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Influence of Education 4.0 on English Language Instruction in Telangana's Engineering Institutions

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Abstract: The current study focuses on the effects of English language instruction using Education 4.0 in Telangana's engineering institutions. Telangana has many educational facilities that offer Education 4.0, or technology-based learning. It fosters creativity in education. At the fundamental level, students can learn by being provided with a self-learning opportunity. The majority of the subjects were learned through Education 4.0. As a result, Telangana kids also learn English via Education 4.0, which has an effect. The purpose of this study is to evaluate how Education 4.0 has affected Telangana's English language instruction. In Telangana's engineering institutions, survey-based research has been done for this aim. The analysis used in the study is quantitative. The data gathered from the chosen educational institutions were analysed using SPSS software. The findings indicate that adopting Education 4.0 as a tool has considerably influenced English language acquisition. The kids benefit from excellent learning thanks to its self-supporting, stretchable learning system. This report also suggests further research to determine the effects of Education 4.0 in other regions of India and overseas.

Keywords: Education 4.0, Digital Learning, Technology, Language, Survey

1. Introduction

Education 4.0's equivalent, Education 4.0, transforms every aspect of society, notably education, into a digital 4.0 system (Hubackova, 2015). With the help of technology, Education 4.0 has grown in popularity and significantly improved the field of education (Pangandaman, 2019). The use of Education 4.0 in learning is an essential way of learning today. The Education 4.0 strategy is thought to foster innovative and clever behaviour in the classroom. Education 4.0, in general, presents technology-based techniques for improving high-quality education. This might be stated as the fact that kids do not have to fall behind (Sanda & Klimova, 2021). Lectures, textbooks, and conventional classrooms are all examples of lecture-based techniques. As an approach, students must publicise and document the materials that are available online. Enrol in online courses, flipped lectures, webinars, seminars, and video recording calls to get course material (Crystal, 1997). As the current generation of students has grown up in a contemporary and digital world, the use of cutting-edge technology in various forms for fundamental English language education and learning has gradually become normal practice globally.

Additionally, it is certain that technology will continue to play a crucial role in developing and improving our civilization (Zheng, 2009). As a result, it appears necessary and anticipated to employ sophisticated and immersive technologies in students' learning methodologies technologies that also support the method of instructing English as a language. Based on this information, technology has evolved from communication technologies (ICT) to intelligent/smart gadgets and robotics. To improve the English language, recent years have seen instruction and learning in courses utilising Education 4.0. Students are attempting to learn and improve their command of the English language through Education 4.0. Not only does technology have a good impact on social life, but it also has a beneficial impact on education. As technology becomes more prominent in learning environments, there is a growing expectation that most students will use digital tools to aid in the classroom's instruction and student learning. However, due to the fast-changing technological

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developments in the field, technological gadgets are commonly used to provide more practice in English language classes.

The current study aims to better understand how students in Hyderabad, India, perceive education, particularly how the 4.0 curriculum is enhancing English language acquisition. Earlier research focused either on students or professors; however, the proposed study only considers students' viewpoints. Furthermore, the present study differs from previous investigations in that it focuses on students' perceptions of Telugu, their mother tongue. A questionnaire was also utilised in earlier studies to collect data. Still, the current study also included pre-and post-testing and a comprehensive questionnaire to acquire information from the students. On the other side, the purpose of this research is to examine how students perceive utilising Education 4.0 to learn English. The ideas and results presented in this study differ from those of earlier studies and their outcomes.

2. Literature Review

At various levels, English language learning generates numerous impacts and revolutionary ideas. Many studies on Education 4.0 have been conducted on various topics such as learning, teaching, technology, etc. The studies are:

The study by Peters deals with digital learning. Existence has become easier than it is in today's society, especially with ongoing technological advancements and breakthroughs. As it stands, it can be seen in every area of education associated with the digitalized world, which also impacts schools and colleges. As a result, in the world of education, "*digital learning*" using Education 4.0 has taken its place. This study aims to present, by evaluating several works on this topic, some theoretical information on digital learning that may be considered. According to research (Anggraeni, 2018). , the future of learning will be digital, using Education 4.0, which will influence (Anggraeni, 2018) not only the learning method but also the learners. The technologies utilised in schools for language learning and teaching (LLT) are rather diverse nowadays, and some of those that have become vital to language practice are briefly explained in this article. Because English is the most commonly "*learned*" and "*taught*" second or foreign language in the world, the purpose of this article is to look at how advanced and modern technology are used to aid the process of instructing and learning the English language for students at various stages of school (Sharma, 2019). Technology has always been crucial to academia and language learning in general, including English language instruction using Education 4.0 (Peters, 2002).

The study of Priya Sharma focuses on Industrial Revolution 4.0 in the educational system. Sharma summarises that Education 4.0 is exceptionally advantageous to teachers in innovative teaching. They can use a variety of approaches and resources to help students learn new concepts. Education 4.0 benefits pupils in both learning and educational systems (Sharma, 2019). According to Cagatay Catal and Bedir Tekinerdogan's research, technology is advancing in many areas, particularly knowledge for education in teaching, life sciences, etc. The authors present the work in progress of Industry 4.0 and how technology influences schooling. They discuss the importance of education in the biological sciences (Catal, 2019). Higher education in Malaysia is the subject of research by Rasika Lawrence, Lim Fung Ching, and Haslinda Abdullah, who also embraced Education 4.0 in tandem with the fourth industrial revolution. The authors look at both the advantages and disadvantages of Education 4.0. With the development of technology, teaching techniques have changed, and several class management strategies have been adopted (Lawrence, 2019). With the use of Whatsapp and Instagram, Candradewi Wahyu Anggraeni's study shortens education 4.0 in the classroom and imparts it to students. Using a qualitative approach, the researcher investigated education 4.0 from the perspectives of English Language Teaching professors and students (Anggraeni, 2018).

Because the US, Germany, and China are technologically sophisticated and use technology in several fields, including education, the research by Chu-Chi Kuo, Joseph Shyu, and Kun Ding highlights industry 4.0. It performs a comparative analysis of these countries. The authors then go through innovation and technology in certain nations (Peters, 2002). The research by Esdras Paravizo, Omar Cheidde Chaim, and colleagues shortens the effort required to research gamification for manufacturing education since players are drawn to particular games and can learn through gamification. It teaches pupils puzzles, quizzes, and riddles, among other things. According to the authors, gamification enhances the industry 4.0 education system and stimulates learners to study more (Paravizo, 2018).

The findings of Elisa Tosello, Nicola Castaman, and Emanuele Menegatti confirm the usage of robots to instruct pupils since they are up-to-date and understand all about technology. The authors recommend using robots to instruct pupils, and they must learn a lot from robotics. The writers work with people and robots and are involved in Industry 4.0. (Tosello, 2019). According to the research of Joshua Grodotzki, Tobias Ortelt, and Erman Tekkaya, universities must provide virtual labs for their students. A teacher can use virtual laboratories to exhibit photos, videos, audio, and other media to help students enhance their abilities. Virtual labs, in particular, are required for engineering students since they are linked to technology and innovative instruments or equipment based on technology. Students can push the boundaries of their inventions in the lab by experimenting with various technologies (Grodotzki, 2018). It is evident that both Education 4.0 and Digital English are involved in the research by Hariharasudan and Sebastian Kot, which received high marks for its scoping review technique. The authors examined the connections between Education 4.0 and digital English and presented evidence of the importance of both in Industry 4.0. Additionally, the present study explores the impact of English language learning using Education 4.0. The following part expands on the significance of ELL analysis using SPSS software.

3. Methodology

The influence of Education 4.0 on English language acquisition using Education 4.0 among Engineering students in Telangana was examined to assess the probe's findings. Additionally, the data on the effects of ELL utilizing Education 4.0 are analysed using SPSS software.

3.1 Acquiring Language Ability Using Technology

Foreign language instruction and study are fantastic artistic endeavours. By fusing science, culture, and geographic or environmental context, this creative ability results in a person with better communication abilities. Listening, reading, speaking, and writing are the four pillars of language education and development. They are fundamental English skills. It works best with the instructional tools that are best suited to it. It has been stated that using different technological instruments significantly influences acquiring each language skill (Mawer 2011). Depending upon the type of language skills one wishes to enhance, various new and contribute to effective are being employed in schools worldwide. However, as a long-time English language instructor, the researcher can affirm that the variety and diversity of the technology employed by adult learners are different from that of young learners and youngsters (Saricoban, 1999). The researcher has discovered over the years of education that new technologies don't necessarily replace old ones. While a novel technology is not always available, the prerequisites for the lesson and the clear needs of student learners motivate instructors' options.

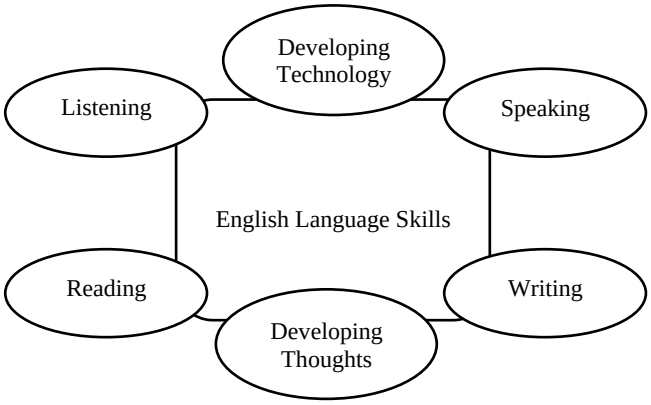

Figure 1: Illustrate essential English language abilities and their interaction with developing technology using Education4.0. (Figure by the author)

3.2 Listening Technology

One of the most important abilities in the study of language learning is listening, or the capacity to identify and understand what others are saying. One of the most important aspects of hearing is the capacity to grasp a speaker's pronunciation, accent, syntax, vocabulary, and concepts of meaning. All four functions should be able to be performed simultaneously by a skilled, attentive listener. Additionally, students actively gain a significant percentage of their knowledge, education, and understanding of their surroundings by listening.

According to Saricoban (1999), the following are the key components of EFL listening:

Listening Practice with Computers: In current history, machines have been utilized to offer students visual and vocal inputs to improve their information and thoughts and build their listening abilities. Learning video clips and computer-based listening assessments helps enhance the listener's comprehension skills. Additionally, voice chatting over the Internet in English may help the student learner's communication skills (Lawrence, Ching, & Abdullah 2019).

Tape Recorders/CD Players for Listening Practice: Tape recorders, one of the earliest modern listening devices, has suffered a steep decline in use in recent years as audio equipment, CD players, and digital media recorders and players have evolved.

Listening Practice through Broadcasting: Another technique to increase comprehension is through technology; you may listen to music and news on satellite TV channels and English language study programmes on TV and radio. However, it is recommended that learners seek out and pick appropriate individual programmers that are compatible with their demands (Wegerif, 2004).

-To deal with repetition, noise, and noise
-To comprehend accents, dialects, pitches, and anxiety
-To make educated guesses and predictions
-To comprehend colloquial and colloquial terms
-Fatigue and lethargy
-Making use of visual and environmental signals

3.3 Speaking Technology

Many countries have decided that one method of escaping the current global economic downturn is to have a workforce and staff that are well-educated and fluent in English. As a result, several nations today require primary school students to start speaking English (Chris, 2013; Ybarra & Green, 2003; Gilbert, 2013). The speaker and

listener can only connect and communicate effectively if they both understand each other. Consequently, the task is affirmative for both the speaker and the listener. Both the speaker and the listener must understand each other's spoken languages for communication to occur (Benešováa & Tupaa, 2017). There are several ways to incorporate technology into English-language speech, as seen in the subsections below.

Speaking Practice with Social Robots: In certain non-English-speaking countries, in schools, social humanistic and animal-like robotic systems have been utilised to engage students and interest young EFL/ESL students in conversation activities (Saricoban, 1999; Meghdari & Sanda & Klimova, 2021)). Once programmed for different intents and scenarios, these robots provide a pleasant and memorable learning environment when used with a human instructor by assisting teachers, telling stories, playing games, entertaining, and educating. It has been demonstrated that this novel technique dramatically helps young EFL/ESL learners' spoken language skills (Meghdari et al., 2013).

Conversation: This is a sort of verbal communication and interaction between both the listeners and the speaker. This technique may also benefit the learner, particularly when the other person is a natural English speaker (Benešováa & Tupaa,2017).

Modern computer software and applications use artificial intelligence techniques to produce, imitate, and/or decode human voice and speech signals. These computer applications are proven effective tools for boosting learners' speaking abilities. Using such apps to practise can help students improve their vocabulary and pronunciation (Saricoban, 1999).

3.4 Reading Technology

The learner's comprehension of the written material is referred to as "*reading*." It is a crucial and challenging input ability that calls for observation and logic and is reliant on the learner's command of the terminology of their second language. The English-language student can make progress while reading. He or she will learn new facts and concepts and improve overall performance (Thurstun, 1996).

Real-world experience Successful reading is related to two allied operations, the first of which is vocabulary recognition (the process of determining how written symbols match speech expressions in a language), and the other is comprehension. Understanding words, phrases, sentences, and so on in terminology (Lawrence, Ching & Abdullah, 2019), whenever it relates to the English language acquisition process, vocabulary development, and retention are known to have a big impact on language competency, while a deficiency is known to have a detrimental effect. There has been an increase in lexical knowledge.

Practice Reading with Computers and Digital Agencies: In recent years, computer-based literary software applications have been created to help students learn understanding and vocabulary skills through clear texts. The outcome has been improved in the English language (Asude Dağala, Gülden Balatb, Volkan Kanburoğluc, Duygu Şallıd, & Yaşar Birbire, 2015). Language learners might have greater engagement with texts based on their specific needs and requirements and, as a result, can increase their reading ability. These are easy-to-use computers. Programs can assist pupils in progressing from simple to more challenging reading. Assignments, practise exams, and quickly correct their responses. Furthermore, multimedia software is being created that employs a blend of text, using digital technology, entertainment, melody, and film clips to motivate kids to acquire more vocabulary and read effectively (Gabriel, Campbell, Wiebe, MacDonald, & McAuley, 2012).

Reading Practice through Internet Browsing: Using the Internet as a current technical tool has a good influence on English language learners' general reading abilities. Furthermore, several websites are dedicated to improving the reading ability of EFL/ESL/ESP students. The learner's vocabulary and reading skills will be greatly improved by the abundant resources available to browse and read, including reports and bulletins, newspapers, magazines, journals, electronic libraries, online and electronic dictionaries, and encyclopaedias.

3.5 Writing Technology

Writing competence is usually regarded to be the most important challenging English verbal ability for EFL/ESL students since it requires them to participate in tasks such as developing initial thoughts, forming structures, and using language skills precisely. To do this work properly, one must recognise reading and writing skills' tight relationship and interdependence. Simply put, better writers are likelier to be good readers. The following are some of the most recent tools and techniques frequently used to help EFL/ESL students improve their writing.

Writing Exercise using Computers: Computer systems and office applications may be used to help English language learners improve their writing skills. EFL/ESL students may struggle to create written work in a foreign language, such as reports, statements, and paragraphs. Computer programmes with graphics are developed to facilitate and enhance pupils' writing, allowing them to communicate their thoughts more effectively. Advanced word processing systems can help students enhance their grammar and spelling abilities. As a result, utilizing computers to learn grammar and spelling is far more motivating for students than the traditional method of working with a pencil and paper (Ybarra & Green, 2003).

Text-chatting for Writing Practice: Text messaging via Mobile Assisted Learning Languages (MALL) is another key technology strategy that uses tablets or smartphones to improve and increase creative talents. With this technique, EFL students can write while on the go. It also has an online version and a mobile version. Rapid writing is a tool for exchanging ideas, emotions, and immediate correspondence with oneself and others (Gabriel, Campbell, Wiebe, MacDonald, & McAuley, 2012).

Email writing practice: Email is a contemporary method of sending and receiving communications through the web. Learners might greatly benefit from using e-mails to develop their writing abilities.

E-mails may be used to teach students how to use computers. Respond to incoming communications formally, utilizing meaningful language and statements.

Figure 2: Technology used in the communication of English (figure by the author)

Table 1: To improve basic English communication abilities

The technology used in the communication of English	Multimedia	Internet	Computers	Social Robots	Broadcasting	Mobile phones
Listening						
Speaking						
Reading						
Writing						

Source: Authors' own design

Table 1 provides a wide range of contemporary technologies commonly used both inside and outside the course to enhance Basic English language skills.

3.6 English For Business Purposes And Technology

In today's business, a solid command of the English language is required to speak the standard business language. Developing these skills can provide a significant boost to your confidence and career. English has emerged as the primary business language in this age of globalization. Moreover, it is simple to understand why. Around 2 billion people speak English globally, more than any other language. Learning English gives you the ideal opportunity to communicate with anyone on the planet (Pang, Muaka, Bernhardt, & Kamil, 2010).

English helps you express yourself and communicate with people from all around the world. You will always be able to rely on good English language abilities no matter where you go, who you work for, or what you do (Whyte, 2011).

If you work in an English-speaking organization, improving your English for business communication will help you create deeper relationships—not just with your co-workers but perhaps with clients as well (Elisa Tosello, Nicola Castaman, Emanuele Menegatti, 2019).

Because of the digital world and the technological discoveries and advances it has brought, day-to-day community and occupations have been easier than ever before. Technology has a positive impact on both society and education. (Akyuz and Yavuz, 2015; Buasuwan, 2018). The features of learning and instruction settings have changed significantly as a result of the fast evolution of extremely complex educational technologies. (Chang et al., 2015). As has been seen, the technologically enabled teaching and learning process also influences the educational sectors (Asude Dağala, Gülden Balatb, Volkan Kanburoğluc, Duygu Şallıd, & Yaşar Birbire, 2015).

3.7 English For Academic Purposes (EAP) And Technology

English for Compulsory Subjects is one of two distinct categories within the broader scope of English for Particular Reasons. (EAP) (ESP). The other section is English for Professional Purposes (EOP). In accordance with a contemporary customer perspective and investigation in EAP, many of our academic commitments in academic settings, apart from course requirements, need a fundamental understanding of the use of new and evolving technologies (Chris, 2013). Particular phrase papers and presentations, PowerPoint presentations, email

messages, accessibility to and involvement in online learning platforms, and study utilising online-based resources and networks are all activities that faculty and students may anticipate engaging in. These expectations are continuously increasing as new technologies emerge. Students and instructors who can operate efficiently, successfully, and appropriately in academic settings require one more skill: working in an electronic environment. Such environments are becoming more prevalent at many higher education institutions worldwide (Mawer, 2011). In this regard, adopting technological advances to enhance academic instruction may be considered as supporting universal language teaching and learning as well as study skills for EAP learners. The use of modern technology benefits EAP students in many ways, including the development of indices to provide accurate language skills, the examination and improvement of e-literacy abilities, the improvement of practical web page searching and assessment techniques, the contribution and construction of significant cultural knowledge essential for involvement as individuals of their larger civilizations, and the contribution and construction of significant cultural knowledge (Warschauer, 2003).

3.8 English For Political Purposes (EPP) And Technology

The use of English for political advantage (EPP) is increasingly widespread throughout the world. Politicians and government officials speak English as a second language, whether they are native speakers or are studying it for the first time. Because English is their second language, they must continue to improve their spoken English abilities. They require assistance to increase their English language abilities, especially in terms of "*sufficient speed and accuracy*" in situations where they can speak without uncertainty or concern for the audience. They are attempting to clarify their political positions on current issues and themes as well as characterise their political philosophy by debating topics at a high intellectual level and responding to questions by participating in global conferences and interviews as a journalist or reporter (Chris, 2013). Materials and technologies can be found by searching the English-language online versions of other news networks as well as internet news outlets such as CNN and BBC can be used to find materials and technologies. The EPP learner is in charge of the subjects and issues constantly related to current political events. Furthermore, the text chat feature may be utilised to record instructor comments and changes. These are created when a political student delivers a talk or an interview, and that student is afterwards utilised to discuss the session. When a student is looking for certain words or concepts while speaking, this capability can be utilized to deliver printed reminders and prompts, simulating the use of a teleprompter (Kern, 2013).

4. Result And Discussion

Some inferences may be drawn from this analysis. To begin with, a variety of variables can influence how people use technology. Teachers' and students' perspectives on technology are extremely important since they are such an important component of the educational process. Training instructors and providing supplemental education to learners about technical stuff is necessary to obtain the most benefit from technology. Second, employing technology does not imply that an outdated computer is being used to deliver fa lesson (Thurstun, 1996). Computers have come a long way in recent years. The use of contemporary computers, such as tablet PCs, can significantly affect learning. Last but not least, technology gives teachers a choice of tools to use in their classrooms to enhance the teaching process.

Regardless of how much individuals like technology, as ESP professionals and academics, we can no longer afford to leave it out of our classes and courses. In the twenty-first century, technology in all of its manifestations is critical to learners' everyday lives and occupational endeavours.

As a result, to communicate globally using a range of modern media platforms and to become independent ESL learners capable of navigating a fast-changing work environment, our students and learners need to be digitally and electronically literate. A rather more student-centred approach in which learners are at the core of the process and are more actively involved in their education than traditional direct instruction methodologies is also made possible by leveraging current technology to boost second language acquisition (Buasuwan, 2018). As a result, the current study adds to our understanding of how technology is used in EFL/ESL language classrooms, implying that instructors and material creators should pay attention. There are several interesting findings in this research about using various technological tools in language learning and navigating a fast-changing work environment. Our students and learners need to be digitally and electronically literate. A more student-centred pedagogy is also made feasible by exploiting contemporary technology to increase second language acquisition. Learners are at the centre of the process and become more actively engaged in studying than with traditional direct instruction approaches. As a result, the current study adds to our understanding of how technology is used in EFL/ESL language classrooms, implying that instructors and material creators should pay attention. There are several interesting findings in this research about using various technological tools in language learning. The use of social and cognitive robotics as well as technology-based schooling, are all impacted. In light of these findings, it is suggested that technology be viewed as an adjustable help rather than a complex tool capable of fully changing the teachings. As a result, conventional courses should use technology to make them more successful and up to date.

5. Conclusion

The quantitative approach of the offered questionnaire serves as the foundation for this study. The research's conclusion is to use SPSS software to examine the effects of employing the English language in industry 4.0 and education 4.0. As a result, to interact successfully in and outside the classroom utilising a range of current media platforms, our students and learners must have electronic and digital literacy abilities. They also need to be

independent ELT learners capable of adjusting to a work environment that is rapidly changing. A more student-centred pedagogy is also made feasible by utilising contemporary technology to facilitate second language acquisition. Students are at the centre of the learning process and are more actively involved in learning than with standard direct instruction approaches. Numerous studies have been done on education 4.0 and the use of English language learning, as well as the effects of these things on education 4.0. Future studies on these relationships in the English language and their effects are possible.

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