

CHAPTER 2

COMPREHENSIVE REVIEW OF RELEVANT LITERATURE

2.1 Introduction

“If we teach today as we taught yesterday, we rob our children of tomorrow”
-John Dewey

Over the past two decades, the world has become heavily digitised with the advancement of technology. Technology has changed the perception of people and society towards it, and it has also brought changes in the method of teaching and learning throughout the world. The widespread use of technology in every field including education led to a growing number of learners and teachers using digital mediums. Digitalization in the field of education has changed the education pattern and it has shifted from teacher-centric classrooms to student-centric classrooms. The change in education is gradual and mandatory as today's students are comfortable with technological tools and they use technology now and then.

Technology has transformed the perception of education in the past few years along with the phenomenon of learning and education. The use of technology and the widespread use of mobile phones come with the new wave of teaching and learning globally. Technology has been introduced in education gradually, earlier it started with radio and television then moved on to the computer and the internet, now education and learning can take place with mobile phones which are one of the advanced tools of technology. “In the past decade, the use of the computer and related technologies has expanded from use primarily as an instructional delivery medium to technology as a transformational tool and integral part of the learning environment” (Fouts 09). The traditional method of teaching and learning is aided with technological tools and technology is advancing day by day from radio and television to internet-connected devices like computers, laptops, and mobile phones “from the earliest days of correspondence courses to the days of electronic course delivery through radio, television, and satellite, to the more recent developments of electronic course

delivery via the Internet, educators” (Fouts 23). Many digital devices help the advancement of education such as television, electronic boards, overhead projectors, mobile phones, and application-based learning.

The education system in our country has been introduced with the traditional learning method over the years, it is only in the recent past with technology and digital media that technology-based learning has been introduced in the Indian education system. Mobile phones offer an opportunity where languages can be learnt anywhere and anytime. The ubiquity of m-learning gives the flexibility of learning with time and location, it makes mobile learning preferable, and the portable size of the device makes it easier to carry anywhere.

The advancement of technology allows learning to be virtually operational from anywhere and learners can store files, documents and audio videos on mobile phones which makes it easier to learn wherever and whenever one gets time. With the e-files and the availability of virtual libraries and books, it becomes easier to carry just a portable device and all the learning resources stored in it, rather than carrying piles of books. MALL gives the freedom to learners to save time with multi-tasking like one can study while travelling and can study during breaks while at work. M-learning helps students to be less dependent on the classroom.

Technology-based learning results in student-centric classrooms contrary to the traditional classroom which are more teacher-centric. “Technology implementation in educational settings has changed pedagogical beliefs of teachers and shifted classroom instruction from teacher-centred to student-centred” (Serin 01). The use of technology in the education sector for teaching and learning the English language has increased steadily over the years. Nowadays the curriculum also demands technological resources for teaching and learning a language. “The usage of internet, digital boards, smart boards, e-books, e-libraries, laptops, tablets, iPads, OHPs, televisions, mobile phones, smartphones and so on has become common in the present-day education system” (Rao 193), digital devices for educational purposes include computers, laptops, tablets, mobile phones, iPads, iPods, overhead projectors, and electronic boards among others.

These days, people of all age groups, especially the youth are seen spending much of their time on mobile phones. So, mobile phones play a vital role for youngsters in their lives. They are more comfortable with mobile phone learning. In this era of technology, integrating technology into learning is inevitable. Technology and mobile learning play a significant role in English language learning. Many studies have been conducted in context with mobile learning and MALL which indicates the increase in popularity of m-learning and the benefits of m-learning in English language teaching and learning. “Among the portable technological tools, mobile phones are the most commonly used devices for learning” (Azli et al. 84-85). According to Azli et al. a study in the UK was conducted by Pęcherzewska and Knots under a project funded by the European Union from 2001 to 2007 about m-learning in which it was analysed that mobile phones have become very popular among users. They are the most frequently used devices. Mobile learning is preferable because mobile phones are available “anywhere, anytime” (Kukulska-Hulme and Shield, An Overview 273) and are easier to carry because it is smaller in size, wireless, and easier to access at will.

A survey was conducted by the Malaysian Communication and Multimedia Commission (MCMC) in 2008 and the result revealed that “the main users of mobile phones were those between 20 to 49 years” (Azli et al. 85). People of the age group between 20 and 49 prefer mobile learning as the youth of this generation is more tech-savvy. Post Covid-19 lockdown, everyone started to use mobile phones for teaching and learning purposes as schools and colleges operated remotely for almost two years in India. Teaching was conducted through online mode only and that changed the perception of many teachers, learners and parents who were sceptical about learning through mobile phones. They tried learning on digital devices for the first time and many tutors and learners found it a convenient tool for teaching and learning. In spite of this, some of them were not convinced with this technology and expressed concerns and reservations.

This chapter reviews the relevant literature about the role of MALL in English language learning, its uses, advantages, and challenges while learning a language through mobile phones. The chapter reviews the previous research in

the field and finds the research gap. This chapter discusses details about mobile learning, its history, evolution, definitions, opportunities, needs, and challenges related to mobile learning. The chapter also aims to review relevant literature about mobile and digital learning. The chapter then focuses on the use of mobile learning during a difficult Covid-19 lockdown, the challenges faced by the learners and the outcome of ubiquitous learning.

An attempt is made to review the available literature related to the subject. There is much research done on the related subject, but there is a major focus on mobile learning and e-learning rather than mobile-assisted language learning for the English language. However, the researcher has tried to access and review the maximum available literature related to the subject.

2.2 Role of Technology in Teaching and Learning of English Language

Technology brought tremendous changes in the field of education which include teaching and learning a language “in recent years the pace at which new technologies are becoming available has increased rapidly” (Westera 174). Technology has changed the perception of society towards education leading to an evolution of the education system. It is important to bring a change to draw the attention of students in the learning process (Rao 193) stated that, with time, teachers are adopting new methods and approaches of teaching, by changing their age-old practice of traditional learning, the new method of teaching is a learner-centred method which emphasis on the needs and interest of learners. The use of ICT tools and technology in schools and colleges has increased in the last few years as teachers find fruitful results in integrating technological tools in education and language learning “ICT-enabled teaching-learning encompasses a variety of techniques, tools, content and resources aimed at improving the quality and efficiency of the teaching-learning process” (National Policy on ICT In School Education). The tools of ICT include computers, mobile phones, projectors, television, and digital boards and then “the Internet impacted technology use” (Fouts, i), The availability of a wide variety of technological tools used in teaching and learning “will catalyse the transformation of classrooms into ICT Enabled classrooms” (National Policy on ICT In School Education, point 4.3.1). ICT tools in classrooms update the infrastructure of classrooms.

In the year 1999, when the Internet and mobile learning were not so common, computers were considered the most advanced technology utilised for educational purposes. A national survey was conducted during that time, by the collaboration of *Education Week* with the Milken Exchange and the findings revealed that 97% of all surveyed teachers, “use a computer for educational purposes, either at home or at school, and 53% use software for classroom instruction” (Fouts 01). It was in the year 1999 when 97% of surveyed teachers used computer technology. Today after almost two decades internet and Wi-Fi connections are very common and more economical and most adults carry their devices; education through technology has gained more popularity, is commonly used and is far more convenient.

The use of technology varies from one classroom to another and one teacher to another, it has been divided into categories as follows:–

- **Technology for instructional preparation:**

The instructional theory is the design and preparation of learning activities and classroom materials by teachers for students, Seels & Richey defined instructional technology in 1994 as “instructional (educational) technology is the theory and practice of design, utilization, management and evaluation of process and resources for learning” (Hains Ann et al. 132). Instructional technology creates effective and engaging learning.

- **Technology for instructional delivery:**

The second category is the use of technology for instructional delivery. The way a teacher guides students using technological tools such as teaching with a digital board, projector or laptop is an integration of technology and the latest technological tools in teaching such as laptops, computers, mobile phones, tablets, I-pad, overhead projectors, e-library, and interactive whiteboards.

- **Technology as a learning tool:**

The third category of technology as a learning tool is about how learners use technology to enhance their learning skills and communicate with

each other using technology. Everyone is conditioned to these devices, and they expect quality education with technology-enhanced learning, “the pressure on education is high, new technologies are flooding the markets, and learners, be it, schoolchildren or adult professionals, expect high quality, flexible, modern and tailored learning services” (Westera 175) It includes a wide range of digital tools.

From the past to this day, technology has seen many phases in education, beginning from radio and satellite to mobiles and the internet, digital technology has created various opportunities for change and supported a new way of working and learning. “There is a comparably radical effect on the act of learning” (Laurillard 05), in future also there will be the introduction and development of new technological devices that will keep flourishing in the education sector. “The technology opportunities for new kinds of teaching and learning will continue to develop” (Laurillard 05), language learning will become more interesting with the new devices and new patterns of learning.

There are two major sets of technology for language learning purposes:

2.2.1 CALL: Computer-Assisted Language Learning

CALL was defined by Levy (1997) as “the search for and study of applications of the computer in language teaching and learning” (Pirasteh 1422). “The term CALL refers to an educational approach characterized by the presence of computers as supporting elements in language education” (Palacios-Hidalgo 121). The term CALL stands for Computer Assisted Language Learning.

CALL enfolds any applications of Information and Communication Technology (ICT) to teaching and learning foreign languages. Davies and Higgins in 1982 mentioned the two different terms for CALL that were used before the early 1980s (Tafazoli and Golshan 32):

- CALI (Computer-Assisted Language Instruction) and
- CAI (Computer-Assisted Instruction)

Later the term CALL abbreviated for Computer Assisted Language Learning came from the field of Computer Assisted Instruction (CAI). ELT teachers preferred the term CALL because the computer itself can play the role of a

teacher and can guide the learners, “technologies now equip computers with multimedia functions, incorporating video, sound, and text, and these capacities allow the learner to interact with both the programme and other learners” (Torut 131). The term CALL is used by teachers and learners to “describe the use of computers as part of a language course” (Gündüz 197). According to Levy & Stockwell, 2006; Palacios & Espejo, 2019, “The objective of CALL goes beyond a mere use of technological tools in the language classroom, as it consists of establishing a digital environment that promotes a natural like language learning process” (Palacios-Hidalgo121). Language learning became easier with computers and other digital devices.

The computer was introduced for educational purposes in the 1970s. Since then, there have been several advances in computer-based learning. According to Warschauer, CALL development was categorised into three phases:

- **Behaviouristic CALL:**

It was adopted in the 1950s and implemented in the 1960s and 70s. This was the time of drill and practice, such as grammar and vocabulary drills, and translation tests (pejoratively, as drill and kill). The approach for language learning was rejected on both theoretical and pedagogical basis (Warschauer 57).

- **Communicative CALL:**

According to Warschauer, it emerged in the 1970s and 80s. “Communicative CALL corresponded to cognitive theories, which stressed that learning was a process of discovery, expression, and development” (Polat 18). In this phase, students were stimulated to use CALL activity for writing, discussing or critical thinking rather than answering correctly.

- **Integrative CALL:**

It emerged in the 1980s and early 1990s. “Task-based, project-based, and content-based approaches all sought to integrate learners in authentic environments and also to integrate various skills of language learning and use, which led to a new perspective on technology and

language learning” (Polat 19), integrative CALL was based on two important technological developments- multimedia and the internet. A variety of media is allowed in multimedia technology which includes graphics, animation, audio, video, and text, and all of these can be accessed by a single device or machine with the internet used for sending and receiving emails and the World Wide Web which is WWW.

Currently, there have been many changes in CALL from the beginning to this day with novel innovations every day. With time, computers had both physical and mechanical changes, mechanically it has grown too much “the era of limited access to desktop computers with a few basic mechanical “drill and kill” software programs is long gone in many contexts. CALL has grown to include online blogs, use of apps, virtual learning environments, computer-mediated communication, among others” (Jarvis and Achilleos 02). Physically, computer devices have become lighter in weight, wireless, portable, and easier to use.

Gündüz in his article Computer Assisted Language Learning: CALL, talked about the role of computers in language learning and stated that the introduction of computers with the internet in schools has created a new perception for language learners. “At the end of the 20th century, the computer-mediated communication and the Internet have reshaped the use of computers for language learning” (Gündüz 194) and Gündüz argues that at present, language learners prefer digital devices. Recent years witnessed a rise in the usage of computers for teaching and learning a foreign language. There was a blackboard and chalk system where the control of the lesson rested with the teacher but now in the era of digitalization, all the linguistic material and instructions for its presentation must be specified by the teacher. It is the teacher who decides what degree of control the computer will have in her/his classes. So, the teachers need not sense a threat to their vocation to the computer as CALL also needs the teacher’s assistance. CALL lessons, like other lessons, need to be planned carefully, it is just that CALL provides flexible classrooms with wide opportunities.

There are many advantages of CALL, seven of them mentioned by Warschauer and Healey in 1998 are: “Multimodal practice with feedback; individualization

in a large class; pair or small group work on projects; the fun factor; variety in the resources available and learning styles used; exploratory learning with large amounts of language data; and real-life skill building in computer use” (60). These all could be possible with CALL.

2.2.2 MALL: Mobile Assisted Language Learning

MALL is an approach to language learning with mobile phones such as PDAs, smartphones, and tablets, it provides easy access for learning a language “Mobile learning is characterized by its potential for learning to be spontaneous, informal, personalized and ubiquitous” (Miangah and Nezarat 309). Learning through a mobile phone is integrating technology for educational purposes and learning a new language. Nowadays, technology plays a major role in education and language learning. Mobile phones for teaching and learning are considered a tool of ICT as “ICT has tremendous potential to accelerate the learning of a wide range of knowledge and thinking skills of students in school” (Wen 01). ICT, all over the world plays a vital role in the education sector.

ICT is a tool for quality education, it provides wider resources for teaching and learning, makes learning easier, and more interesting and improves the thinking ability of students. One of the important ICT tools that are commonly used for teaching and learning is the mobile phone. Mobiles were introduced in education almost a decade ago but now it is more commonly used. Mobile learning devices are tablets, smartphones, PDAs, i-pads. A few of the many advantages of mobile phones include that the device is personal, commonly used and can be carried anywhere and used anytime, “main characteristics of mobile learning, such as permanency, accessibility, immediacy, interactivity, situating of instructional activities” (Grönlund and Viberg 01). There are many advantages of mobile technology for learning purposes such as affordable in cost, flexibility, portability, wireless, user friendly, and pocket size, “researchers are exploring how to use mobile technology to support language learning” (Grönlund and Viberg 01). Mobile learning can also be used as a digital aid with traditional modes of learning.

The English language has always been considered an important language for higher education and reading and listening comprehension are the first important aspects of learning the English language. Listening and reading comprehension develop speaking and writing skills in the English language. According to (Wen 01), a mobile phone is an effective tool for learning a language. Researchers believe that mobile phones aid in enhancing students' language learning skills in all four modules - speaking, listening, reading, and writing.

New users are attracted towards mobile technologies which provide "increasing capacity" (Viberg and Grönlund 01). "A recent rapid advancement in the capabilities of mobile devices along with a decrease in price has enabled the mobile phone to become ubiquitous" (Pollara 01) as "always on characteristics of portable devices which encourage spontaneous interactions" (Kukulska, Mobile Learning Now 119). The portability of MALL gives more flexibility and is every time readily available for learning.

With the introduction of mobile phones and digital devices in language learning and "with the use of audio-visual aids in teaching the subjects, the learners' learning is enhanced, and the burden of teacher's explanation is reduced" (Rao 193). Mobile learning is prevalent in today's era and students can access multiple learning materials with online access to mobile phones. "Currently, the high penetration of mobile devices can offer potential uses of this technology in the field of education" (Criollo-C et al.1). It is a blessing for language learners because they can learn language through online content globally.

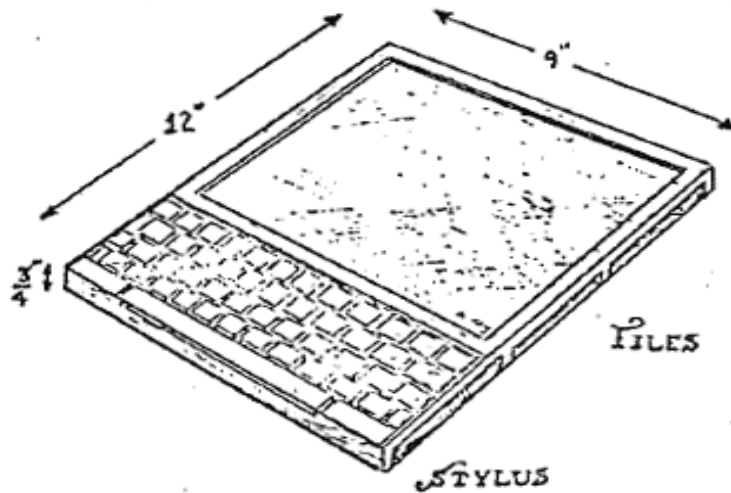
Mobile devices gave freedom of learning which reduced space and distance barriers leading to learners being a part of a universal classroom. The mobile device is portable and pocket size which a learner can carry with him anywhere and anytime. MALL has expanded the horizons for language learners. "Mobile learning (M-Learning) is not a substitute to today's existing learning devices and techniques but an extension for learning in a new environment with more new capabilities" (Vemula 37), MALL helps in learning a second language with just an internet connection.

MALL has many advantages, portability, connectivity, and individuality are some important features of mobile learning. “In India, the Internet is available even in very rural areas such that learning any language for rural students is no more difficult in rural India” (Vemula 38). Mobile phones are now available at affordable prices and have a big market “reaching the most remote and rural parts of the world. They have very compact sizes, efficient battery life, multimedia support, interactive user interfaces, are available at cheaper prices, can be connected to the internet, can be personalized, etc.” (Boity 05). Mobile phones are owned by families in urban as well as rural parts of India and learning through mobile phones benefits all equally.

Mobile Learning: Past and Present

The concept of learning through handheld and portable devices was developed by Alan Kay in 1972, “In 1972, Alan Kay developed the concept of a handheld multimedia computer that was intended as a mobile device for learning” (Traxler and Crompton 506). Alan Kay invented ‘Dynabook’, it was a low-cost portable, handheld wireless device. “Kay envisioned Dynabook, a portable device for students that would display text and graphics similar to a book” (Pollara 11), “the Dynabook would support active involvement and interaction with dynamic simulations of physical systems and allow learners to share their creative ideas” (Sharples and Pea 501). Dynabook was the first handheld learning device.

Traxler, Sharples and Soloway are pioneering scholars who worked on mobile learning to gain a better understanding of the topic, “Traxler, Sharples and colleagues have explored the emerging theoretical frameworks of mobile learning to provide us with a better understanding of this field. Soloway and Norris have focused their work on how the affordances of mobile learning can extend traditional classroom pedagogies” (Traxler and Crompton 506). Mobile learning helps learners to learn a language, but it can also be blended with traditional classrooms. It accelerates the learning in students. Mobile learning can also support the traditional classroom to achieve the desired efficient outcome.



Dynabook was invented by Alan Kay in 1972.

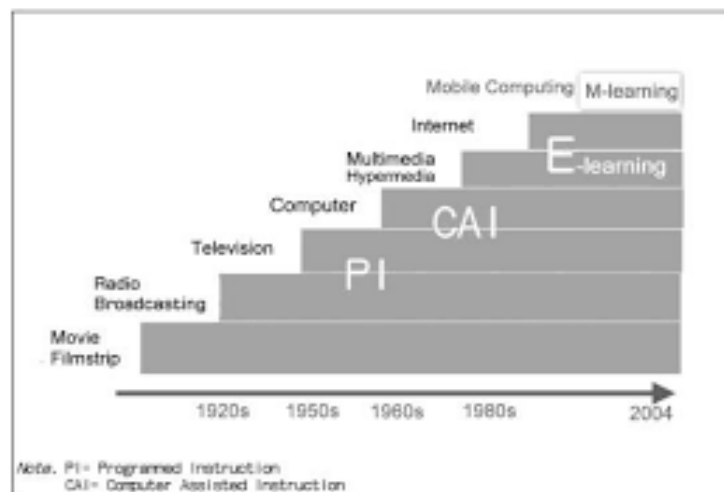
(Source: A Personal Computer for Children of All Ages by Kay 06)

The approach of teaching through the handheld device was introduced in 1972 but in actuality, mobile learning in classrooms was introduced much later and gained popularity recently. Digital technology has reached a far that started with the invention and introduction of the personal computer (PC) to the internet in the 90s, “is still echoed and very much amplified with the possibilities brought by the pervasive and ubiquitous access to mobile devices and social media platforms in the 2000s” (Pedro et al. 01), as mobile phones in learning were introduced much later.

The Dynabook was the beginning of the development of personal computing systems and can be “considered an enduring success of research in technology-enhanced learning” (Sharples et al., Small Devices 233-234). In the year 1980, in European countries, early handheld devices were introduced such as Micro writer, it was “a handheld writing device with a unique chord keyboard comprising one button for each finger and two for the thumb that could be pressed in combinations to produce characters on a single line display” (Kukulska-Hulme et al., Innovation 02). Then a Psion handheld computer was introduced which was mainly restricted to the classroom for teaching and learning English.

In the 1990s, Personal Digital Assistant (PDA) devices were introduced for learning. The use of mobile devices in education was introduced in the 2000s because in the 1970s when Dynabook was invented, technology was not very

advanced to make it work through the web. Later with the advancement of technology and the invention of Internet connection after failures and trials by many people, finally “by 1985, the Internet was already well established as a technology supporting a broad community of researchers and developers” (Liener et. al 09). Subsequently, with the invention of tablets and mobile phones and their availability at an affordable price, mobile learning came into existence and became a part of education as an educational and language learning tool. The technological tools for educational purpose “move through the programmed instruction stage, computer aid instruction, Internet-connected e-learning, and even wireless m-learning context” (Sugiyanto and Setiawan 02). There were many phases of digital learning.



The stage of educational technology development.

(Picture source: Sugiyanto and Setiawan 02)

According to Pachler, Bachmair and Cook, the development of mobile learning was divided into three phases,

- The first phase in the mid-1990s ‘A Focus on Devices,
- The second phase in the Early 2000 ‘A Focus on Learning Outside the Classroom’
- The third phase in late 2000 ‘a focus on the mobility of the learner’(30).

At present, mobile learning plays a significant role in the education sector considering mobile phones with the latest technological advancements comes with a lot of potential which helps students for learning. In 2002 two major

conferences “one European (Mlearn 2002-<http://www.eee.bham.ac.uk/mlearn/>) and one international (WMTE 2002 <http://lutf.ieee.org/wmte2002/>), hosted presentations from academia and industry where success stories of mobile learning were reported” (O’Malley et al. 30). The mobile phone has become a popular name in the last few years since there is a rapid advance in the availability and uses of wireless and mobile technology. It has enabled mobile learning to be implemented in many instances.

Many definitions of mobile learning are given by various scholars, hence, there is no definitive definition at present. ‘Mobile’ and ‘learning’ were two separate words that were joined together with each word having its own meaning and these two words together define the meaning itself, “the definition of m-learning has evolved in different ways and directions since the first decade of the 2000s” (Pedro et al. 02). If it comes to defining mobile learning, there is no specific definition of mobile learning.

Studies Related to the MALL

According to a report by The Telegraph India, United Nations Children’s Fund’s (UNICEF) U-Report Poll 2022 reveals that around 38% of respondents knew at least one female student to have dropped out of school. “The report by UNICEF India suggests that the increase in the dropout rate of girls from schools across the country is alarming” (The Telegraph India). In India, students and mainly girls in Indian rural and remote areas do not get an education after secondary or senior secondary classes because of a lack of accessibility to quality educational institutes in the countryside and remote areas, in such cases, the m-learning and MALL for language learning purpose could be a blessing for the Indian education industry.

As per the blog by IBM in Forbes India, according to one of the recent studies in India, on average, users spend 3 hours and 18 minutes every day with their smart functioning mobile phones. This can be leveraged by adding a new dimension to mobile phone usage, to revolutionise the Indian education sector by using a concept called m-learning or mobile learning (IBM). The blog discusses using mobile devices to devise a smarter education system, mobile

phones can “remodel and upgrade the current education delivery system” (IBM). The blog has also stated that

India has the second largest mobile phone user subscription base in the world, with over 900 million mobile phone users. Mobile devices have good penetration even in rural areas where other infrastructure does not exist. This growing ubiquity of mobile phones, the widespread availability and adoption of mobile broadband technology and market penetration of low-cost smartphones also hold key promises for the use of mobile technologies for education delivery in India (IBM).

According to Statista, the number of mobile phone users with the Internet in India in 2022 is 930.5 million and is growing every year. According to a report in The Indian Express, as per National Sample Survey (NSS), the percentage of school students owning smartphones in rural India has increased from over 36 per cent to 61 per cent from 2018 to 2020. According to the Indian Express’ economic survey of 2020-21, proper utilisation of digital devices can result in a reduction in the inequalities of education.

According to the survey tabled in Parliament on Friday, “Access to a data network, electronic devices such as computer, laptop, smartphone, etc. gained importance due to distance learning and remote working.... Percentage of enrolled children from government and private schools owning a smartphone increased enormously from 36.5 pc in 2018 to 61.8 pc in 2020 in rural India (The Indian Express, 30 Jan. 2021).

The reports show that the availability of mobile phones with internet connection in rural areas is becoming normal. The enrolment of the average number of students from rural areas in online education has increased.

According to the World Economic Forum, the number of students using technology and mobile devices is increasing every day, but it also varies from country to country. “Whilst 95% of students in Switzerland, Norway, and Austria have a computer to use for their schoolwork, only 34% in Indonesia do, according to OECD data” (World Economic Forum), in many developed countries, 95% of students are using technological devices for learning whereas the percentage goes down for developing countries.

The gap in using technological devices can also be seen within the country based on the income bracket, there is a notable gap between the privileged and disadvantaged section in the US “whilst virtually all 15-year-olds from a privileged background said they had a computer to work on, nearly 25% of those from disadvantaged backgrounds did not” (World Economic Forum). Some studies show that students who are learning through the online method, have chances to get access to 25-60% more learning material than the traditional method of learning. In traditional mode, students get 8-10% material in the classroom. Students who learn online have more retention and require 40-60% lesser time than in a traditional classroom setting because students can learn at their own pace, going back and re-reading, skipping, or accelerating through concepts as they choose. So, mobile learning could be an effective tool for English language learning.

Opportunities and Challenges in Mobile Learning

Mobile learning comes with lots of advantages as well as challenges. With the increase in the number of mobile phone users, there has also been an increase in the demand for mobile-assisted English language learning. Mobile learning is “any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of learning opportunities offered by mobile technologies” (O’Malley et al., 07). Mobile learning helps the learner to learn from any location and for this reason, this handheld device provides a wide range of opportunities. There are many options for learning English online just with the smartphone, “you have a smartphone, you can spend many lifetimes just reading Wikipedia, watching TED talks, and taking free online courses” (Harari 261), all of these things can help to learn English language, Harari also briefed about how traditional education focuses on academic skills and rote learning whereas the generation in the 21st century needs critical thinking and adaptability to achieve success in future.

Online learning and virtual classrooms are also supported and promoted by the Ministry of Education (MoE), along with its various bodies like the University Grant Commission (UGC), National Council of Education Research and Training (NCERT), All India Council for Technical Education (AICTE) and

many more. Programmes introduced for virtual learning include MOOC Swayam, Swayam Prabha, Diksha, E-Pathshala, Shiksha Van, National Program on Technology Enhanced Learning (NPTEL) and National Repository of Open Educational Resources (NROER). Each state government introduces its own virtual programme for the students of respective states. Massive Open Online Course (MOOC) has also contributed to popularising M-learning in India. MOOC provides high-quality and flexible learning content and many renowned Indian universities have contributed to MOOC platforms. Coursera, Swayam, edX, Udacity, and Khan Academy are some of the MOOC platforms. IIT Kharagpur has developed a digital library named the National Digital Library of India (NDLI) for students of all streams, it contains more than 8 crore learning resources which include articles, audio lectures, books, question papers, thesis, and video lectures. It is sponsored and monitored by the Ministry of Education (MoE), Government of India, through its National Mission on Education through Information and Communication Technology (NMEICT). This digital library helps a learner browse books virtually with mobile phones or computer devices.

The Indian Government launched the Digital India Campaign in 2015 to empower the country with digital resources and technology and to enhance internet connectivity. This Digital India Campaign helps the entire nation to be empowered digitally and it plays a vital role in the education sector. Technology plays an important role in the improvement of educational processes. “New technologies involving artificial intelligence, machine learning, blockchains, smart boards, handheld computing devices, adaptive computer testing for student development, and other forms of educational software and hardware will not just change what students learn in the classroom but how they learn” (National Education Policy 2020 56). National Education Policy (NEP), 2020 suggests opting for ICT-based educational initiatives to provide quality education for all.

The government of Gujarat has also taken a special initiative to enhance digital learning through mobile devices. Gujarat Government has encouraged students to learn through the help of mobile phones by distributing tablets to first-year

college students named NaMo E-Tablets, known as New Avenues of Modern Education through Tablets.

Mobile learning is very efficient and an essential mode of teaching and learning. Digital learning helps in smart learning as well as distance learning. One such instance of the efficient uses of mobile learning can be seen in March 2020 in India during the crisis of the COVID-19 outbreak where social distancing was the norm and there was a nationwide lockdown. During that time UGC and MoE guidelines suggested the institutes use online mode to take classes, complete the syllabus and conduct the exams. There are various applications and modes through which mobile learning can be implemented including WhatsApp, Facebook, YouTube, and Google Classrooms.

During the Covid lockdown, the entire nation was staying at home and school-colleges and all other educational institutes were closed. The government of India had taken various initiatives for education and students so that studies are not hampered by lockdown and the education sector functions smoothly. The Department of School Education & Literacy, Ministry of Education and Government of India in Remote Learning Initiatives across India mention several initiatives taken by the government to conduct education digitally in all states and union territories before and during covid lockdown. Some of the various initiatives taken by the government of Gujarat during covid lockdown for teachers and students include the ‘Study from home ‘initiative by Samagra Shiksha. This program was for school students, and around 32 lakh students benefited from this program. The study material was shared on the parents ‘WhatsApp group, “for sharing of the materials online, a network of parents ‘WhatsApp groups was created at the cluster level.” (Department of School Education & Literacy, MoE, Government of India 88). So, parents can be aware of their child’s learning.

During the lockdown, UNICEF conducted a sample rapid assessment to know the access of the students to digital resources in which 12000 schools participated, the result showed that around 60% of students have access to smartphones with internet connectivity and 40% of students do not have the access of internet and smart devices.

This lockdown and closure of schools have increased the dropout rates of students, mainly female students, which is indeed a grave concern for the government of India. So, the Ministry of Women and Child Development (MoWCD), with the support of the Ministry of Education (MoE) and UNICEF initiated a campaign 'BACK TO SCHOOL' as a recovery programme to bring out-of-school girls in India back into the education system.

To utilize time during a pandemic and to make the education system better, teachers were given online training, webinars were conducted through the DIKSHA application, virtual classes were taken through online platforms such as Microsoft Teams, and teachers were given training for live virtual classes. There was a distribution of digital content through different platforms such as DD Girnar channel, YouTube channels and WhatsApp online career counselling programmes, online self-defence programme training, and online training to develop practical skills related to the lab equipment for maths and science stream tutors. In collaboration with IIT Gandhinagar, a two-day programme on critical thinking and a creative environment in the classroom was conducted.

Wireless and pocket-friendly devices such as mobile phone, PDAs, tablet, and iPads are easy to access for learners and helps learner facilitate information online. These learner-centric programs facilitate learners to attend classes, appear for exams, and viva, download notes, audios and share information in online mode. Learners could often take advantage of unexpected free time as they frequently have their devices with them.

According to Criollo et al., language learning with mobile phones gives many benefits to learners that are not so common in the traditional mode of learning such as accessibility, flexibility, motivation, portability, and collaboration (06). Mobile Assisted Language Learning encourages learners to learn online as it has many advantages such as ubiquity signifying learning is omnipresent, mobility since the devices are wireless, flexibility as learners can learn whenever they want and ease of access. Mobile phones are personal so also give privacy to learners and universality as learners can enrol in any online available course. There are many advantages of mobile learning such as mobility, ubiquity, interactivity, accessibility, collaboration, utility, privacy,

adaptability, portability, multi-platform, flexibility, and universality. Education through mobile phones has no boundaries. “Mobile devices bring big opportunities to learners, to learn at all times, with no boundaries for education” (Ozuorcun and Tabak 299). Many opportunities can be generated in teaching and learning with the mobile phone such as:

- The tech-based and digital method of learning leads to modern methods of learning.
- Mobile phones are easy to access and make learning more flexible and easier.
- The information can be exchanged more easily.
- Learning becomes ubiquitous and gives freedom of time and place.
- Learning is convenient as it is self-paced.
- In mobile learning, the role of a teacher is to become a facilitator and the teacher is a ‘guide on the side, it promotes a learner-centric approach which increases the productivity of learners and boosts their self-confidence.
- Saves time during travelling.
- For a “digital natives” generation, the approach to learning is more natural. (Criollo-C et al. 04; Mohammadi et al. 465; Ozuorcun and Tabak 301).
- “Better access to education in remote areas and developing countries” (Criollo-C et al. 04).

There are many advantages of mobile learning but every technological device which has benefits, also comes with some limitations and challenges. Though mobile phones can contribute to promoting language learning and have the potential to improve learning effectiveness, it also has some limitations and challenges.

Disadvantages, limitations, and barriers can be divided into three specific areas:

- Technological limitations of mobile devices and related technologies
- The use of m-learning by individuals and organizations
- Cultural Aspects” (Criollo-c et al. 04).

Limitations related to Mobile learning are as follows:

- Limited battery life
- Network inefficiencies.
- Smaller screen size.
- Limited storage capacity
- Learners and teachers may find it difficult to adapt mobile phone learning due to a lack of technological know-how.
- Incompatibility with some educational approaches.
- Lingual and cultural limitations may cause hindrances in learning.
- Difficulty to form social relations as it decreases the relationship between the student with other students and teachers and the teacher with other teachers and students.
- Other problems related to mobile devices are network performance, content heterogeneity and content delivery to the user.
- Lack of face-to-face interaction with teachers and other students may reduce social relations. (Criollo-C et al. 04-05; Mohammedi et al. 465; Ozuorcun and Tabak, 301).

2.3 Technology-Enhanced Language Learning (TELL)

TELL includes technological devices such as computers, tablets, PDAs, iPads, or mobile phones along with an Internet connection. Applying this method in language classrooms involves activities like using electronic dictionaries to find word meanings, chatting in the target language, reading news on websites, utilizing, producing, and sharing multimedia content, engaging in online discussions, and listening to music while reading the lyrics, among various other possibilities. Despite its economic repercussions and the fact that both teachers and learners must be digitally competent to participate in a TELL environment, the advantages of this approach are clear. The advantages of TELL, MALL and CALL are mentioned in many research studies, as listed below:

TELL promotes a more flexible and active language learning method than traditional learning methods. It encourages flexible learning and learners can learn and schedule their class work according to one's own convenience.

- Saves resources and travelling time.
- More accessibility leads to easy and free access, comfort, and autonomy.
- Wide range of learning resources and learners have the option to select the learning material of one's own interest that meets their requirements.
- Self-paced learning makes it easier and more flexible for learners.
- Language learning becomes more facilitating.
- It boosts self-confidence and builds self-knowledge as learners themselves complete the online courses.
- It is an individual, motivating, and efficient process.
- It promotes a learner-centric approach, adapted to learners' abilities, preferences and cognitive and learning styles.
- It helps develop better attitudes towards learning among students and encourages students to take responsibility for their learning.
- It provides students with authentic communication and motivates them to use the language outside the classroom. (Ozuorcun and Tabak 300; Palacios-Hidalgo 121).

Using technology can help with learning languages, but how well it works depends on how much the language teacher knows and how good they are at helping students learn in that tech-friendly environment. Digital technologies can help improve the world at different scales, but they also pose several challenges. There are various challenges to be faced by teachers and learners in CALL and MALL, as mentioned by Tafazoli et al., 2018b, p. xxi, these include:

- Using digital tools and resources in language classrooms is to learn, adopt and implement digital methodologies.
- To introduce cultural diversities in TELL.
- The challenge for language teachers is to shift roles, to understand, learn and design courses using digital competencies.

- The challenge of increasing telecollaboration in the language classroom with the use of technology (Palacios-Hidalgo 122).

2.4 MALL and CALL

MALL is mobile-assisted language learning which is a part of mobile learning and CALL is Computer Assisted Language Learning, which is part of Technology Enhanced Language Learning (TELL). MALL includes devices such as Mobile phones, tablets, iPads, and PDAs and CALL includes devices such as computer desktops and laptops, all of them have similar functions for language learning, in fact, “m-learning can be considered simply as the natural evolution of e-learning with more effective communication and personalized mechanisms or a powerful platform for distance learning” (Criollo et al. 01). Educators and learners have different opinions regarding MALL and CALL as language learning with a mobile phone is easier because it is pocket friendly, wireless, and handier than laptops and desktops giving mobility and easy access to the learner. Laptops and desktops need to be connected to Wi-Fi whenever one travels and if there is no Wi-Fi or data card, it can’t be connected to the internet. Laptops and netbooks need a network to get on the internet, and this is usually in specific places with fixed locations, like buildings or Wi-Fi spots. On the other hand, mobile devices almost always have a network connection available in nearly various part of country.

However, mobile phones can be connected to the internet by just putting their data cable on without interruptions. Mobile phones ‘battery lasts more than laptops and netbooks as once a mobile phone is fully charged; it can be used for 48 to 96 hours before it needs to be recharged whereas netbooks and laptops require a power supply in three to four hours.

The usefulness of a mobile device for education relies on having electricity, a good internet connection and user competency. Though m-learning and e-learning both are branches of TELL still, there are a few differences in both kinds of technological devices and so, the preference of language learners has changed, mobile phones and Tablets have several advantages in language learning and education if compared to laptops. First, mobiles and tablets are lighter in weight and have more flexibility which makes them superior for

digital reading or accessing content. Second, easier to switch on and switch between the applications. Third, high degree of user interactivity due to the touchscreen surface. Fourth, more mobile and can be taken anywhere without opening and shutting off the screen and students can use them for mobile data collection or notetaking. Fifth, since it is inexpensive to develop apps for mobile platforms, there is a rapidly growing amount of free or low-cost apps available, many of which are suitable for education. Last, their long battery life makes them more suitable for learning.

Mobile phones, tablets and iPads are more convenient for learners due to their characteristics which include, being handier, lightweight, cheaper, and easier to use with a touchscreen. “Mobile phones are particularly useful computers that fit in your pocket, are always with you, and are nearly always on. Like all communication and computing devices, cell phones can be used to learn” (Prensky 02). MALL and CALL have more or less similar features and mobile learning is an evolution of e-learning, “as the situated learning learner improves their application of E-learning and M-learning, both of them use audio, video-teleconference, e-mail to teacher and peers, no geographic boundaries, no need to travel school” (Ozuorcun and Tabak 303), “m-learning is not versus to E-learning, because they have mainly same features and techniques. Another question is m-learning supports E-learning and in practical terms, it is” (Ozuorcun and Tabak 304). M-learning is a subset of e-learning.

Tablets and mobile phones are palmtop devices to be used where one wants to, but they also have limitations compared to laptops and desktops. With mobiles and tablets, it is more difficult to write and edit on than netbooks or laptops, unless one gets an external keyboard at the extra expense, also mobile phones and tablets have limited storage and smaller screen size, “it is precisely the combination of miniaturization, mobility, and power that grabs today’s Digital Natives. They can visualize a small screen as a window to infinite space and have quickly trained themselves to the keyboard with their thumbs” (Prensky 06). The small size of mobile phone is its advantage and its limitation.

2.5 Distance Learning, E-Learning and M-Learning

“The relationship between distance learning, e-learning, and m-learning is still being explored with various researchers focusing on aspects of pedagogy, technology, and social factors in order to classify mobile learning” (Pollara 13). Distance learning means getting an education without going to college or university, the method of distance learning has been practised for more than one hundred years, its main characteristic is the distance and time separation between teacher and students. According to Georgiev et al., m-learning is a part of e-learning and e-learning is a new method for d-learning. The introduction of the internet and ubiquitous devices brings a revolution in the education and language learning field.

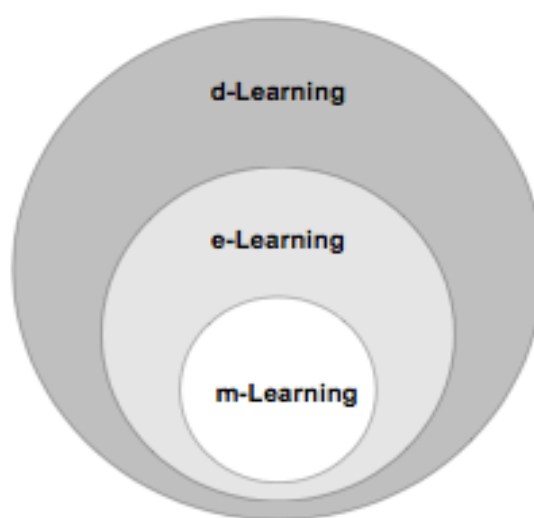
Earlier, students had to go to college in distance learning to submit assignments or project works but with the availability of electronic devices and the internet, in e-learning and m-learning, the assignments and project work could be submitted through technology such as e-mail. Lectures could also be delivered virtually. With technology, education can be delivered through online learning methods. The digital and technological learning method brings up new opportunities and approaches in learning methodology, it “has triggered a new interest towards open and distance learning opportunities including the advent of Open Education Resources (OER) and Massive Online Open Courses (MOOCs) that attempt to provide learning access to a wider audience” (Saykılı 02). E-learning is electronic learning, any learning that could be done virtually is considered as e-learning.

“E-learning is commonly referred to as the intentional use of networked information and communication technology in teaching and learning” (Pauline and Raj 11). Many other terms are used to describe e-learning such as virtual learning, network learning, web-based learning, distributed learning, and online learning.

M-learning is Mobile learning, learning with a handheld device anytime and anywhere. “Mobile learning can be used to support traditional learning (Wang, 2004) as well as distance learning” (Korucu and Alkan 1926). Mobile learning

is an evolution of e-learning. Language learning with e-learning is CALL whereas language learning with mobile phones is called as MALL.

These new technological devices with internet connection are omnipresent and a learner can learn anytime and anywhere whereas in distance learning there is a limitation associated with ‘time and place’, in distance learning one could not connect with the other learners and teachers wherever and whenever they want whereas both Benson (2002) and Conrad (2002) “identify online learning as a more recent version of distance learning which improves access to educational opportunities for learners described as both non-traditional and disenfranchised” (Marcial 28). Some other researchers such as Ally (2004), Hiltz and Turoff (2005) and Oblinger & Oblinger (2005) discuss not only the accessibility of online learning but also discusses its connectivity, flexibility, and ability to promote varied interactions. Hiltz and Turoff (2005) never differentiated online learning from distance learning or traditional delivery system, but they considered online learning as an updated version of distance learning.



The place of m-Learning as part of e-Learning and d-Learning

(Source: Georgiev et al. 28-1)

With time and the evolution of learning methods, technology has overtaken the distance learning method. Distance Learning has started with technology as well such as MOOC and Coursera. These courses are conducted with computers and mobile phones. From computers to handheld devices, the terminologies related to e-learning have also been updated with mobile learning along with

its physical and mechanical features. As computers are heavier in weight and mobile phones are lighter, computers are wired and mobiles are wireless devices, with physical to mechanical, all the attributes have been updated with time and evolution.

Table-1: Terminology comparisons between e- and m-learning (Korucu and Alkan 1927)

e-learning	m-learning
Computer	Mobile
Bandwidth	GPRS, G3, Bluetooth
Multimedia	Objects
Interactive	Spontaneous
Hyperlinked	Connected
Collaborative	Networked
Media-rich	Lightweight
Distance learning	Situated learning
More formal	Informal
Simulated situation	Realistic situation
Hyper learning	Constructivism, situationism, collaborative

E-learning and m-learning are both modes of online learning, but m-learning is a newer form, so it is more advanced and updated than e-learning.

Pedagogical Changes

Table-2: Pedagogical differences between e-Learning and m-Learning environments (Sharma and Kitchens 206)

E-Learning	M-Learning
More text and graphics-based instructions	More voice, graphics, and animation-based instructions
Lecture in classroom or in internet labs	Learning occurring in the field or while mobile

There are many changes between e-learning and m-learning as m-learning as the name suggests is mobile learning and one can take it anywhere and operate it anytime so mobile phones are always synchronized with various applications and learners get immediate notifications. So, with m-learning, learning becomes a continuous process, and learners can get instant notifications and feedback from mates and tutors, thereby making learning more flexible.

Table-3: Distinctions between e-Learning and m-Learning environments concerning their communication modes (modified from Sharma and Kitchens 206)

Instructor to Student Communication

E-Learning	M-Learning
Time-delayed e-mail (students need to check e-mails or web sites for communication)	Instant delivery of e-mail
Passive communication	Instant communication
Asynchronous	Synchronous and spontaneous

Student to Student

E- learning	M-Learning
e-mail-to-e-mail	24/7 instantaneous
Private Location	No geographic boundaries
Travel time to reach to internet site	No travel time since wireless connectivity
Dedicated time for group meetings	Flexible timings on 24/7 basis
Poor communication due to group consciousness	Rich communication due to one-to-one communication, reduced inhibitions

2.6 English Language Learning with Mobile Phone

Many parents and educators consider mobile phones as a distraction and computers as machines that could be used for education. However, “it is time to begin thinking of our cell phones as computers—even more powerful in some ways than their bigger cousins” (Prensky 01), because the number of mobile phone users is increasing.

A Mobile is a tiny yet fully featured device that can be used for educational purposes. “Nearly two-thirds (63%) of cell phone owners now use their phone to go online, according to a new survey by the Pew Research Centre’s Internet & American Life Project” (Duggan and Smith 02) and to learn a language, a mobile phone can be considered as an apt technological tool and easier to use. “Students in China, the Philippines, and Germany are using their mobile phones to learn English” (Prensky 01). Even in India, learners have started using mobile phones to learn the English language. “Having a browser in the cell phone puts a dictionary, thesaurus, and encyclopaedia into the hands of every student. It gives them instant access to Google and other text search engines, turning their cell phones into research tools” (Prensky 04) and it aids in learning the English language.

Learning English with web-enabled wireless devices such as mobile phones, PDAs, notebooks, and tablets is convenient for students because these devices provide learning flexibility to the learners as students can use technology to be in constant touch with their learning as they can search, access, and download their research material and can email to teachers (Ozuorcun and Tabak 299).

According to Duggan and Smith, learners getting educational mail or learning a language accessing mobile internet are called “cell internet users”, “we call them “cell internet users” and define them as anyone who uses their cell phone to access the internet or use email” (Duggan and Smith 02), “the only correct answer to the question of what students can learn with a cell phone is "anything if we educators design it right" (Prensky 02). The proper design of the curriculum is an important aspect of mobile learning.

Learning the English language with mobile phones is easier and possible. Some people have negative perceptions about learning English on a mobile phone. According to Prensky, learners in Japan and China are learning English on mobile phones,

Given the huge demand and market around the world for English lessons and practice, it is the one kind of learning that is already readily available on cell phones. In Japan, you can dial a number on your cell for short English lessons from ALC Press’s Pocket Eijiro (McNicol 2004) or Japanese lessons from Enfour’s TangoTown. In China, the British Broadcasting Corporation (BBC) and others are providing cell phone English-language training (BBC Press Office 2005). One company, MIG China Ltd. (working with First International Digital), is even subtitling pop songs with their lyrics, highlighting each word as it is sung (First International Digital 2004). Companies such as Ectaco provide language games via mobile phone "flashcards," as well as dictionary and phrasebook software to aid in foreign language proficiency. The Canadian corporation Go Test Go has developed English vocabulary testing software (Prensky 02).

As per the survey of ACL Press in Japan, learners who are learning English with mobile phones have more chances of revising lessons than learners accessing computers, In Japan, Masayasu Morita, working with ALC Press,

evaluated the use of English language lessons formatted differently for computers and cell phones. “He found that 90% of cell phone users were still accessing the lessons after 15 days, compared to only 50% of computer users (2003). Another Japanese company, Cerego, strongly supports using cell phones for learning” (Prensky, 05). Users accessing mobile phones have more chances of accessing lessons even after 15 days than computer users because it is easier to access through mobile phones whenever and wherever desired. Mobile phones are used while waiting in queues at coffee shops, waiting for a bus, on lunch breaks at work or during the daily commute for searching various topics on Google, keeping track of homework assignments, and staying connected to friends from school and friends at home.

As per the study conducted by Ghanizadeh et al. in 2015, technology in language lessons has multidimensional benefits and makes a positive impact on students who are learning English as their listening, writing, and reading skills are improved. Technology shows a positive impact on students’ grammar skills, pronunciation, diction, and vocabulary learning making learning enjoyable. Chen (2013) studies the attitude of Chinese students towards tablet-based Mobile Assisted Language Learning (MALL). The survey aimed to assess students’ perceptions of usability, effectiveness, and satisfaction with tablets for language learning for four weeks, the study concluded that based on participants’ attitudes, tablet computers were easy to use. They are effective for language learning and the participants were satisfied with MALL (Tafazoli et al. 35).

MALL has many benefits that students can use in and out of the classroom. With mobile phones, language learning becomes a continuous process. There are many advantages of Mobile Assisted Language Learning for English language learners such as:

- Using an e-dictionary or thesaurus on mobile phones aids in finding meanings with pronunciations both during and after class.
- Browsing through online forums, blogs, news, and articles.
- Participating in online discussion boards.
- Mastering the skill of constructing sentences with specific words.

- Learning isn't confined to the classroom; it extends to home as well. You can incorporate new words during class and practice speaking the language in the classroom setting.
- Eliminates geographical boundaries and one can enrol in national or international English language learning courses.
- Wide variety of richly diversified learning resources (Ozuorcun and Tabak 299).
- It provides the flexibility of time and place.
- Classes provide a learner-centric environment.

Attewell in 2005 briefed about the benefits of M-learning such as:

- M-learning helps learners to improve their literacy and numeracy skills and to recognise their existing abilities.
- M-learning can be used to encourage both independent and collaborative learning experiences.
- M-learning helps learners to identify areas where they need assistance and support.
- M-learning helps to combat resistance to the use of ICT and can help bridge the gap between mobile phone literacy and ICT literacy.
- M-learning helps to remove some of the formality from the learning experience and engages reluctant learners.
- M-learning helps learners to remain more focused for longer periods.
- Mobile learning helps to raise self-esteem.
- M-learning elevates self-confidence (13-14).

2.7 Gender Role and Mobile Learning

India is a diverse country concerning caste, creed, language, religion, gender and many more. Also, a vast majority of Indian society is patriarchal, more inclined towards male child and prefer having sons to daughters and educating sons than a daughter. Daughters in many Indian families are not allowed to travel to pursue education or to live in other cities to get higher education. A higher rate of female school dropouts is a matter of concern. With mobile learning and virtual classes, this educational gap can be bridged.

As per a report by the Economic Times on 20 June 2013, Google India VP and Managing Director Rajan Anandan told reporters, “Around 60 million women in India are now online and use the Internet to manage their day-to-day life. With easy access to the Internet at homes, cyber cafes, and offices and the growing adoption of smartphones, the Internet is being used by women for a variety of things.” According to a study conducted by search giant Google, there are a total of 150 million internet users in the country, out of which 40% are women who log in to the internet every day to check emails, interact on social networking sites and shop online (Economic Times). This was in the year 2013, and ever since, there is a significant rise in the number of women using mobile technology and smartphones in India. According to a report by The Times of India on 8 March 2022, In India, in around 200 million households, there is at least one woman using the internet and smartphones from barely 40 million households in 2012.

As per the report by Indian Express on September 17, 2021, the study says that India has the second highest number of women learners for online courses in the world. Women in India are learning online at higher rates compared to pre-pandemic, “representing 44 per cent of new learners in 2021, up from 37 per cent in 2019. The Women and Skills Report by Coursera compares pre-pandemic enrolment and performance data with trends observed on the platform since the onset of the pandemic through June 2021” (The Indian Express). Online classes during the COVID-19 lockdown have also played a crucial role in increasing the number of women’s education online. The rate of women learners learning online has increased after the pandemic.

According to a study conducted at Open University in the UK, “A survey of 406 university students between the ages of 18 and 39 years old, found that female students were more receptive to online learning than male students” (Morante et al. 268). Women perform better than men in online academics and more percentage of women than men complete the course.

Hence, there is a hike in the number of females using mobile phones which can help them get online education and learn English, which can bring equality in education gradually.

2.8 Conferences and Workshops Related to Mobile Phone Learning

Mobile phones give a wide number of opportunities in the education and learning process and it witnesses their growth and significance in the education and language learning process. There is a rise in the number of conferences, seminars, calls for papers and workshops all over the globe related to mobile learning. mLearn is a series of conferences conducted every year about mobile learning that aims to “promote the global development of the mobile, blended and seamless learning (mLearn) domain” “with emerging mobile, ubiquitous and ambient technologies” (MacCallum). It was first started in the year 2002 in Birmingham, followed by mLearn 2003 in London, mLearn 2004 in Rome, mLearn 2005 in Cape Town, mLearn 2006 in Banff, mLearn 2007 in Melbourne, mLearn 2008 at UNESCO World Heritage Site at Ironbridge in Shropshire, mLearn 2009 in Orlando (US), mLearn 2010 at Malta, mLearn 2011 in Beijing China, mLearn 2012 in Helsinki Finland, mLearn 2013 at Qatar, mLearn 2014 at Turkey, mLearn 2015 at Venice, Italy, and then, the conference started was conducted just online.

Wireless and Mobile Technologies in Education (WMTE) is an international workshop related to the Wireless, Mobile and Ubiquitous Technologies in Education (WMUTE) sponsored by IEEE and held at regular intervals. The first proceeding IEEE International Workshop on Wireless and Mobile Technologies in Education, WMTE was held in the year 2002 at Växjö, Sweden, second WMTE was held in 2004 at Taoyuan, Taiwan; the third WMTE was held in 2005 at Tokushima, Japan; fourth WMTE 2006 was held in Athens, Greece; fifth WMUTE was held in 2008 at Beijing, China; sixth WMUTE was held in the year 2010 at Kaohsiung, Taiwan and the seventh WMUTE was held in 2012 at Takamatsu, Kagawa, Japan.

The International Association for Development of the Information Society (IADIS) runs a conference series every year that is related to Mobile Learning. An International Mobile Learning conference is held every year since 2005. It is named IADIS International Conference Mobile Learning. This conference takes place at different venues in different countries every year and during the Covid-19 pandemic, it was virtual. Its 19th International Conference for 2023 took place in Lisbon, Portugal from 11 to 13 March. Earlier this conference

took place at Algarve (Portugal), Barcelona (Spain), Porto, Berlin, Madrid, Madeira, Budapest, Netherlands, and Bulgaria.

Another one is the Association for Learning Technology (ALT). It is the UK's main conference for Learning Technologists and is held over three days every September, providing a valuable forum for researchers, policymakers, and practitioners from education and industry to solve problems, explore, reflect, influence, and learn.

MOBIGAM was a survey-based research initiative undertaken by the H M Patel Institute of English Training and Research, Vallabh Vidyanagar and it was funded by the British Academy. MOBIGAM is “Mobi” (mobile) + “gam” (“a village”) and the project studies the use of mobile technologies for language learning in the Gujarat region, especially in the rural and semi-rural areas. The project team constitutes of professors from the University of Leeds, United Kingdom and professors from H M Patel Institute of English Training and Research and the Central University of Gujarat, Gandhinagar. The MOBIGAM project aimed to address the gap related to the mobile phone and language learning program. Various workshops in a part of the Gujarat state were conducted post research and the team of the project visited various villages and rural areas to encourage and support students in their attempt to gain access to secondary education. It was one of the major research workshops related to mobile phones and language learning.

Another crucial project related to the Mobile Phone in the field of language learning is Mobile and Immersive Learning for Literacy in Emerging Economies (MILLEE). The project was introduced in the year 2009 for rural school-going students in India, it was initiated by Dr. Matthew Kam from UC Berkley. The project aims at enhancing mobile gaming technology in developing countries to access literacy among school-going students.

One more project related to m-learning in India is “ ‘Kindle Mobile Initiative in India’ was funded by Regional English Language Office (RELO) Embassy of the United States of America, American Centre, New Delhi, India” (Nehal 289) and “it was facilitated by Aligarh Muslim University now renamed as UGC Human Resource Development Centre, AMU. Aligarh, India” (Nehal

289). The project aims to promote Kindle-assisted language teaching. Such projects are undertaken to promote m-learning seeing there is wide scope in teaching and learning through handheld devices. There are many more mobile learning conferences and workshops held on an international and national level every year.

2.9 Podcast and Vodcast

According to the Cambridge Dictionary, Podcast means a radio programme that is stored in a digital form that one can download from the internet and play on a mobile, computer or MP3 player. “The term Vodcasting (the “Vod” stands for “video-on-demand”) was used to refer to podcasts with video rather than audio content but this is now generally referred to as video podcast” (Rosell-Aguilar, Top of the Pods...). Vod is an acronym for ‘video on demand’ and vodcast means a video stored in a digital form that could be downloaded and played on mobile or computer.

Podcasting is different from normal downloading and streaming because it uses RSS. “The use of RSS, or Really Simple Syndication, means that the user can subscribe to a podcast that will be downloaded automatically every time there is an update or new content is uploaded” (Rosell-Aguilar, Top of the Pods 47) and podcasts can “can be accessed anytime and anyplace, as opposed to requiring the user to be in front of a computer with an internet connection (Diem, 2005; Sloan, 2005)” (Rosell-Aguilar, Podcasting for Language Learning 02). Google Podcasts and Spotify are examples of podcast websites.

A podcast has audio content whereas a vodcast has both audio as well as video content. A vodcast is an extended version of a podcast that helps learners get visuals along with the sound. There are many advantages to podcasts and vodcasts which make learning encouraging outside the classroom. There is content that gets uploaded regularly related to language learning which can be downloaded by the learner and can be listened to or watched whenever and wherever at will. Teachers can make their podcasts and vodcasts for their students related to the subject. Podcasts and vodcasts can be downloaded to a mobile device and viewed at any time and learners can learn many new words in a limited time. Podcasts and vodcasts are also cost efficient and learners can

view vodcasts or listen to podcasts multiple times. Students can view vodcasts and can discuss the topics in their classes which helps them to understand each other's opinions, boosts confidence and helps to add new words to the vocabulary.

Wahab and Ghafoor have discussed the major advantages of using vodcasts as a medium of learning and instruction, which are as follows:

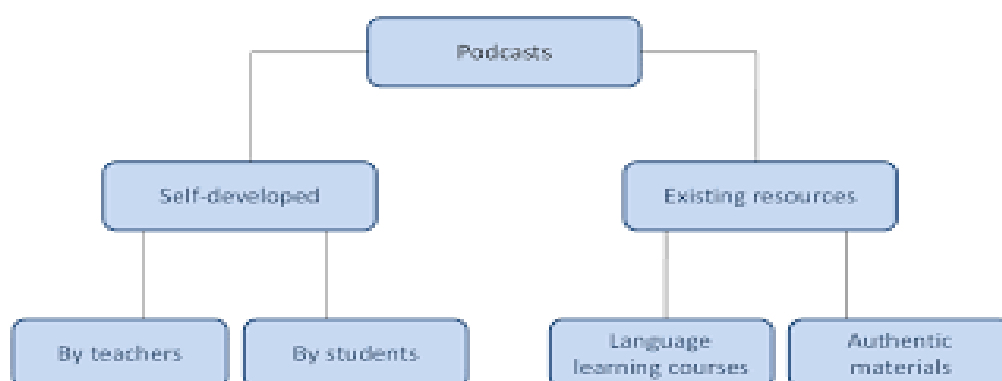
- Vodcasts replace passive learning with active learning and promote the active participation of students in the classroom.
- Students who have missed any classroom session, can download the session, and learn it as per one's own convenience and in this way, they do not miss out on an important session or information.
- It creates the opportunity for teachers to use relevant teaching material which keeps the students more engaged.
- With online available videos through vodcasts, students can make their audio-visual presentations and can share them with their peers using a video-sharing site (373).

Vodcasting and "Podcasting fits with the current movement towards free open-access educational content, as exemplified by Open Educational Resources (OERs) and Massive Open Online Courses (MOOCs)" (Rosell-Aguilar, Podcasting as a Language Teaching and Learning Tool 32). Many podcast sites are designed for language learning. The following is a list of the few popular podcast sites given by (Yaman 63):

- www.podcastsinenglish.com
- <https://learnenglish.britishcouncil.org>
- www.bbc.co.uk/podcasts/genre/learning
- www.eslpod.com
- www.betteratenglish.com

The above-mentioned are not limited to podcast sites for learning English, there are many more podcasts and vodcasts sites designed that English language learners can easily find online. "As podcasts consist of audio and video files, they constitute an invaluable tool that contributes to the development of

listening and pronunciation skills” (Yaman 64). Podcasts enhance listening and speaking skills by adding more words to the vocabulary.



“Taxonomy of uses of podcasting for language learning

(Adapted from Rosell-Aguilar, 2007, p. 476)”

(Rosell-Aguilar, Podcasting as a Language Teaching and Learning Tool 33).

Teachers can also create their own audio or audio-visual podcasts. There are many benefits that students can get from podcasts created and circulated by teachers. Teachers can also record their classroom lectures and upload them as a podcast on their sites. “Podcasting is harder than making use of the existing podcasts for both learners and teachers, but getting involved in such a process will enhance the sense of learning by doing, raise student-student and student-teacher communication, and broaden the students’ out-of-class experiences” (Yaman 64). Apart from podcasting lectures, teachers can also do the audio recording of chapters to sharpen students’ reading skills, vocabulary, and pronunciation.

There are many more uses of creating podcasts given by (Meng 05); viz

- Record and circulate news broadcasts.
- The teacher’s notes could be recorded.
- Lectures could be recorded and circulated directly to students’MP3 players.
- Minutes of meetings and conference notes could be recorded.
- Student projects and project support interviews.
- Oral history archiving and on-demand distribution.



“Languages Section of iTunes U, where language-learning podcasts from different universities can be searched and downloaded”
(Rosell-Aguilar, Podcasting for Language Learning 05).

2.10 Video Conferencing

Videoconferencing (VC) serves as a synchronous, long-distance, group communication tool that provides interpersonal features along with a certain level of communication richness and social presence. The term Videoconferencing has been misinterpreted by many as it is considered technology within itself, but videoconferencing is a function of technology. Videoconferencing is not a technology, rather it is a function to host a variety of technologies. Video conferencing cannot bring people physically together but communication through cameras and videos where people can see each other and talk together as if they are in the same room despite being seas apart, makes things simpler. “Video conferencing is a method of communicating between two or more locations in which sound, vision, and data signals are conveyed in an electronic way to enable continuous interactive communication” (Deokate et al. c213), it “broadcasts from a central point to many different locations regardless of distance” (Coventry 03). The medium is real-time interactive, and far-end participants can both hear and see each other. “The compelling reason for holding a videoconference is to intensify human interaction without having to travel” (Barlow 01). Video conferencing is a face-to-face conversation without physical presence and saves travelling and infrastructure costs.

Live online classes with mobile phones are conducted through video conferencing on various educational platforms such as Zoom, WhatsApp, Google Meet, etc. Earlier no such platforms and video conferencing were being too expensive for everyday use, it did not get much attention in the field of education. Now classes with video conferencing have become common as it can be accessed at minimum cost and saves travelling costs and time, there are many benefits of video conferencing as it makes learning simpler with features of cameras, audio, and high-quality technological tools, and it also saves time, cost, resources, and the possibility of better work-family life balance for employees using the technology.

“Together with the initial drive for developing educational Information and Communication Technology (ICT) uses as a change agent in education, as well as its potential contribution to reducing CO₂ emissions by cutting travel, video conferencing is now attracting more and more attention from various users” (Wiesemes and Wang 29). Video conferencing saves the environment with time, energy, and money. The cost of internet and video conferencing systems is much more affordable than earlier, “The costs of video-conferencing systems have also been reduced, so that they have become more affordable for schools, teacher-training institutions and generally the Higher Education sector” (Wiesemes and Wang 29). With more users, the cost of video conferencing and the internet has also reduced with time is more affordable and attracts more learners.

“VC traces its origins to 1956 when the first public videoconference was held between AT&T headquarters and their Bell Laboratory in New York City. A few years later at the 1964 World’s Fair, Bell Laboratories introduced the Picturephone to the world and offered its VC-like service to businesses in several metropolitan areas” (Webster 259). Resultant media reporters, journalists and marketing teams speculated about the visual phones being a common thing in the USA by the 1970s. “Despite its valuable ability to interconnect with other video phones, the technology did not catch on as expected. Instead, high costs, application difficulties, and limited deployment prevented the picture phone from being a commercial success. Although the idea was ahead of its time, the technology was not truly ready” (Hansell 86).

But later, “Video conferencing has been in existence for more than 40 years since first demonstrated in 1968 (Barnes, 1997)” (Wiesemes and Wang 29), and now it plays a crucial role in online learning and many online learning applications need the system of videoconferencing to operate.

“Videoconferencing systems were first offered in Japan in 1984. Demand for them has grown rapidly ever since, even in a country where time spent together in person is considered essential” (Barlow 10). In the 21st century, the quality of VC technology has improved with affordability. At present Videoconferencing has become a common thing making life much easier. In this generation, technology and digital devices without video conferencing are unimaginable.

2.11 Web 2.0

There are many advantages of learning through mobile phones such as portability, accessibility, flexibility, and more learning opportunities. According to an article by Nations, “Web 2.0 is the second stage of internet development that involves the evolution from basic, static web pages to increasingly dynamic pages with user-generated content. It also includes the growth of social media as an important type of internet communication.” There is an increase in learning opportunities with Web 2.0. Web 2.0 is the second-generation World Wide Web which helps people in sharing information online easily.

With the advancement of ICT tools, education has also upgraded globally. The World Wide Web is helpful for teaching and learning and helps language teachers more. There are many advantages of using technology in an educational setting, it can increase encouragement, decrease anxiety, indulge more student participation, and provide students with authentic materials and audiences. The power of technology is limitless in the field of language learning. There are various methods for English language learners and teachers to integrate technology into teaching and learning of language. One such technologically advanced tool is Web 2.0. “Web 2.0 is a Web technology that aims to enhance creativity, information sharing and collaboration among users. These concepts have led to the development and evolution of Web-based

communities, such as social networking applications/sites, wikis, blogs, and folksonomy” (Tu CH et al. 336). Web 2.0 tools allow teachers and students to create, collaborate, edit, and share online content. It is used for developing software and applications like podcasts that enable users to share content.

“In learning environments, instructors integrate Web 2.0 technology to support collaborative learning to enhance student’s learning” (Tu CH et al. 336). The development of Web 2.0 helped people to connect with other people more effectively. Web 2.0 brings dynamism to teaching and learning of English language.

2.12 Teacher-Centric Classrooms to Student-Centric Classrooms

For years there was a practice of a traditional classroom where the teacher is considered an instructor and decides the teaching and learning model. Behavioural theory is being practised in classrooms since ancient times, but gradually with time and demand, it is changing, and education follows more constructivist principles than instructional approach strategy. Teacher centred approach is more traditional in nature and teachers play the role of instructor, “They are sometimes referred to as direct instruction, deductive teaching, or expository teaching, and are typified by the lecture type presentation. In these methods of teaching, the teacher controls what is to be taught and how students are presented with the information that they are to learn” (Hill 03), “Teacher-centred approach is associated chiefly with the transmission of knowledge” (Brown 49). Student-centred classes are more interactive and productive.

In teacher-centric classrooms, the teacher decides the course, teaching and learning method, project–assignment method and assessment structure. “Students come to see themselves as powerless in their education and see professors as having a majority of power to educate and to produce learning” (Abdelmalak 193). Students feel powerless in the education system without their contribution to learning methods, assignments, or assessment methods. “Traditional grading and assessment methods, in which assessment is a one-way process from staff to students, are inconsistent with adult’s self-concept of self-directivity” (Abdelmalak 193). In teacher-centric classes, Teachers are the

designers of the teaching-learning method and students must accept the method, teachers are in active roles and students are in passive roles.

In a teacher-centred approach, students become passive learners and teachers play an active role in the classroom learning process. It is not negative that the teacher is a designer of course and teaching method as the power of the teacher plays a crucial role in class as teachers possess more knowledge than students and they always try to bring out the best in the students. However, many students feel as if they have no choice in the classroom and the method of learning imparted and this may discourage students. As a result, students give importance to rote learning, and they lag in productivity and critical thinking. In teacher-centric classes, students feel neglected and demotivated if the teaching style conflicts with students' learning style which may result in limited or no learning.

Student-centric learning or learner-centred approach also referred to as 'discovery learning', 'inductive learning', or 'inquiry learning' focuses on the role of learners and their participation in the process of learning. In a learner-centred approach, teachers are still an instructor, but they do not hold the entire control of the class or power over what and how learners should learn (Hill 03). Learner-centred classrooms focus more on learners 'needs in classrooms and respect their learning strategies and styles. In learner-centred classrooms, students can use their strategy doing assignments, projects, or group projects, but the teacher always keeps an eye on students and helps and supports them whenever needed.

Learner centred approach enables students to decide what to learn and how to learn, besides reconstructing their understandings of their field of study as well as their personal life based on real-life situations "Constructivism is an approach to learning that holds that people actively construct or make their own knowledge and that reality is determined by the experiences of the learner" (Elliott et al. 256), the learner-centred approach follows the constructivist approach to the teaching and learning process.

Learning is an active process. In teacher-centric learning where the learner is a passive learner and the teacher must fill the learner with knowledge,

constructivism says that learning constructs meaning when the learner plays an active role in a learning process. This includes problem-solving and experimental exercises that the learner can relate to the real world. Information may be imposed, but understanding cannot be, for it must come from making meaningful connections between prior knowledge, new knowledge, and the processes involved in learning. Oliver in *Methods for Developing Constructivism Learning on the Web* mentions that the role of the teacher is to be a facilitator rather than an instructor by giving problem-solving exercises to students, where students could be active participants in their learning. The teacher makes sure he/she understands the students'-existing conceptions and guides the activity to address them and then build on them.

Maureen describes four characteristics of a constructivist learning environment:

- Shared knowledge among teachers and students.
- Shared authority and responsibility among teachers and students.
- The teacher's new role as a guide in instruction.
- Heterogeneous and smaller groups of students (52).

All these features support learner-centred education. Learners can play an active role in the teaching and learning process. Learning centred approach is valued because it values the interest of students, promotes interactive learning and problem-solving activities and the teacher plays the role of a guide than an instructor. In a learner-centric approach, the way students learn and use learning in daily life activities matters a lot.

With digitalisation and online learning, a learner-centred approach is being promoted. Here, the teacher becomes a provider rather than an instructor. With technology, students can learn individually as it can equip students to organize the learning process on their own. So rather than being passive learners, students can become active learners and active users of technology. Students get the responsibility of finishing the course on time because it is self-paced learning. "Through online learning (which provides increased access to course content, more scheduling flexibility, and better access to alternative education choices) and alternative media (such as digital games and project-based

learning), students have the flexibility to direct their individual progress” (Moeller and Reitzes 06). Online learning gives learning responsibility to students which makes students active learners rather than passive learners.

According to Wright 2011, to shift learning from teacher-centred classes to student-centred, there is a change required in 5 areas. They are :

- The balance of power
- The function of content
- The role of the teacher
- The responsibility of learning
- The purpose and processes of evaluation.

According to Wright, a learner-centred approach leads to a higher chance of success for students. The teachers also achieve higher job satisfaction. In a digital classroom, the teacher becomes a guide on the side whose role is not just to fill the vacant brains with knowledge, but rather to make learning creative, and productive and to guide students on their intellectual developmental journey.

Teacher teacher-centric approach to the student-centric method has been a gradual shift that began in the last few decades for delivering learning materials and assessment processes. The transition occurred unevenly across the world, as Western countries started to adopt the learner-centred approach in education in all methods of learning earlier than developing countries. The developing countries are still following the traditional method of learning (Muganga and Ssenkusu 18). Gradually with digital learning and with the rise of technological gadgets, developing countries have also started introducing student-centric approaches as it facilitates students in online learning and increases productivity among the learners.

2.13 Post Covid Impact on Digital Learning

India had been hit terribly by Covid-19 and its lockdown had a staggering impact on every stream of the Indian market including educational institutes. Due to the lockdown, all educational institutes were closed for a period and yet, education continued smoothly with the help of technology such as the internet,

mobile phones, laptops, and computers. From kindergarten to PhD level, the entire education sector was dependent on technology and technological devices. During the Covid lockdown, education including regular classes, practical's, exams, viva and all other formats of teaching and learning was conducted online following the guidelines of MoE and UGC. Google Meet, Microsoft Teams, Zoom, and video conferencing were replacements for regular classes. “However, Videoconferencing may be effectively used in online learning to enhance group collaboration with a sense of community between learners which may replace face-to-face classroom learning to some extent” (Jena 83). The Covid-19 lockdown and school closures brought attention to be flexible and the need to introduce new sustainable learning models.

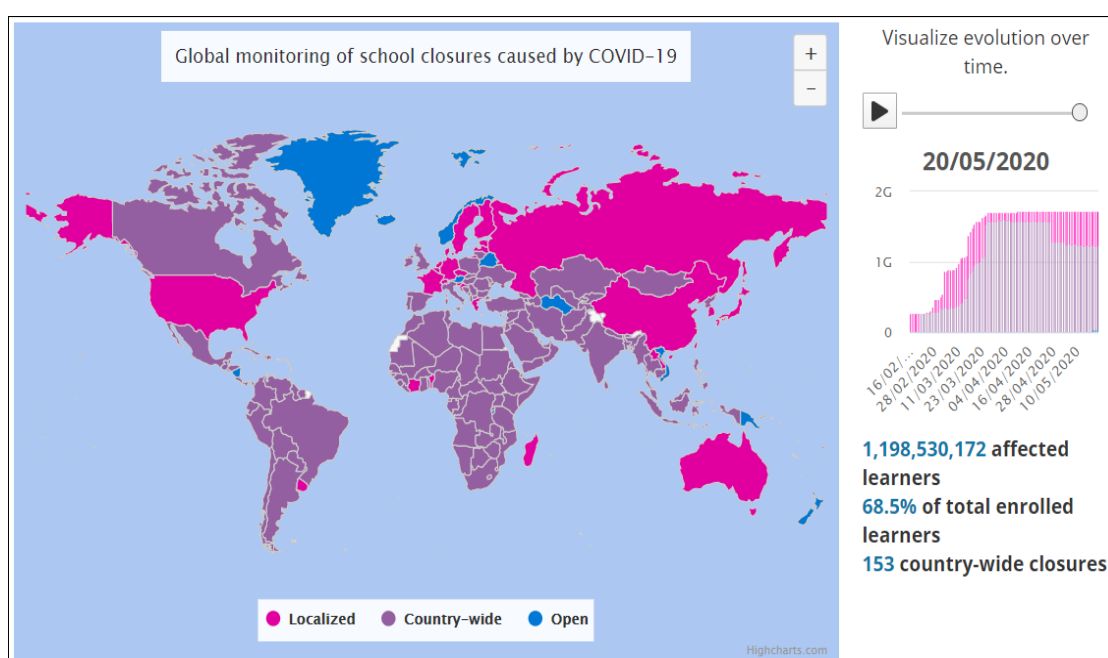


Fig: Global monitoring of school closures caused by COVID-19

Source: UNESCO

The worst pandemic of the century was witnessed in March 2020, when COVID-19 hit the world very badly and everything came to a halt, it also disturbed the entire education system at its peak, “nearly 1.6 billion students out of their classrooms in more than 190 countries. That represents over 90% of the world’s student population” (UNESCO). This was an exceptional situation and an unprecedented shock to the education fraternity all over the world due to the longest closures of schools and colleges. Millions of students

were away from schools and colleges due to the Covid-19 lockdown until the restrictions were lifted.

To make education function smoothly, various programs were introduced by the government in India and many new policies related to remote learning were introduced by UNESCO all over the globe to lower the impact of pandemic restrictions among educational institutes, especially for the students belonging to the disadvantaged and rural community.

UNESCO, UNICEF, and the World Bank partnered together to support the educational institutes to operate smoothly with remote learning and to reduce the dropout rates, particularly among disadvantaged communities, rural areas and female students after school reopening post the COVID-19 lockdown. According to the World Bank, 2021, the more devastating thing about the pandemic is an increased rate of school dropouts and many children, particularly girls not returning to school. “School closures and the resulting disruptions to school participation and learning are projected to amount to losses valued at \$10 trillion in terms of affected children’s future earnings” (World Bank). The pandemic has affected many children’s futures.

The pandemic also revealed a stark digital divide that schools can play a role in addressing by ensuring children have digital skills and access.

- Support the design and implementation of large-scale remedial learning at different levels of education,
- Launch an open-access, adaptable learning assessment tool that measures learning losses and identifies learners’ needs, and
- Support the design and implementation of digital transformation plans that include components on both infrastructure and ways to use digital technology to accelerate the development of foundational literacy and numeracy skills. Incorporating digital technologies to teach foundational skills could complement teachers’ efforts in the classroom and better prepare children for future digital instruction (World Bank).

According to a report by the World Bank on 22nd January 21, 2020, witnessed a different childhood and a teaching experience, that could be remembered by children throughout their life, and teachers had to suddenly adopt a different

teaching methodology and change roles. It was a more difficult situation for the teachers as they immediately had to adapt to the new method of teaching, much different from the traditional method and totally dependent on technology. The situation was more difficult for teachers who were weak in technology and the digital world and who never taught students using digital devices and ICT tools. They had to adapt to the new method of teaching overnight. The role of teachers changed swiftly. Teachers had to teach in the virtual classroom with the necessary tools to make the online session effective.

During the Covid-19 pandemic, online learning was encouraged and promoted during the lockdown that resulted:

- To follow the social distancing, students had to stay at home and had to acquire knowledge virtually.
- The online learning environment was highly effective.
- Self-paced and flexible learning.
- It promoted student-centred learning.
- With the internet connection and digital devices such as mobile phones, laptops, tablets and iPads, the lectures can be availed at any location.
- Deals with real-time student monitoring as well as reporting.
- Improves the image of the institution by offering technological solutions that solve real problems (Jena 83).

There are several measures taken by the government of India to promote digital learning during the Covid-19 lockdown. Also, many new methods and tools related to online learning and ICT were adopted by education institutes during the Covid-19 period. Today, Mobile Learning (M-learning) is widely embraced in education, particularly in higher education globally. Its popularity stems from its versatility and effectiveness in facilitating learning. Because of its features, mobile phone is gaining more popularity in learning.

There are many benefits of mobile learning which made education accessible during the period but also many challenges had to be faced by teachers and students. Online education with mobile phones gave freedom to students to learn anywhere and anytime. Teachers provided audio and video lectures to

students and PDF documents for worksheets and exercises were sent to the students for self-assessment.

During the lockdown, UGC and MoE promoted online classes including online examinations, virtual practical, and online viva voce for colleges and universities. There are various applications and modes through which mobile learning can be implemented and lectures can be attended online including WhatsApp, Facebook, YouTube, Zoom and Google Classrooms. UGC also made committees for online education and online exams. UGC Chairman, DP Singh, in one of the interviews, spoke about the committees formed by the UGC to promote online education and an online examination system. The committee was formed by UGC with the collaboration of MoE. Speaking to ANI, D P Singh, UGC Chairman said,

As far as the students are concerned, I wish to inform you that for them we have constituted two committees. Students are worried about their exams. They are also worried about prospects and their admissions to higher classes, so one committee has been constituted to look after the examination and academic calendar. Another very important committee that is related to students, teachers and the education system as a whole is to promote online education which is the need of the hour. We have to maintain social distancing therefore online learning and e-education is the only way out, said the UGC chairman (Hindustan Times).

UGC has taken all the necessary steps to conduct online education smoothly during the Covid-19 lockdown period. The MHRD and the UGC have been emphasizing continuing with the teaching-learning process using online modes such as Google Classroom, Google Hangout, Cisco Webex Meeting, YouTube Streaming, OERs, SWAYAM Platform and SWAYAMPRAKHA (available on Doordarshan (Free dish) and Dish TV), etc. “The faculty members have contributed a lot for the benefit of students during the lockdown period by using several tools like WhatsApp groups, other social media tools and emails” (UGC 03).

Along with maintaining social distancing, the continuation of academics is also important, and the most convenient way for the same during the social

distancing period is the online mode of teaching and learning activities. UGC has suggested colleges and universities follow preventive measures for COVID-19, maintain social distancing, and continue the teaching and learning process virtually and asked teachers and students to make productive use of the online mode of education so learning takes place without any kind of disruption. “The online learning platforms help the students not only get full access to the study material but also allow them to engage in online classes and interact with the teachers like the physical classroom setting” (Jena 85). Online learning through mobile phone help students to access wider learning resources and through video conferencing teachers and learners can interact as they are physically present with each other.

UGC & MoE recommended conducting viva exams, practical exams, PhD & M.Phil viva voce exams virtually, “The universities may conduct the practical examinations and Viva-Voce Examinations through Skype or other meeting apps, and in case of intermediate semesters... The universities may conduct the PhD and M. Phil. Viva -Voce Examinations through Video Conferencing” (UGC 07). So UGC also approved online and videoconferencing mode for learning.

Mobile phones and online learning have the potential for conducting classes, presentations, practical, and written or viva examinations. ICT ensures the achievement of academic goals and helps to teach and learn through digital media. Virtual laboratories (labs) could be facilitated through which practical exams of Science; Engineering and Technology streams can be conducted. UGC and MHRD also recommended it in their guidelines. Mobile learning in this digital era is essential for educational purpose. “...Students are given exposure to laboratory assignments/ practical experiments through virtual laboratories.....” (UGC 09). UGC and MHRD have taken special steps for providing virtual laboratories to the students, “the links provided by the Ministry of Human Resource Development for virtual laboratories to facilitate the students of science/engineering/ technology streams may also be suitable for such purposes”(UGC 09). Labs can be accessed virtually.

As the press note released by the Government of India and MoE, on 20 March 2020, Human Resource Development Minister Shri Ramesh Pokhriyal asked

students to continue their learning by making full use of the available digital e-Learning platforms during Covid-19 lockdown. Also, the press notes state about the few online learning platforms as the emerging approaches of India shared by the world bank, such as:

The DIKSHA: Digital Infrastructure for Knowledge Sharing. It is an initiative of the National Council of Educational Research and Training (Ministry of Education, Govt. of India). It is an online learning platform for students of all streams which has “more than 8000 e-Books for class 12th created by CBSE, NCERT and States/UTs which are available in multiple languages” (Government of India & MoE). The DIKSHA platform offers learning material, relevant to the prescribed school curriculum, to teachers, students, and parents. Teachers and students can scan QR codes in textbooks for easy access to all curricular-based lessons. The application is also available to use offline (DIKSHA website).

e-PATHSHALA: A web portal for online learning, introduced by NCERT for classes 1st to 12th. The application has numerous resources such as e-textbooks, audio, videos, e-Pubs, flipbooks etc. It is easy to access, available in multiple languages and takes low storage in a phone. This portal has 1886 audios, 2000 videos, 696 e-Pubs or e-books and 504 Flip Books (e-pathshala website).

National Repository of Open Educational Resources (NROER): This portal has the objective of making quality educational resources available for teachers and students. It is a platform for teachers to create content and to help students in learning a subject. This portal has 14527 files in total which include documents, interactives, audios, images, and video files in multiple languages.

SWAYAM: Study Webs of Active Learning for Young Aspiring Minds. SWAYAM program was initiated by the Government of India in 2016. It is a MOOC program for school as well as college and university students of various streams and hosts 1900 complete courses. It provides online lectures, assignments, videos, and examinations. It provides an online certificate after the completion of a course. “SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy” (MoE,

Government of India). The aim of SWAYAM is to give the best teaching-learning experience and to provide resources to all, including the disadvantaged sections of society.

SWAYAM PRABHA: Provides educational content 24*7 in 32 D2H (Direct To Home) TV Channels, it telecasts high-quality educational programmes using the GSAT-15 satellite. These channels are available for free of cost just with the Dish TV set-up box and antenna. The information about the timetable and the schedule of programs and other channel details are provided on the portal. New content is uploaded every 4 hours and repeated 5 times a day. The content is uploaded to the channel provided by NPTEL, IITs, UGC, CEC, and IGNOU (Swayam Prabha website).

Many ed-tech companies provide online education with m-learning or e-learning such as Coursera, Udemy, Lynda, Skillshare, Udacity etc. Edtech provided solutions to challenges during the pandemic. Edtech meaning Educational Technology refers to the business model related to education with technology. As physical schools close, the education technology (EdTech) that leverages software and hardware to improve classroom education and enables remote education, has come to the rescue for educators.

According to a report by GSMA on 21 March, 2021, “the EdTech industry is set to be worth £128bn by 2021 globally, with online learning as the main driver of growth in the COVID-19 era”. As mobile technology is penetrating developing markets rapidly, tech companies can give education to millions of children all over the globe who have limited or no access to physical educational institutes. The report also adds that “this can help sustainably empower young generations, bridge gender gaps and facilitate integration in the workforce”. Mobile phones can bridge gender gaps in learning.

Edtech companies also supported students during the pandemic and lockdown as it promoted education with technology and bridged educational gaps due to the closure of schools and colleges. Investments in ed-tech companies boomed during the Covid-19 lockdown. As per the report by the World Economic Forum published on 29 April 2020,

Even before COVID-19, there was already high growth and adoption in education technology, with global ed-tech investments reaching US\$18.66 billion in 2019 and the overall market for online education projected to reach \$350 billion by 2025. Whether it is language apps, virtual tutoring, video conferencing tools, or online learning software, there has been a significant surge in usage since COVID-19.

As per the report, in response to significant demand, many ed-tech and online teaching and learning applications and portals are providing free access to their education services, including edtech like BYJU'S, launched in 2015, a learning program for classes 1-12 and for competitive examinations such as JEE, IAS, NEET etc. At present, it is the world's most highly valued ed-tech company. "Since announcing free live classes on its Think and Learn app, BYJU has seen a 200% increase in the number of new students using its product, according to Mrinal Mohit, the company's Chief Operating Officer" (World Economic Forum). Mrinal Mohit, the Chief Operating Officer of Byju's, said, "We are extremely heartened by the overwhelming response to the free lessons on our learning app with 6 million new students learning in March 2020 alone. This reiterates the fact that online learning mediums are a great enabler in helping students when they learn from home" (Times of India). There was a sudden rise in enrolment in online learning during the Covid-19 pandemic period.

Tencent Classroom is a Chinese ed-tech company, the company saw its peak in mid-February of 2020 during the Covid-19 period when the Chinese government asked students to learn with an online platform. "This resulted in the largest "online movement" in the history of education with approximately 730,000, or 81% of K-12 students, attending classes via the Tencent K-12 Online School in Wuhan. "I believe that the integration of information technology in education will be further accelerated, and that online education will eventually become an integral component of school education", says Wang Tao, Vice President of Tencent Cloud and Vice President of Tencent Education (World Economic Forum). The Covid-19 period played a significant role in promoting online learning.

The Imperial College London started offering a course on the science of coronavirus, which is now the most enrolled class, launched in 2020 on

Coursera. Dr Amjad, a Professor at The University of Jordan who has been using Lark to teach his students says,

It has changed the way of teaching. It enables me to reach out to my students more efficiently and effectively through chat groups, video meetings, voting and document sharing, especially during this pandemic. My students also find it easier to communicate on Lark. I will stick to Lark even after coronavirus, I believe traditional offline learning and e-learning can go hand in hand (World Economic Forum).

Many professors who have explored this new method of learning during the Covid lockdown period, have liked it and continued using it post covid-19 as well.

According to an article by Kaur, “Globally, there are more than five billion mobile users in the world, and more than half of all internet users rely exclusively on their mobile devices. Most teenagers (78%) use their smartphones instead of laptops to access the internet.” During the Covid-19 period of social distancing when libraries were also shut and not accessible to students and researchers, mobile devices and technology helped students to continue their learning with digital libraries, and Google searches. One such example of a digital library in India is the National Digital Library of India which is sponsored by the National Mission on Education through Information and Communication Technology (NMEICT) and the Ministry of Education (MoE). The library was created by IIT Kharagpur which has more than 8 crores and 86 lac resources including books, audiobooks, PDF files and many more for students of all streams. Mobile devices and online activities can help students in studying. They can save time when using these tools. Mobile learning saves travelling time and resources.

Mobile technology has introduced a new way of teaching that enables teachers and students to interact and to teach and learn through various chat groups, video conferencing, applications and sharing document. Communication becomes easier and more convenient for students through learning apps. “With this sudden shift away from the classroom in many parts of the globe, some are wondering whether the adoption of online learning will continue to persist post-

pandemic, and how such a shift would impact the worldwide education market” (World Economic Forum), though as per World Economic Forum’s report on 29 April 2020, there has been a significant surge in online learning and m-learning ever since the Covid-19 lockdown. During the Covid-19 lockdown period, mobile learning has upgraded the quality of university students’ learning, “some of the effects are access to and provision of current and up-to-date information (90%), access to online lectures being made possible (95%), the quick transmission of information (85%), and improved academic performance (80%). Even prior to the onset of the COVID-19 pandemic, a staggering 260 million children and youth across the globe found themselves excluded from formal education. A disheartening 89% of children in low-income countries experienced what the World Bank terms ‘learning poverty’—a condition where these young individuals cannot read and comprehend a basic text by the age of 10. This predicament arises from various factors, one significant contributor being the geographical placement of schools, discouraging many, especially girls, from pursuing enrolment. Additionally, challenges such as limited access to and the prohibitive cost of educational materials further compound the difficulties in attaining a proper education (GSMA).

If the school is at a distant location, then rural female students are prohibited from going to school. If a small town or rural area lacks good educational institutes, students do not get proper education due to financial problems. Such problems can be solved with online learning as smartphones in India are affordable and much cheaper than laptops and desktops and students can study sitting at home.

Many times, people fail interviews due to a lack of English-speaking prowess. Such problems can be solved just sitting at home at economical means. In modern days, all parents wish to give English medium education to their children but may be unable to provide it due to lack of facilities. In such situations, MOOC education, m-learning, and ed-tech companies help them to get an education at affordable prices. There is a spike in online learning during Covid-19 and for such reasons online learning and m-learning is here to stay and flourish.

2.14 The Efficacy of English Language Learning with MALL

Mobile learning is a new learning model to traditional classroom teaching and learning, it is an evolution of computer learning. Mobile learning was introduced for educational and language learning purposes after the development of the Internet and the World Wide Web (WWW) which was created in 1992. There have been many technological advancements in mobile phones ever since. Learning with mobile phones and digital devices has become possible because of such technological advancements which include developments in wireless communications like GPS, Bluetooth, LAN, WAN, Wi-Fi, and global wireless technologies including 4G and 5G technologies and satellite systems. The development of various applications made learning possible with mobile devices which were made for just communication purposes, mobile phones which are new computing devices and when learning with mobile phones emerge, it was called mobile learning (O'Malley et al. 06). O'Malley et. al. defined mobile learning as, "Any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies." Through mobile learning, one gets more opportunities.

Learning was considered a classroom process but along with the change of time, educational strategies have become advanced and many theories about learning outside the classrooms were introduced by educators. Mobile learning is essential when thinking of the role of mobility and communication in learning environments. In m-learning, the learner has the freedom of time and place. It plays a pivotal role in learner-centred education. In mobile learning theory, the learner is the mobile one, not the technology. Though with mobile learning, vast study resources could be accessed through the World Wide Web (www) but at the same time, issues related to privacy can be faced by learners. Mobile learning brings a revolution in the world of education. According to an article by Richards in 2021 about the Theory of Mobile Learning, revolutionary transformation centres on the utilization of mobile broadband to extend human assistance beyond the traditional classroom and school hours, leading to the creation of novel frameworks for formal education. Disruptive change entails

incorporating mobile devices into a strategy aimed at phasing out rigid, conventional educational methods. Technological knowledge plays a key role in m-learning.

Sharples et al. in their scholarly article ‘Towards a Theory of Mobile Learning, mentioned that the study conducted by the US National Research Council in 1999 concluded an educational effectiveness across ages and subject areas. It concluded that effective learning is about learner-centred, knowledge-centred, assessment- centred and community-centred.

- *Learner-centred*: Students play an active role, they learn, attain knowledge, sharpen their skills, and enable reasoning based on their own experience.
- *Knowledge-centred*: The content and curriculum are designed from a sound foundation of validated knowledge, taught efficiently and with inventive use of concepts and methods.
- *Assessment-centred*: Assessment tests the ability of the learners, offering diagnosis and formative guidance that builds on success.
- *Community-centred*: Successful learners form a mutually promotive community, sharing knowledge and supporting less able students.

The theory of learning is changing with the introduction of digital and mobile devices which aids in educational purposes. M-learning is more individualistic and learner-centred as these devices are more personal and user-centred. Mobile learning accounts for the mobility of learners, it analyses learning as collaborative, ubiquitous and lifelong.

Sharples et al. in *Mobile Learning: Small Devices, Big Issues* described ‘mobile’ in mobile learning, which states.

- *Mobility in physical space*: Learning can take place anywhere as people can learn in between gaps of daily routine. The location may be relevant to the learning, or merely a backdrop.
- *Mobility of technology*: All learning resources can be carried around in one single lightweight portable device.
- *Mobility in conceptual space*: Learning competes for an individual’s shifting wavering attention. There are numerous learning episodes

undertaken by an adult every day, so attention moves from one conceptual topic to another driven by personal interest, curiosity, or commitment.

- *Mobility in social space:* Learners can learn from anywhere within any social group.
- *Learning dispersed over time:* Learners can have a variety of learning experiences across formal and informal learning contexts (235).

According to Sharples et al. in *Mobile Learning: Small Devices, Big Issues*, “Mobile learning offers new ways to extend education outside the classroom, into the conversations and interactions of everyday life” (237) as mobile learning creates quick interactions and provides flexible learning. Learning does not take place just to ‘deliver’ but to facilitate. Sharples et al. in ‘*Mobile Learning: Small Devices, Big Issues*’ argue that there is a conflict between traditional classroom learning and informal mobile learning and “schools being unable, or unwilling, to adapt to the new patterns of learning and social interaction outside the classroom and young people seeing school learning as irrelevant to their skills and interests” (Sharples et al. 246-247). It suggests that schools can save costs by allowing students to bring their own digital devices to school for educational purposes. Technology can enrich learners’ collaborative knowledge-building with other learners and teachers.

With mobile phones and their features, students can contribute to the learning process and learning could be student-centred. According to Sharples et al., 2009 in *Mobile Learning, Small Devices, Big Issues*, A project was funded by the United Kingdom Department for Culture Media and Sport named ‘MYARTSPACE’. The project was undertaken to assess m-learning technology for around 3000 school students on field trips to art galleries and museums. While visiting art galleries and museums, students were provided multimedia phones running a Java application that enables students to capture pictures, write notes and make audio recordings. Through the GPRS phone network, these notes, pictures, and recordings were sent to personal websites which provide a multimedia “weblog” of the visit. Back in the classroom, they made presentations with the media they had created. In this project, teachers specified that these activities helped students be more actively involved in field trips than

in previous trips and students got a chance to do more relevant and self-satisfying work. The study showed that MyArtSpace had a positive impact on school museum visits providing the scope for improvement in the technical and educational aspects.

Sharples et al., 2009 described another project named the AMULETS Project. AMULETS stands for “Advanced Mobile and Ubiquitous Learning Environments for Teachers and Students” (243). The project “explored how to design, implement and evaluate innovative educational scenarios combining outdoor and indoor activities supported by mobile and ubiquitous computing” (Sharples et al. 243). The project explored how teachers can develop and implement novel educational scenarios for indoor and outdoor activities using ubiquitous devices.

Ogata and Yano in their scholarly work *Knowledge Awareness for a Computer-Assisted Language Learning Using Handhelds* (2005) describe that the main characteristics of mobile ubiquitous learning are permanency, accessibility, immediacy, interactivity and situating of instructional activities. According to a study conducted by Thornton and Houser in *Using Mobile Phones in English Education in Japan* (2005) related to the English vocabulary lessons sent to students via e-mail, the study revealed that 71% of students preferred learning on mobile phones to PCs and 91% of students felt this as a valuable teaching method in Japan.

The article discussed the pivotal role of email using mobile phones in academics. The survey was conducted by Basoglu and Akdemir as described in *A Comparison of Undergraduate Students' English Vocabulary Learning: Using Mobile Phones and Flash Cards* (2010), the article discusses mobile phones for learning purposes and acquisition of the English language vocabulary. A survey of sixty students of undergraduate level in the Black Sea region of Turkey was conducted and results indicated that using mobile phones as a vocabulary learning tool is more effective than one traditional vocabulary learning tool. Banerjee and Bose have conducted a study entitled *Higher Education Through Mobile Learning: An Analysis Of Students From Kolkata* (2011), the article talks about the changes in the education system from the chalk and blackboard method to this day, using technology.

The findings in the study revealed that the awareness level regarding m-learning is found to be quite high and that the number of people willing to take courses through m-learning mode is high but, at the same time, there is a tendency of high deviation and distraction visibly noticed among learners in the due course of learning.

Mobile Learning vs. Traditional Classroom Lessons: A Comparative Study (2014) by Furió D., Juan Carmen, Segui I & Vivó R, a study was conducted on thirty-eight participants of 8-10 years of age group to learn the effectiveness and satisfaction of participants using an iPhone compared to a traditional classroom lesson. Both iPhone and traditional classroom methods had the same learning content.

Results showed that the iPhone method achieved higher knowledge than the traditional classroom method. Although no statistically significant difference was found between the methods. In analysing the motivational outcomes, the iPhone game learning pattern was more motivating and satisfying. As the iPhone game results in more motivational effects, it can be suggested: “That games of this kind could be used as a tool in primary schools to reinforce students’ lessons” (Furió et al. 01). Game-based learning is gaining popularity and can be used as a part of English language learning.

Bansal and Joshi conducted research in the paper *A Study of Students’ Experiences of Mobile Learning* (2014), to study learner’s perceptions of the ubiquitous aspect of WhatsApp m-learning found that the majority of students show a high number of positive attitudes towards m-learning and that there is a general agreement among the students who see the bright side of m-learning and see its positive consideration as a good vehicle for learning. The study also revealed that learners who are married, prefer traditional learning over WhatsApp learning. Shamsi et. al in *The Role of M-Learning in Decreasing Speaking Anxiety for EFL Learners* (2019) conducted a study of 9 participants and post-test teaching was conducted through WhatsApp.

The results show that m-learning has significantly decreased the learners’ anxiety in speaking English as a foreign language and learners achieved communication comprehension. Joy, Anumula, and Sastry in *Impact of*

WhatsApp Interaction on Improving L2 Speaking Skills (2020) conducted a study, and the results revealed the positive impact of WhatsApp learning on the participants. The role of teachers is to facilitate and motivate the silent members of the group. Gonulal in the Research article '*The Use of Instagram as a Mobile Assisted Language Learning Tool*' (2019) conducted a qualitative and a quantitative study and the results showed that Instagram as a MALL tool has the potential to help English language learners (ELLs) to improve overall language skills in general and vocabulary and communication skills in particular. The study reveals that Instagram, social networking platforms and MALL applications can be used as an effective mobile learning tool.

Elaish et al. in *Mobile Learning for English Language Acquisition: Taxonomy, Challenges, and Recommendations* (2007) mentioned that mobile learning has become a global trend, especially among English language learners. The research attempted to provide a comprehensive analysis of the existing literature from 2010-2015. The result shows that most of the studies related to mobile learning for the English language are related to the non-application m-learning technologies and for the English language learning context blended applications were widely used. The main challenges found related to learning are quality, usability, integration, financial costs, security and privacy, pedagogical practice, and safety. According to Fischer in their work entitled *User Modelling in Human-Computer Interaction* (2001), the main objective of human learning with technology and computer interaction is to make the system more usable and useful.

"The challenge in an information-rich world is not only to make information available to people at any time, at any place, and in any form, but specifically to say the "right" thing at the "right" time in the "right" way" (Fischer 65). Hashemi et al. in '*What is Mobile Learning? Challenges and Capabilities*' (2011) focused on the capabilities and limitations of Mobile learning. According to Hashemi et al., m-learning does not replace traditional learning, but it is just another way of learning using technology. Sarraf, Elgamel and Aldabbas in their scholarly work *Mobile Learning (M-Learning) and Educational Environments* (2012) asserted that M-learning makes the merge and connection between technology and education possible. The paper

discussed the background, opportunities, and challenges of m-learning and how m-learning can be used to complement the learning process in our schools and universities.

Abugohar et al. in their work '*Smartphone Applications as a Teaching Technique for Enhancing Tertiary Learners' Speaking Skills: Perceptions and Practices* (2019) conducted a study that included teachers' perceptions about teaching with technology, smartphone applications for teaching oral skills to the tertiary students of Saudi and blended learning. The findings revealed that most participants are inspired and have positive attitudes toward using smartphone applications. Sun et al. in '*Improving the English-Speaking Skills of Young Learners through Mobile Social Networking*' (2017) conducted a study of learning English-speaking skills using social networking sites (SNSs) and mobile learning in the experimental group. The results revealed that fluency in speaking English in the experimental group was significantly larger and mobile learning enabled learners to learn in low low-stress situated context. However, progress in accuracy and pronunciation were similar in the control as well as the experimental group.

McQuiggan et al. in *Mobile Learning: A Handbook for Developers, Educators, and Learners* (2015) found through interviews with classroom teachers that mobile technologies added a level of engagement to any activity in the classroom and students enjoyed and were engaged in their interaction with mobile devices. According to a survey report by Davie and Hilber in *Mobile Assisted Language Learning: Student Attitudes to Using Smartphones to Learn English Vocabulary* (2015), the survey of 68 respondents includes 48 male students and 20 female students. Their age ranged from 19 to 37 years, 77% of the engineering students and 72% of the business students strongly agreed or agreed to the question if Mobile Learning helps to improve their English. 69% of Engineering students and 50% of Business students answered positively to the question if they are interested in using smartphones to learn English.

"The use of mobile-assisted language learning does have potential. It is therefore very worthwhile to pursue further research in this area. The literature review and results show that there is a lot of room to expand and extend this work" (Davie and Hilber 77). Sung, Chang & Yang in '*How Effective are*

Mobile Devices for Language Learning? A Meta-Analysis (2015) mentioned that “The present meta-analysis of 44 peer-reviewed journal articles and doctoral dissertations that were written over 20 years (1993–2013), with 9154 participants, revealed that mobile-device-assisted language instruction has produced a meaningful improvement with an overall mean effect size of 0.55” (Sung et al. 02).

A study was conducted by Nastase and Felea as described in *Mobile Learning in Higher Education: A Survey Among the Students of The Bucharest University of Economic Studies* (2016). The study was conducted on 187 Romanian students in the 18-27 years age group. The results showed that 98.9% of students have an internet connection and 86.1% of students use a mobile device as a learning tool. The study indicated that students have positive responses to mobile learning and are willing to adopt mobile learning as an educational tool and the obstacles they face for mobile learning are administrative factors, lack of course material and lack of connectivity.

Fouzdar and Behera in their research titled *Attitude of Post Graduate Students towards Mobile Learning* (2017) observed that the attitude of PG students is neither more favourable nor unfavourable towards mobile learning, i.e., satisfactory or average in attitude towards mobile learning. Kusmaryani, Musthafa and Purnawarman in the paper *The Influence of Mobile Applications on Students’ Speaking Skill and Critical Thinking in English Language Learning* (2019) discussed that mobile applications help in sharpening speaking skills with online dictionaries and language translators and develop critical thinking in students. The unstable internet connection can be challenging at times, but students seem eager to learn the English language with mobile phones.

Internationally yet close by, a study conducted by Ali, Mahmood, and Yasmeen in ‘*Exploring the Efficacy of Mobile Assisted Language Learning amongst Pakistani ESL learners: An Attitudinal Study*’(2020) to understand the perception of higher secondary Pakistani students about the efficacy of mobile phones for language learning purpose in the classroom. The findings revealed that Pakistani students feel energetic, positive, and enthusiastic about using mobile phones for learning purposes in and out of classrooms. Venugopal et al.

in their paper Venugopal, N. et al. “Adoption of M-Learning to Enhance LSRW Skills for Learners of English as a Second Language.” *Journal of Xi'an University of Architecture and Technology*, conducted a study of learning the English language with websites and mobile applications, the research study showed that all participants have improved their language skills. The paper also tried to promote the concept of self-study for English language learning (2020).

A research work by K Lakshmi titled ‘*A Study On The Effectiveness Of M-Learning In Developing English Speaking Skills of Rural Engineering Students in Vellore District*’ focuses on the speaking skills of Engineering students of rural areas of Vellore district in Tamil Nadu. The experimental study shows a detailed analysis of the various methods for improving English language speaking skills and shows that m-learning can be considered an advanced tool for the fast-moving society. The study states that learners in rural areas lack awareness about learning with technology and learning beyond the traditional classroom method. The study was undertaken to create awareness among such learners and to make learners understand the concept of learning beyond the classroom. Hence, the quantitative study was conducted using a questionnaire and analysed that learners are aware of the importance of speaking English for better career prospects and higher education. The questionnaire-based study and interaction with learners also revealed that in rural areas, teachers and learners teach and learn the English language with the sole focus on scoring marks in examinations. So, learners were not able to frame appropriate and legible sentences to communicate in English.

This study carried out pre-test and post-test data collection of students for the analyses of their English language speaking skills and it found that learners of rural areas who had very little understanding of the English language were underconfident with communication in English. But post-test, learning to speak the English language with a mobile phone, learners showed effective results. They developed a positive attitude towards the English language and became confident to converse in English. The study also suggests that students’ regional background, parental background and geographical position are some of the few factors that influence learners learning of the English language. The

study revealed that students of rural areas, being regular users of mobile phones were unaware of the possibilities of using mobile phones for language learning.

A research work by Mittal titled '*A Study of Acceptance of Mobile Learning in Higher Education*' (2019) studies mobile learning practices in Indian universities. The study provides information about the practice of teachers and students of using mobile phones for educational purpose and their acceptance towards mobile learning. The study reveals that the perspectives of teachers and students can vary about using mobile phones for learning purposes. Teachers suggest that mobile technologies are an integral part of teaching and that teachers can use mobile devices comfortably. Moreover, they are receptive to the advancement of technology in the educational sector and have an awareness of mobile learning which has a positive outcome in learning.

The study also shows that mobile phones have replaced laptops and desktops in the field of sending and receiving emails, watching educational videos, or browsing YouTube. The findings of the study conclude teachers' acceptance towards mobile learning with various advantages such as increased communication with colleagues and their students, the flexibility of time and place and active participation of students. The finding shows that mobile device has the potential to be used as an educational tool.

The research was conducted by P. Jaykumar in *Teaching English Grammar through Android Application to Teacher Trainees of Chennai District with reference to Verbs: An Experimental Study* (2019). The study is about the difficulties which B.Ed. students of Chennai district experience in the grammar section of the English language in their undergraduate programme. The questionnaire-based research shows that grammar learning with mobile devices using Android applications has effective results and has a more productive impact than the conventional method of teaching. The study aimed to enhance the skills of B.Ed. students in writing and to help them learn independently using Android applications. The study reveals that learning with Android applications has become easier because of their flexibility. More than 500 learners can be taught on an Android application simultaneously. With an Android application, examination and evaluation can become an easier process

and it reduces the errors and time of a teacher. Teachers can devote more time to sharpening other skills in students.

There is research conducted by Chaudhari in *The Application of ICT Tools for Learning English and Communication Skills: A Case Study of Undergraduate Engineering Learners* (2019). The research was to study the effect of English and Communicative skills among undergraduate engineering students using various ICT approaches and through channels such as Facebook, WhatsApp, YouTube, Blogs, and mobile applications. The result of the research shows a positive impact on students. They were motivated and keen on learning with the technology and learners gave quicker responses using mobile devices rather than pen and paper. The study shows that “96% of learners prefer to learn through the Internet which reflects the paradigm shift in education and the major preferred ICT tools for learning were Mobile Apps, Videos and WhatsApp” (Chaudhari 196).

The research was conducted by Patel entitled ‘*Effectiveness of Podcast Based ESL Programme at Tertiary Level*’(2019). As the podcast-based learning concept is not very popular in Gujarat state as well as India, the research tried to study the opinions of participants about podcast-based ESL learning and the research reveals the effective results of listening and speaking skills of podcast learning on participants. The success of the programme could also be seen through the positive response towards the evaluation of the podcast-based ESL programme. The study gave new directions to teachers and students for teaching and learning of English language with podcast-based programmes which can help sharpen the skills of pronunciation, reading, writing etc.

Research work done by Parmar titled, ‘*Acceptance and Effectiveness of Mobile Learning in Teaching and Learning of English Language: A Study*’(2015). The research aims at mobile learning and various factors related to mobile learning such as how mobile learning complements in-person learning. The readiness of learners to accept mobile learning technology, the difference between e-learning and d-learning, and the issues that learners face while learning with mobile phones. The research was a questionnaire-based survey and the study revealed that most students spend a lot of time with their mobile phones. Students believe that with mobile devices their language proficiency in the

English language has been improved and they can get connected to their teachers 24*7. The study shows that blended learning of mobile phones and traditional classroom methods also gave effective results, and it is a student-centric pedagogy.

Students believe that mobile phones can foster continuous self-motivation. Students get the advantage of tracking many facilities such as planners, reminders, and notifications. Social networking on mobile phones helps students to collaborate with their peers, aiding in self-dependent learning of students and promoting group activities. It fosters classroom language learning among students.

Research work by Shah is titled, '*Mobile Assisted English Vocabulary Acquisition a Study in Commerce College Affiliated to Gujarat University*'(2020). The research was conducted on 500 students affiliated with Gujarat University about mobile learning through an online questionnaire on the age group of 17-21-year-old students. Many students claim that they spend their time using mobile phones with internet connections and they generally learn about new words and vocabulary through the mode they enjoy such as reading blogs, magazines, or reviews on the internet or through music, movies, and internet games. Many participants revealed that they use digital tools like vocabulary applications for inculcating new vocabulary.

2.15 Conclusion

“Mobile phone is easily the most profligate technology the world has ever seen, in terms growth, reach and technical advancement” (Alrasheedi and Capretz 211). The mobile phone has many technologically advanced features and has immense potential for learners to learn. “Mobility combined with collaborative learning makes the m-Learning platform different from any other existing learning platform, whether it is traditional face-to-face learning or other technology-based platforms like e-Learning” (Alrasheedi and Capretz 212), since it is a wireless device, it gives flexibility to learners about time and place, it is technologically capable and has all the features which are required for getting education through mobile devices. Mobile learning has a feature of collaborative learning.

It can give complete education to learners through a single device. Through www, various applications, online libraries, books, and information can be accessed by learners. Learners can attend online classes, can share spreadsheets and PowerPoint presentations, and can appear for examinations in online mode. With mobile phones, learners can learn at a cheaper cost and without going to educational institutes. Virtual learning is becoming a reality with mobile phones which are now available at affordable prices so more learners can avail of its opportunities. M-learning has the potential to become a prime method of teaching and learning, especially for language learners. The use of mobile devices in the language learning process has many advantages which help learners for active learning, improves communication, instant feedback process, can access content immediately and there is no limitation on time and restriction of place.

Language learning with the mobile phone also cuts the cost in many aspects as “The cost of building is also decreased when the lecture halls are not needed. This allows students to work together and generate projects by using computers and internet-aided environments” (Keser et al. 104). In the modern education system when the mobile phone is one of the most accessed digital tools, its usage in learning is inevitable and is a much-needed tool in a modern educational system. MALL plays a crucial role in teaching-learning techniques of higher education. “Mobile learning is a new research trend in this field and addresses mobility in different dimensions: mobility of technology, mobility of students, mobility of educators and mobility of learning” (Criollo et al. 01). Mobile phone for language learning provides flexible learning to learners. It can replace pen and paper with technological devices in many aspects of learning. With the invention of new tools and the internet, the way of learning has been updated. In the traditional classroom method of learning, students listen to the lectures given by teachers in particular time slots, whereas in mobile learning students can download lectures in podcasts audio or video form and can listen to them on their own time.

Many Indian students still have no idea about education with mobile phones and internet connectivity. Making such students aware of the concept of learning with technology improves the quality of the learning experience and

this makes students attend schools without going to the schools or moving to metropolitan cities. The Covid-19 lockdown brought awareness to a vast majority of students and parents about the concept of digital learning which can help students in the long run. They might find out about online courses and can educate themselves.

Technology was making its path in the education industry and the Covid-19 lockdown period has proved the potential of technological-based learning by acting as an accelerator and a catalyst. In the Covid-19 period, when social distancing was a norm, and physical classes were not possible, online, and virtual learning became an integral part of teachers' and students' life. Online learning has witnessed its peak during this period. The demand, value, and power of Edtech companies grew exponentially during the nationwide lockdown. Digital learning bridged gaps in education all over the globe and proved that with the virtual mode of learning, education can bring equality. Equality in socio-economic factors in gender roles like a girl child can also be studied with tech-based learning. As per the report by Chebib, "at the GSMA, we have developed a Mobile Internet Skills Training Toolkit to promote digital literacy, help people use the internet more safely on their mobile and ensure they have the skills required for a digital future". Training in mobile learning is much needed to promote digital literacy.

During the Covid-19 lockdown, online learning was given through some free online platforms such as Zoom, WhatsApp, Facebook Live, YouTube Live, Google Meet, Teams, and Skype. Teachers and students just had to download the applications and had to register themselves. These online platforms taught many students and teachers to learn via virtual mode with mobile phones which leads students and teachers to lifelong learning while promoting m-learning. The pandemic witnessed the re-enforcement of technology-enabled teaching and learning processes. The researcher also has personal experience of having taught through online classes, circulating online notes and conducted several virtual meetings during the lockdown. The crisis time in India demanded the teachers to use virtual mode and many of the researcher's colleagues who were acquainted with this digital medium, found it easier and more convenient. Hence, the social distancing period helped many teachers and students to

understand the value of the online learning process. It can be believed that this can be widely promoted for future learning processes too.

The review of related literature gives a detailed view of the current state of mobile-assisted language learning for the English language and the technological advancements of mobile learning. The study also describes salient features of mobile-assisted language learning which helps analyse the scope of MALL for the English language. The perception of teachers and students about MALL decides its success. Teachers and students have their roles in education which are different from each other. The perspective and opinions of tutors and learners related to mobile learning for the English language have changed post the Covid-19 pandemic.

Educators are the ones who design the curriculum and introduce mobile learning methods to the students. They also observe the resistance and acceptance of students about any new learning method. So, to understand the perception of teachers on mobile learning and their observation about the attitude of students with mobile learning is very important to implicate mobile learning in education.

The researcher has tried to bridge the gap by considering the viewpoint of college and university teachers about MALL and how the perception regarding it has changed post the Covid-19 lockdown. The researcher has also tried to measure the indirect role of institutional support in mobile learning. The research is about understanding the perception and preference of teachers about MALL for the English language and the attitude of students to learning using mobile devices. The role of the teacher is more important for teaching through mobile devices because, with the teacher's guidance, students can accept the digital mode of learning. Also, teachers must look after several factors such as the security and privacy of students.

There is an increase in the number of research related to MALL for the English language but is limited and related to the perspective of an educator, especially in the Gujarat region, hence the research is conducted to fill this research gap. So, the literature review tries to unfold the theses and research on m-learning, its concepts, and possibilities in enhancing English language skills, also there

have been studies that focus on its impact on education establishing the relation between the technology of mobile phones and its impacts on the education system.

As per the review of related literature, there are works done in the field of MALL which include education with mobile phones, comparison with the traditional method, game-based mobile learning, and CALL vs MALL but there are very few researches that deal with evaluating the efficacy of Digital Teaching and Learning of English Language through Mobile Assisted Language Learning (MALL) in India that may lead to its implementation in the mainstream institutionalized teaching and learning as a pedagogical tool. There is not much work done on reading and learning of English language in the Indian state of Gujarat and questionnaire-based survey with teachers to understand the opinions of teachers about learning the English language with mobile devices.

The research tries to explore the way forward for teachers and students who are already using mobile devices for language learning. It also tries to identify teachers' willingness and readiness to teach the English language with mobile devices. Meanwhile, there is a research gap in understanding the change in the English language learning pattern post the Covid-19 lockdown which could be explored with this research work.

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