teachers have realised the significance of macro-strategies, micro-strategies and integrating technology in everyday teaching practices to facilitate outcome-oriented learning. "The advancement of technology and its forcible intrusion into higher educational institutions is, but an external force that shapes and reshapes our teaching practices. The present predicament of the higher education context is not that causes anxiety but one that constantly evolves to bring a shift in the pedagogic principles, teaching learning attitude and more importantly in the content and its presentation to the stakeholders of the Edu-enterprises" (Rajeswaran, 2021: p. 65).

The Learning Context

Rajeswaran, (2019) opines various interactions take place between the teacher and the learner in a classroom ; the classroom is a 'crucible' (Gaies,1980) – a place where the teacher and learners assemble to participate in the teaching learning process; but none of them come 'empty handed' (Allwright and Bailey,1991): the teacher brings her own knowledge and experience like the way she was taught, her own personal likes and dislikes, her attitude, etc.; the learners remain heterogenous with their aptitude, attitude, language, learning experience, learning style etc., and the course remains to be completed with its complexities. A language teacher could bridge the gap among the various elements of a classroom with her teaching strategies as well as the learner's learning strategies. The teacher's ability to fill this gap is considered as scaffolding function which happens with her assistance and through the learners' interaction with her and more knowledgeable peers in the class; thus, the experienced interactive communication gets internalised through practice. It is more like accomplishing an individual task as a collective and collaborative one with peer assistance. The technology mediation in online and offline classes is said to motivate the present day digital native students to get hooked into lively instructional discussions and hence in today's context the classroom that we speak about as 'crucible' is a smart classroom with all the ICT devices and apps that ensures interaction among the component elements of a language classroom.

The truth is that the classrooms which saw the technology integration in the last decade of the twentieth and the initial decades of the twenty first century are not the same in this decade. The structure of classrooms in the higher education learning contexts have drastically changed as smart rooms with Wi-Fi connections, white boards and built in projectors with exclusive laptops and desk-tops for the purpose of power point presentations. The evolution of classrooms of this decade owes much to the Information and Communication Technology. ICT includes "such technologies as radio, television, video, DVD, telephone (both fixed line and mobile phones), satellite systems, computer and network hardware and software, as well as the equipment and services associated with these technologies, such as video-conferencing, e-mail and blogs" (UNESCO, 2007 cited by Alkamel and Chauthaiwale, 2018). As tools of learning, it includes a wide range of devices and methods like virtual realities, social net-working-platforms, cloud computing, flipped classrooms etc., An umbrella term to govern all these activities and more like G-Drive, Moodle, Padlet, Blackboard, Edmodo, and Canvas is Learning Management System (LMS). LMS is useful in online learning platforms and web-based-learning environments. The language teachers exploit the Net Generation students' fascination for computers and internet. The teachers and the learners are construed to be tech savvy to adopt technology for learning and adapt to the changes in the learning environment with an open mind for a better learning outcome.

The computer assisted language learning (CALL) which used multimedia computers to access hyper media resources in a computer lab years ago, has completely changed with the use of personal computers, improvised digital devices like light weight, portable laptops, note pads, etc.; though CALL has its own advantages in education especially in technical subjects, the mobile phones have almost wiped away the former's importance in a language class. Unlike in a computer lab where students can hide themselves behind desktops, in a mobile assisted class the students remain fully within the sight of the teacher. The smart phones with inbuilt voice recorder, calculator, camera, note pad, music-player, etc., make the students feel proud of their possession. The learners are faster than their teachers in operating them for texting messages, net surfing, sourcing google pictures, videos and animations which keep them all the time active in social media. As for academic learning, the smart phones are equally helpful as ready-reckoners in a language class with e books and dictionaries available in them. Their light weight and portability have made them the most preferred among the digital devices. With the innumerable educational websites available on the net and the smart phone's ability to substitute laptops and communicate through WhatsApp Web, the teaching learning mode increasingly becomes more and more personalised (Rajeswaran, 2019: p 948-949).

As the contact hours between the teachers and students in universities decreased on account of Corona impact, the teachers found 'an alternative

practice' to engage the students in learning. It is a mixed mode learning/ adaptive learning because of its ability to integrate face-to-face instruction with computer-mediated instruction and mobile assisted learning (Famorca and Elivera, 2020). If adopted fittingly, blended learning can transform a higher education institution into a more accommodating, open, and responsive institution (Oakley, 2016); can swiftly address challenges and respond to opportunities in improving educational outcomes, extending accessibility, and reducing costs (Khalil and Ebner, 2017); can strengthen the communicative language teaching approach in a language classroom (Rajeswaran, 2019); found to be enhancing English learning process, developing language skills, and improving the English learning environment (Albiladi & Alshareef, 2019); maximising authentic input in order to support learners' output and skills development to achieve an optimal level (Marsh, 2012; Zhang and Zhu, 2018); in some aspects, it is multiple delivery media combined together and designed to complement each other to promote learning and application of learned behaviour (Singh, 2003); offers flexible, self-paced-personalised learning for the learners to enjoy.

Yet another integration of technology in the offline classes during post-covid because of the poor attendance percentage of the students and limited hours of institutional learning, is the flipped learning (FL). The conventional classroom setting is flipped or inverted to allocate more time for students' participation in learning activities (Ekici, 2021; Lin & Chen, 2016). Students use mobile technology to cross the boundaries of time and space in learning; access open educational resources (OER) from anywhere, at any time with mobile data or internet connection and return to the classroom to participate in discussions and correct their mistakes in the context of use (Koziniec & McGill (2015). It is a new learning model that supports students' learning (Egbert, Herman & Lee, 2015); advantageous to enhancing students' language skills, higher order thinking skills, learning engagement, goal attainment, motivation and autonomous learning (Gonzalez-Gomez et al., 2022; Huang et al., 2022)

The online classes conducted for distance education students by many universities utilise the learning management systems, to reach the learners who can be reached only on virtual mode. The virtual learning considered to be uninhibited learning, as the learners and teachers interact on the virtual environment which lacks physical dimensions but with self-directed adult learners, the teachers find them very cooperative and learning-focused. Even with young net generation learners in the off line classes technology has been supportive to the teacher's efforts for any interactions outside class; like guidance for projects, resolving students' difficulties, imparting additional learning resources, etc., to get access to a variety of learning resources through global networking and it has enabled teacher learner interaction in a positive way that both help each other in sharing information and passing the same to other needy educational communities. The rapidly advancing educational technology and associated pedagogical practices that largely benefit from Edtech tools have transformed the teacher centric classrooms into learner centric ones and the traditional learning into technology mediated learning. Artificial intelligence (AI) is a newly evolved tool in the Information and Communication Technology with the advances in technology.

Artificial Intelligence (AI)

Artificial Intelligence (AI) is an advanced machine learning technology which is integrated in industries and educational sector. With its potential for analysing large amount of data, it is helpful to administrators and academics. AI-driven tools, such as virtual tutors and chatbots, can support learners outside the class if they subscribe for that. In the facilitated learning contexts, AI enables personalized learning by adapting educational content to the specific needs of every student. AI tools can assess the strengths and weaknesses of the students through continuous monitoring. They use natural language processing algorithms to extract key information and paraphrasing texts by rewording complex sentences into simpler language. This reduces the cognitive load of the complex content; provides personalized learning solutions for students with varying disabilities and diverse needs. AI tools recognise speech, convert text-to-speech, and translate the same into different languages. AI can significantly reduce the administrative workload for educators by automating tasks such as grading, attendance tracking, and report generation. This leaves more time for teachers to focus on instructional activities and student

engagement.

The use of AI in learning has its disadvantages as well. AI requires software, infrastructure, and training which need large investments, so its use is presumed costly. Its over-use in academics would cost students dearly. It would make the learners less inspired to activate their skills for critical thinking, problem-solving, essay writing, or doing research. With biased algorithms the resultant documents cannot be fair. Technical problems like software bugs, limited internet access, may disrupt learning process. AI in education is apprehended as a risk to data privacy, equity, and the human touch, a teacher can give to learning experiences. However, when used thoughtfully, AI has the potential to make education more accessible, efficient, and customised. (Smodin editorial team, 2024)

The Millennial Students

Prensky (2001:1 as cited in Rajeswaran, 2019) describes the new group of students who have come into universities as new gen or digital native students and that they are basically different from those whom the educators had taught previously. They are familiar with digital devices and digital media as they have grown amidst them. By western standards they are said to have digital gene. In Prensky's own words, they have "spent their entire lives surrounded by and using computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age …. It is now clear that as a result of this ubiquitous environment and the sheer volume of their interaction with it, today's students think and process information fundamentally differently from their predecessors" (p.1). The peer interactions and the easy access to social media have made the students independent learners that they are not dependent on teachers anymore, at least for the purpose of operating digital devices, especially the smart phones. They are better poised to operate the digital devices than their teachers by being digital natives (Park and Burford, 2013).

They learn from a wide variety of educational technology contexts such as the use of wikis, blogs, social media, mobile applications, virtual worlds, learning management systems and so on. Their addiction to digital devices has impacted their learning style. Their learning has been through seeing, hearing, and experiencing. They learn easily from visual aids and materials. The power-point presentations hold their interest in learning with the aural and visual display. The classrooms have changed immensely with these tech savvy students that teachers need their cooperation to realise the learning outcome for the process of teaching and curriculum. Further, students' technological experiences must be supported with easy access to technology, course content and required infrastructure like e library to support their learning. They should be encouraged to focus on key areas of the course and spend time on learning the course fundamentals and their application in life and society; their learning should be experiential and project based while exploiting their interest in digital devices and social media.

Technology Mediated Learning (TML)

Technology- mediation refers to gathering and disseminating knowledge through technology use in situations which require effective teaching and learning. The days that followed pandemic have proved technology can support learning but can never substitute a teacher in a language classroom. This assumption acquires significance with the analysis of the technology integration or mediation – both the terms used interchangeably – in the face-to-face classroom contexts and on-line-distance education situations. The identification of theories and theoretical principles that govern the technology mediated learning (TML) need a close scrutiny.

Theoretically speaking, different terms are applied to the integration of technology in outcome-oriented learning situations. It is based on the Situational Learning Theory, Socio-cognitive Theory, Modelling Theory, Activity theory and Collaborative and Interactive Communication Theories and Approaches. The relationship between the various elements of the theorisation, as well as their distinctions, is visible in the technology mediated learning. The use of TML in active learning contexts acquire significance with the awareness of the teaching learning community about a need for an alternative to the theories and approaches for effective construction of knowledge within the authentic and meaningful contexts which offer opportunities for 'social interaction' (Vygotsky, 1978),

'discourse socialization' (Mortia, 2000) that activate the cognitive understanding of complex elements in learning material and make the learning process itself enjoyable and productive to ensure the realization of course outcome.

Technology Mediation in Learning is viewed through multi-perspective approach - TOP frame work; Technical perspective, Organizational perspective and Personal perspective (Linstone, 1989; Duggirala, 2013). Technical perspective includes access, adoption and diffusion of technology in education. During the early days of technology mediation in education, the economic conditions of the learners decided their access to digital devices. As for organizations, their size, public/private status, and location decided their rapid adoption and utilization of Technology mediated distance education. Ozdemer, et al., (2008) found the established universities could not adopt technology because of the organizational difficulties. But new universities with less students had good scope for distance education students and that they easily adopted the technology in their curriculum and teaching strategies. The diffusion of technology is identified in the present-day-trend of institutional web-sites and the uploading of streamed programs for the benefit of distance education students and the online coaching of day-scholars too.

The use of information technologies in education in general is "being based on such organisational factors like opportunity, competition and efficiency. When such imperatives are driving change in a learning context, the applications of learning technologies are additive strategies to the existing strategies and methods which see existing strategies and methods being complemented by technology-oriented initiatives" (Oliver and Herrington, 2000, p. 178). Such initiations redefine and transform the more fundamental aspects of teaching and learning pedagogy itself (Collis 1997). As for the personal perspective of TML, it relates to learning outcome (Webster and Hackley, 1997) and to course satisfaction (Arbaugh and Duray, 2002).

Oliver and Herrington (2000) give a set of nine guidelines for instructional design process operationalising situated learning elements in a computer based learning environment: the teacher must support the learning with links to resources which reflect the perspectives of real world around to provide enhanced learner autonomy; the related real-world modelling as audio-video technical support and project-based-learning/problem based learning as a method and environment, ensures the socio-cognitive perspective of the practice in a situated learning setting which is realistic, and context-relevant (for real world encounters); the learners may work in groups to collaborate knowledge construction and to learn from one another as learning becomes a co-operative and collaborative venture; as a model based approach it initiates the learners to learn from the experts and knowledgeable peers in an authentic context.

With reflection as a learning strategy, the learners benefit as they indulge in reflecting on the process of the activity and its outcome. In the process they compare themselves with the experts and peers for a positive improvisation which leads them to take stock of the various stages of accomplishment. The next stage of reflection is articulation for the learners to explain their understanding and constructed meaning. By participating in debates on confronting views, the learners engage themselves in authentic contexts of learning from one another, and the tacit knowledge becomes explicit. All of these activities as done in a situated learning setting with a teacher as a guide and facilitator, and at critical times of learning, the teacher scaffolds students' learning with the use of complex, open ended learning environments, where the able partners in collaborative learning environment take charge of scaffolding and coaching their less knowledgeable peers (p180-182). A teacher's role in online learning context becomes less direct; she needs to provide not only resources of her own and downloaded from websites, but also needs to engage the students with web-based activities. This apart, the in-class instructional designs and those necessary for technology mediated teaching learning process, must be taken care to facilitate cognitively engaged learning among the students (p.183).

The Curriculum for the Purpose

A curriculum in any learning context is the blue print or a "planned phenomenon that remains watchful about the outcome of the course of study" (Hicks, 2007) and "planned learning opportunities offered to learners" (Print, 1987). Higher Education Academy UK 2007 as cited by Hicks (2018) states a realistic and applicable

curriculum framework must include the following five components: 1) What is being learnt 2) Why it is being learnt 3) How it is being learnt 4) When and where it is being learnt 5) The demonstration that learning is taking place.

This five-component approach is apt in the post pandemic environment, wherein the learners and teachers are motivated by a new norm of technology mediated classroom learning. The classroom culture of more academic freedom to learners in the use of digital devices and possible inclusion of external resources to enhance the teacher's teaching skills to engage the learners in what is being learnt i.e., the successive learning to what was previously learnt; why it is being learnt is to bridge the gap between the previous and future learning and to lead gently towards the realisation of the outcome of the course. How it is being learnt is the teaching learning process, which is a combination of teacher's guidance and facilitation which stimulates the learners to observe and formulate a cognitive behaviour; when and where is learnt pertains to the different levels/ grades of learning contexts and the technology embedded environment; the demonstration that learning is taking place is done with the test and assessment instruments that the teacher employs in the form of formative and summative assessments. For Hicks (2018) the fifth component of the curriculum as assessment is a step towards recognising it as a critical part of teaching learning process and that it has to be considered along with the curriculum design.

Oliver and Hyun, 2011 profusely cite Stark and Lattuca, 1997, Burgess, 2004, Hyun,2006; 2009, Hubball et al., 2007 and Seymour, 1988 to substantiate their views on curriculum designing/review/reform. They say the learning outcome, a curriculum visualises or desires is the result of three major influences such as external influences, organizational influences and internal influences (Stark& Lattuca, 1997, p.331, (as cited by Oliver and Hyun, 2011). External influences include society, government, alumni (Stark& Lattuca, 1997, p. 98-100) and presently the global employment opportunities as well; the organizational influences include financial stability, a shared vision and an appropriate organizational infrastructure; per se considered as barriers (because of the human behaviour of the individuals involved) understanding of a common mission of the university or the institution (which is difficult in the decision making process) (Burgess, 2004, Hyun,2009). Internal influences such as the change agent or process leader (normally, the Dean in the department who is in charge of curriculum design and review), the leadership team, faculty involved in the curriculum design and the larger community of the entire staff handling the program and the curriculum implementation. As noted by Oliver and Hyun (2011), the organization must identify a responsible facilitator (leader) who can mobilize stakeholders through open dialogue and various communications and "spearhead the redesign and implementation of a learning-centred curriculum" (Hubball et al., 2007, p. 99). The administrative individuals must have strong administrative ability, leadership skills, and political skills (Seymour, 1988) as well as a good understanding of what curriculum is and does for learners individually and collectively (Hyun, 2006).

For Oliver and Hyun (2011) a curriculum is a shared governance and responsibility and engaging the educational community in the curricular change efforts would create a common vision and a culture that supports the institution's educational efforts and that the administrators may think ahead of time to facilitate effective curricular change. Further they add willing participation of different groups within the institution as collaborators in the designing, implementing and review process would effectively bring organizational change. In their view this kind of collaboration and involvement of faculty, students and administrators would help in identifying the cultural barriers caused by people and structure. Finding and identifying the barriers would inculcate a sense of belonging and connectedness among the different segments of a university to make them feel as one team.

The change agents, the designers of curriculum must come forward with a meticulous understanding of the syllabus and material, give a clearcut allocation of time for tutoring, practice and assessment. The technology mediation in the form of visuals and audios to be viewed and listened to either with teacher's assistance in the classroom or with peer assistance in the private comfort at home may be suggested for reference. The curriculum must specify the time for tutorial, practical, reviewing and reflection of the learning process and outcome in the classroom. The vision of the curriculum

should be focused on team building and cooperative learning. In other words, student factors, context, experience of coherent learning focused activities and outcome must be part of a curriculum. This would ensure quality assurance to the higher education and would certainly enable the students to be part of the global community.

In the globalised context, it is needless to say that the university curricula must 'resonate with agendas and challenges that are trans-national in character if not actually fully global' because the curriculum designers may think globally and give space for teachers to act locally. The need-based curriculum must create a culture of trust within the organization; the administrators must dedicate the institutional resources to the curricular change during the development phase and implementation phase; only then a pragmatic curriculum which can include the culture of the institution, the culture of the national system of higher education, the culture of academic profession, and the culture of the discipline will emerge (Oliver and Hyun, 2011).

The lack of a syllabus or specification of content that would enable outcomes in any curriculum would be problematic. For example, the 'Backward design curriculum' incorporating competency-based/outcome-based learning advocated by Common European Framework for Reference for Languages (Council of Europe, 2001) did not refer to the process and inputs required for effective outcome of the course. The lack of a syllabus or specification of content that would enable outcomes in CEFR was found problematic and hence the creation of English profile (English Profile, n.d.) which defined the level of proficiency at each level offering clear benchmark for progress that will inform the curriculum development, development of courses and test materials to support the learners, teachers, and other professionals involved in the learning and teaching of English as a foreign language (Richards, 2003 as cited by Richards and Rogers, 2019).

In the post method era of technology mediation, the change agent teacher's understanding of the context in which she or he is working, the systematic analysis of the learners' needs, the large-scale curriculum framework of a national education system decide the curriculum design and development while the process of implementation with the required educational technology can be decided by the teachers in charge of the curriculum implementation; it can be done only with the administrators' support with the available financial infrastructure; the methods and materials the curriculum implementing teachers use in the process will ensure learning outcome only with the learners' willing participation (Richards, 2003; Richards and Rogers, 2019). Demonstrated standard of curriculum signifying the use of technology in teaching and assessments and allocating the required time for each pragmatically will make the mediation of technology in the instructional materials and instructional practices successful.

Resources

The academic community has been using the world wide web (WWW) to search for educational resources and post course content. Hypertext Markup Language (HTML) is used for creating and editing text, images, and other contents which are to be displayed on a web page. Once they are displayed, they become open educational resources available on the websites which could be accessed through net surfing. They include textbooks, videos, and modules which are digitised and offered to teachers, students, and self-learners for the purpose of teaching, learning and research. OERs are posted by educational institutions and emerging business houses which float many online courses. They function on the concepts of openness, collaboration and sharing using resources available on the web but with certain restrictions. These are teaching, learning, and research resources that are open to public but released under Creative Commons license which allows changes and modifications to the original text but demands attribution to the original writer. Because of this, OERs are never outdated but always remain updated by global contributors (University of Leeds n.d).

Most university teachers create digital learning objects which are small, modular, discrete units of learning designed for electronic delivery and use. They are formatted to have a lesson, an activity, and an assessment. These objects are useful for online and offline students. As reusable learning objects they have a focus on learning outcome. (CSU Northridge Oviatt Library, 2017, p. 1). Teachers find short period animations, videos and podcast quite attractive as

they give ample scope for display in face-to-face classrooms or virtual classrooms; teachers can also make alterations with their own additional material or delete certain portions to suit the standard and need of the learners. The videos and power point presentations available on the free websites are so different from commercial YouTubes, that they can be downloaded and if required can also be changed to cater to the needs of courses and learners. Now a days, the universities and autonomous institutes maintain a Learning Object Repository where videos on different subjects are uploaded. Online digital libraries like World Digital Library (WDL) are available on the Internet, free of charge and in multilingual format too which include significant primary materials from countries and cultures around the world. The teachers help their students to access them providing their links (IUP library guides, n.d).

Many teachers embed OER material into classroom sessions, practical classes, workshops, seminars and/or provide links to OERs via the virtual learning environment to enhance students' self-directed learning opportunities. Teachers who create OERs, amass external recognition for their learning and teaching activities and the promotion of their institutions, while the original creator and their students benefit from any improvements or additions. In addition, use of appropriate OERs can enhance the student learning experience and address learners' specific needs by giving students access to media-rich materials or resources that individual staff or institutions are unable to provide. Teachers need to help students to search for, critically evaluate, use and reference high quality and relevant open educational resources, which in fact, is an important and useful skill.

The faculty of universities across the world create high quality educational materials for their online distance education students and they are posted on their university websites; These are used by the universities' regular students and self-learners and are known as Open courseware materials (OCW). As they address learning needs of online distance education students, they are arranged as course wise contents with planning materials and assessment tools (Open Education Consortium, 2017, para. 1).

Online Learning modules are course content presented in a sequential manner, with the assessment formats as decided by the teachers. Educators include formatted text, files, web links, discussion prompts, assignments, tests, and quizzes, along with forthcoming assessments which necessitate a systematic and sequential learning for the learners to go through the content; a place is allotted for students to add content to the learning module; these again are meant for distance education learners (University of Florida e-Learning, 2013, para. 1).

During pandemic and afterwards, the virtual classes have not only replaced the physical dimensions of a brick-and-mortar classroom but also printed paper books with e books that can boast about their eco consciousness (Rajeswaran, 2021). Not all e books are cost free but those produced and displayed by faculty and published on the web with the support of universities or emerging book houses are called open text books and they are cost free (California State University, 2012, para. 1; IUP library guides, n.d). They are so helpful that the classroom learning is flipped for discussions and power point presentations to expose the researched resources.

Teaching Learning Process

The academic senate for the California Community colleges (1996-97) adopts the seven principles for good instruction (Chickering and Erhmann, 1996) for using technology for its guidelines to community colleges; it informs how technology can be used for effective information transfer in a technology mediated classroom. For them technology is an educational tool which enhances the instructor students contact; saves instructional time and enhances the interaction between the teacher and the learners and that among the learners themselves. As an additive strategy it adopts active learning techniques; ensures authentic and immediate feedback and allows diverse talents and modalities of learning while being 'another modality' of teaching which must be treated on par with 'other modes of delivery' (p 2-8).

Technology mediated classroom functions on the model-based approach when it resorts to the use of video, multimedia, or web-based instruction along with the teacher's meticulous planning and a curriculum to support it. The material used must relate to the students' previous knowledge, course content, and be ready to offer a logical sequence to the content already learnt.

The illustrations and colourful slides with interactive exercises will make a teacher's 'input comprehensible' (Kreshen,1985), as the digital native learners are mostly visual learners. The flipped classrooms as part of blended learning may spin instructional conversations around the content related web and internet sourced materials, materials shared through emails and the innumerable Edu-videos available on YouTubes. They can sustain students' attention in regular classes also as they foster interaction in a learner centric mode while the teacher herself can realise the force of technology driven learning. The technology driven learning environment necessitates technological applications in the content for learning. The content transmission and learning facilitation is what matters in students' acquiring knowledge and application of the same in practice. Though a video or a multimedia can facilitate knowledge transmission easily, 'interactive exercises', 'instructional conversations' (Tharp and Galimore,1989; Revel, 2004). initiated in a brick-and-mortar classroom or virtual classroom makes the difference with a human touch.

The selection and presentation of a content should stimulate an enthusiastic learning behaviour of the stakeholders. A teacher may rely on net sourced materials or that created by her own self to enhance her teaching skills and for the benefit of the students. The Netflix or Prime videos come handy for watching a movie adopted novel or a short story and a review session. The teacher needs to do the ground work to motivate the students to watch a movie and be critical about the characterization, dialogues, their presentation, and social relevance. The students should be encouraged to give oral review after writing down in their journal. As members of online reading resources, the students can read a number of books free of cost. Such activities may directly influence the learners' language proficiency. Disseminating information and knowledge is the basic requirement for motivating students to be part of a classroom interaction. Sufficient reading and listening activities embellish knowledge and equip them for lively discussions on a variety of topics.

The online learning platforms and blended learning approach to facilitating learning have transformed the way the students learn and interact with peers and teachers. The contact between the teacher and students is a key component in teaching learning process. In this context many academics find Web-based education can successfully simulate face-to-face teaching models, while adding some unique features made possible by the technology. To be successful, however, this simulation requires adjustments in many areas, including student assessment, faculty training and expectations, and student expectations and motivation (Aggarwal RK and Bento R, 2002). As Technology mediation is considered as another mode of delivery and another tool in an instructor's kit and its potential may be fully realised only when handled by qualified and trained teachers (Academic Senate for California Community Colleges Technology Committee, 1997).

Assessment Practice

A pedagogical task may fail to realise its purpose if not assessed properly; the assessment should engage a multicomponent framework which could consider a student as a performer and participant of a group activity which is a pedagogic task (Nunan 1989). The task can ensure the learners' active participation and the production of the language that conveys learners' comprehension of the content and concept. Students' oral or written response to a test construct helps the teacher assess their performance in terms of their ability to expand the learnt knowledge on the test instrument as an output for evaluation. "Authentic assessment requires significant student time and effort in collaboration with others, and as with authentic learning activities, requires complex, ill-structured challenges that involve judgment and a full array of tasks with the assessment seamlessly integrated with the activity" (Oliver and Herrington, 2000: p182). When students are successfully stimulated to learn with web resources, the same can also be assessment tools. "The technology and language learning strategies introduced in the English for Specific Purpose classrooms offer wide scope for assessments in content and language integrated learning contexts of university education" (MC Rajeswaran 2019: p 90).

As the teaching pedagogy adopts integrated language skills approach in a language teaching it is appropriate to subject students' oral proficiency to an integrated language skills assessment with technology as a partner. In a content-based learning environment, the projects-based learning or problem-based-learning,

must be assessed with a power-point presentation; the process of learning is expressed by the learner as a group member and as an individual while the credit is assigned to the individual, the accrued credit of all the members of a group is for the whole group. For written and oral assessments, it may be remembered, Graduate Record Exam (GRE) and the Test of English as a Foreign Language (TOEFL) have adapted Computer Based Testing (CBT). It helps test developers to set the same test conditions for all participants by standardising test administration conditions. Such an assessment is valid and reliable. Validity in assessment practices refers to the purpose of the test and whether the purpose is achieved or not. Reliability refers to the consistency of assessment procedures (Rajeswaran, 2019).

Assessment must be focused on finding out the sequential process and ultimate aim of any learning activity. The complexity of assessment may change with the need of the curriculum that the learners learn. Learning design includes assessment practice designs as well. Therefore, assessment literacy is seen as an important professional knowledge and capacity a teacher should possess (Ya-Ching Fan et al, 2011). The researches done across the world offer a wealth of advice on designing Computer assisted and Web-based-assessment systems to assess students' learning outcome. The experienced and novice teachers in the higher education domain need to enhance their digital skills and familiarise themselves with the latest advancements in the educational technology to meet the challenges in facilitating learning among the students and assessing their learning outcome in the technology mediated environment.

Digital Competence to Meet the Challenge

The online spaces and web-based resources have proved their ability for engaging students in instructional conversations and discussions in a classroom and motivating the students to be self-directed autonomous learners; they not only provide meaningful content relevant to learners' needs and interests and learning styles but requires teachers to be digitally competent Hafner and Miller, 2011 as cited in Rajeswaran, 2019); the newly adopted digital literary practices and the use of digital devices for language teaching demand teachers and students to be digital literate to operate the digital devices and digital competent to use them with significant speed. Digital competent teachers can bring digital media inside the classroom for parallel learning outside the classroom and to conform to students' digital inclination and necessities in the classroom (Rajeswaran, 2019). Further, Digital skill can empower the teachers to check the teaching and learning process in terms of course outcome attainment and the learners' difficulty in understanding the input, to modify the content and process for improved comprehension and cognition. By imparting valuable digital training to the teachers, the administrators need not complain about the inefficiency of teachers to meet the challenge of technology intrusion. Universities, and teacher training institutions across the world must organise digital skill workshops and Faculty Development programs for this purpose. The digital immigrant teachers will no longer speak an out-dated language but will also understand the new language of the digital natives and communicate with them with ease (Rajeswaran, 2019: p. 955).

"The overall technology use squarely rests on a teacher's ability to utilize the technology in the classroom; so, the lack of it becomes a major hump in technological device application and integration in teaching learning process" (Rajeswaran, 2019: p 950). Teachers' attitudes toward technology use, the learners' proficiency level, teachers' digital skill, technology accessibility and the cost involved will decide the use of ICT in language classrooms (Sharma and Barrett, 2007). However, Kirovska-Simjanoska (2016) warns that the efficiency of in class and off-class learning depends on 'students' initiative and motivation'. Further, in today's technology embedded context, students' willingness to adapt themselves to the rapidly evolving technology is necessary for them to collaborate with their peers and teachers and interact for deeper understanding to make learning participatory and self-motivated.

Conclusion

We have certainly come a long way in identifying and understanding the crux of the present trend of technology mediation in learning. Technology mediated learning is an alternative mode of delivery, another tool in the instructor's kit that could enable good teaching if handled with diligence and in appropriate

manner (Academic Senate of California University, 1996). As we reflect over our past experience, we realise technology as an able partner has transformed the monotonous classroom learning into participative, cooperative, interactive learning wherein the students as stakeholders take responsibility for their learning and upskilling. Such deep learning and personal engagement with content material is important to prepare students for a global profession that must keep pace with the dynamics of its environment. The 'techno-space' despite its 'wide penetration' into the changing tracks of language pedagogy and its 'uncharted capabilities' in the teaching learning trends of the present times "is an unregulated environment for learning by virtue of its vast resource of knowledge" (Roy and Putatunda, 2020). More than ever, the challenging part of the present technology embedded context is to equip our students to face the new environment in which technology remains an integral part of the curriculum and naturally gets integrated in the teaching learning processes.

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