Teaching English in the Era of Technology 4.0

Trinh Huynh Chan
Thu Dau Mot University

ABSTRACT: In the era of Industry 4.0, education in general and English teaching in particular are being deeply affected by modern technology. Applying technology to English teaching is important in improving learning efficiency, helping learners not only access knowledge quickly but also develop comprehensive language skills. Industry 4.0 also provides educational support to innovate teaching methods, increase creativity and interaction in the classroom. This article focuses on analyzing the effects of Industry 4.0 on English teaching, and at the same time clarifying how technology is applied in English teaching to change teaching methods in a positive direction.

KEYWORDS: Teaching English, the era of technology 4.0

1. PROBLEM STATEMENT

The Industrial Revolution 4.0, also known as Technology 4.0, is marking a powerful turning point in human history. With a focus on the combination of digital technology, artificial intelligence (AI), Internet of Things (IoT), and Big Data. This revolution not only changes the way people live and work but also deeply affects most fields, from manufacturing, healthcare to education. Technology 4.0 has been reshaping the world, breaking down traditional barriers and opening up countless opportunities for people to access knowledge. In this context, using English - the global language - is no longer an option but has become an essential requirement for people to participate in the globalized integration environment (Nguyen Kim Dung, 2023).

The trend of international integration has increased strongly in the era of Industry 4.0. Not only stopping at trade cooperation or cultural exchange, integration now also includes knowledge connection through technology platforms. Countries around the world are gradually joining the global network, where English plays the role of a universal key, helping to open the door to knowledge, creativity and international cooperation. In particular, in the field of technology, more than 80% of technical documents, scientific research and software are currently written in English. This shows that proficiency in this language is a crucial requirement to access, exploit and apply technological achievements in practice.

However, to develop English into an effective tool in the era of Industry 4.0, teaching and learning this language needs to change completely. If in the past, English teaching methods often focused on the traditional approach with blackboards, chalk and textbooks, now, technological developments are opening up new opportunities to innovate teaching methods. The use of artificial intelligence, online classrooms, virtual reality technology, and mobile applications has made the English learning process more flexible, personalized and effective. This requires educational institutions to quickly adapt and take advantage of new technologies, while teachers and students also need to be equipped with skills to use these modern tools in the teaching and learning process. In this context, innovation in English teaching methods is not only a trend but also an urgent requirement. Teaching English in the era of Industry 4.0 not only aims to improve students' language skills but also prepare them to integrate into the modern world, where language and technology are two key factors determining success. This not only places a great responsibility on education but also requires synchronous coordination between agencies, organizations and individuals to build an effective, creative learning environment that meets the needs of the times.

1. RESEARCH CONTENT
1.1. Overview of Industry 4.0

Industry 4.0, one of the great advances of mankind, marks the combination of advanced technologies and physical-digital systems. This concept was first introduced at the Hannover Industrial Fair (Germany) in 2011, to describe the revolutionary transformation in industrial production through the use of smart technologies, automation and digital connectivity.

According to Klaus Schwab (2016), founder and Chairman of the World Economic Forum, Industry 4.0 " *is not simply a change in technology, but a comprehensive transformation of the economy, society and the way people interact with each other* ." Schwab emphasized that this revolution is based on the integration of advanced technologies such as artificial intelligence (AI), big data, the Internet of Things (IoT), and 3D printing technology.

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Similarly, according to author Nguyen Thanh Hai (2020), Industry 4.0 is " *a close connection between intelligent systems, digital platforms and automation technology, with the goal of optimizing production efficiency, management and improving the quality of human life* ". This shows the importance of integrating technology into most fields, from manufacturing, healthcare, commerce to education.

Industry 4.0 is not only limited to the industrial sector but also extends to all other areas of society. According to Nguyen Thi Thuy Trang (2021), this is " *an era in which people not only work with machines, but also utilize artificial intelligence to make data-driven decisions, while automating most complex processes* ".

The characteristic of Industry 4.0 is the ability to connect devices, systems and people through the Internet of Things, along with the use of advanced technologies to process and analyze data quickly. Technologies such as smart robots, blockchain, and virtual reality (VR) are also prominent factors, contributing to changing the way people work and learn. Industry 4.0 is not only a technological development but also a fundamental change in the way modern society operates. This is the foundation for building a digital world, where people and technology cooperate to solve challenges and create new values.

1.2. The development of technology 4.0

Industry 4.0, initiated in the early 2010s, has rapidly developed and become one of the main drivers of innovation in many fields. With a focus on the combination of digital, physical and biological technologies, this revolution has created remarkable breakthroughs. According to Klaus Schwab (2016), Industry 4.0 is not simply a continuation of previous industrial revolutions, but also the emergence of breakthrough technologies such as artificial intelligence (AI), Internet of Things (IoT), big data and intelligent automation.

One of the outstanding features of Industry 4.0 is the tight integration between intelligent systems and connected networks. The Internet of Things (IoT) plays a central role, allowing devices, machines and people to connect with each other in real time. This has opened up unprecedented opportunities in optimizing production processes, increasing labor productivity and improving product quality (Nguyen Thanh Hai & Le Van Tai, 2020).

The development of artificial intelligence and big data is also an important factor. According to Nguyen Thi Thuy Trang (2021), the application of these technologies has helped process and analyze huge data in a short time, thereby making more accurate decisions and improving management efficiency in many fields, including manufacturing, healthcare, and education.

Industry 4.0 technology is not limited to industries, but has also spread to other areas such as finance, agriculture and education. For example, blockchain technology has been deployed to improve transparency and security in financial transactions, while virtual reality (VR) and augmented reality (AR) have been used to create new learning and entertainment experiences (Le Minh Tuan, 2022).

In particular, in the context of the COVID-19 pandemic, Industry 4.0 has proven to play an important role in maintaining economic and social activities. Online platforms, remote learning applications and smart healthcare management systems have helped many countries overcome the enormous challenges caused by the pandemic (Pham Hoang Quan & Tran Van Loi, 2021). The development of Industry 4.0 is not only the result of technical advances but also reflects the increasing demand of modern society in optimizing efficiency and creating new values. With its rapid development, Industry 4.0 promises to continue to bring profound changes in all areas of life.

1.3. The impact of technology 4.0

Industry 4.0 is having a profound impact on every aspect of human life, from economics, education to healthcare, culture and society. This revolution not only brings great opportunities in promoting innovation but also creates challenges that need to be overcome so that countries and organizations can adapt.

In terms of economy, Industry 4.0 promotes the transformation from the traditional economy to the digital economy. Technologies such as artificial intelligence (AI), Internet of Things (IoT), and Big Data have helped optimize production processes, improve labor productivity, and reduce costs. According to Nguyen Thanh Hai and Le Van Tai (2020), the application of IoT in businesses has helped connect production processes in real time, improve operational efficiency, and enhance competitiveness in the international market.

In the field of education, Industry 4.0 has changed the way of teaching and learning. Online learning platforms, artificial intelligence applications and virtual reality have helped personalize the learning experience, meeting the needs of learners anywhere and anytime. Pham Hoang Quan and Tran Van Loi (2021) stated that, in the context of the COVID-19 pandemic, Industry 4.0 has played an important role in maintaining teaching and learning activities through digital platforms, helping education not to be interrupted. The healthcare sector has also witnessed major changes thanks to the development of Industry 4.0. Modern technologies such as surgical robots, smart diagnostic systems and IoT in healthcare have improved healthcare efficiency, reducing pressure on the hospital system. According to Nguyen Thi Thuy Trang (2021), the application of AI and Big Data in healthcare not only helps analyze patient data quickly and accurately, but also provides more effective treatment recommendations.

In addition, Industry 4.0 also creates changes in the way people communicate and interact. With the popularity of social networking platforms, people can connect and share information more easily than ever. However, along with that are issues of information

security, privacy and the risk of increasing digital inequality between developed and underdeveloped regions. Despite its many benefits, Industry 4.0 also poses major challenges for countries. Inequality in access to technology and a shortage of skilled human resources are major obstacles to sustainable development (Le Minh Tuan, 2022). Therefore, to make good use of the opportunities that Industry 4.0 brings, there needs to be strong investment in technology infrastructure, education and digital skills training.

2.2. THE ROLE OF ENGLISH IN THE ERA OF INDUSTRY 4.0

2.2.1. English is a global communication tool

English has long been considered an international language, playing an important role in connecting countries and communities around the world. With more than 1.5 billion people using it as a first or second language, English is not only the main communication tool in trade and diplomacy but also the key to accessing global knowledge (Crystal, 2003).

In the era of globalization, when countries are increasingly integrating deeply, English becomes an important bridge to help individuals and organizations overcome language barriers. Nguyen Van Tuan (2019) stated that, in the context of international trade agreements and cultural exchanges developing strongly, the use of English is an indispensable factor to ensure effectiveness in multinational cooperation activities.

Not only limited to the fields of economics and politics, English is also a means of accessing scientific and technological knowledge. According to Nguyen Thi Thanh Hoa (2020), more than 80% of scientific research documents and academic articles in the world are published in English, making it the main language of science and education. Proficiency in English not only helps individuals access rich sources of documents but also creates conditions for learning, creating and contributing to the common development of humanity.

In addition, English is also an important tool in the entertainment and media industry. English-language movies, TV shows, and music dominate the global market, contributing to the spread of this culture and language to other countries. Le Minh Hung (2021) pointed out that the use of English on social media platforms such as Facebook, YouTube, and Twitter has expanded the ability to communicate and share information, thereby connecting people everywhere in the world.

However, the role of English is not limited to being a language. According to Nguyen Thi Mai Lan (2022), English is also a symbol of integration and modernization, helping countries build a positive image and enhance their position in the international arena. This explains why many countries, especially developing countries, have invested heavily in teaching English in their national education systems.

In general, English is not only a language of communication but also an important tool to promote global understanding and cooperation. In the era of Industry 4.0, with the strong development of communication and connection, the role of English is more clearly affirmed than ever.

2.2.2. English in technology integration

In the context of globalization and the explosion of Industry 4.0, English has become an essential factor for countries and individuals to integrate into the global economy and market. The role of English in the technology field is evident in industries such as information technology, scientific research, and education, helping to connect participants in the global technology system. According to a survey by Education First (EF) on the Global English Index (EF EPI) in 2020, countries with high English usage rates such as the Netherlands, Sweden, and Singapore all have strong technology foundations and have made remarkable developments in areas such as artificial intelligence (AI), big data, and automation (EF EPI, 2020).

In particular, in the technology industry, English is not only the language of communication but also the main language used in research documents, software development and international cooperation. According to a study by Crystal (2003), more than 80% of scientific and technological documents are published in English, showing the dominance of this language in communicating technical and scientific knowledge. Leading technology companies such as Google, Microsoft, and Apple all use English as the main language in product development and communication with global partners. This is a clear demonstration of the importance of English in the technology industry, helping professionals and businesses to cooperate more effectively, even if they come from different countries.

Statistics from a survey by Deloitte (2018) also show that 72% of international technology companies require their employees to be able to communicate fluently in English to work in a global environment. This applies not only to large companies but also to technology startups, where fast and effective communication in English helps connect international investors and partners. In addition, 65% of technology companies said that English is a decisive factor in recruiting talent from different countries (Deloitte, 2018). This is one of the reasons why training in English for technology has become extremely important in universities and training institutions.

In addition, English is also an important language in learning and research tools in the technology field. Online learning platforms such as Coursera, edX, and Udemy all offer thousands of technology courses, most of which are taught in English. According to statistics from Coursera (2020), about 60% of technology courses on this platform are taught in English, and more than 50 million

learners take these courses every year. This not only shows the popularity of English in technology training but also demonstrates the important role of English in creating learning and career development opportunities for participants.

English in technology also plays a key role in scientific and technological research. Major international technology conferences and online seminars use English as the main language, thereby creating a favorable communication environment for researchers and technology experts around the world. According to data from the US National Institute of Science and Technology (NIH, 2019), about 95% of technology research published in international scientific journals use English as the main language.

Thus, English is not only a language of communication but also an important factor in connecting, sharing knowledge, and promoting global technological development. Proficiency in English helps individuals and organizations access learning, cooperation, and development opportunities in the context of technological integration, while creating a solid foundation for career and business development in the era of technology 4.0.

2.2.3. English in Education

English has been playing an important role in the global education system, especially in the context of current socio-economic integration and development. In an increasingly connected world, proficiency in English not only helps students access rich sources of knowledge but is also a decisive factor in the process of international integration. According to research by Nguyen Thi Mai Lan (2021), in the 21st century, English has become the main educational tool in most fields of study from natural sciences, engineering to sociology, literature and arts.

In higher education, English is the main language for accessing research documents and international cooperation. According to a report by UNESCO (2018), about 70% of scientific research articles are published in English, which shows that the ability to read and understand English is a prerequisite for students to access important academic documents. In addition, international seminars, conferences and global scientific research all use English as the main language. This not only helps improve the quality of education but also promotes knowledge exchange between countries, especially in the fields of technology and science research.

In general education, teaching and learning English is increasingly becoming a basic requirement. According to research by Tran Thi Minh Hanh (2020), national education programs in many countries have added English as a compulsory subject from primary school. The development of English education programs not only helps students become familiar with the global language but also prepares them to use English in communication, study and work. In particular, in the context of the 4.0 Industrial Revolution, proficiency in English helps students not only grasp information about new technology trends but also participate in international online learning programs, creating opportunities for learning and career development.

An example of the role of English in education can be found in global online learning platforms such as Coursera, edX, and Udemy. According to a report by Coursera (2020), more than 60% of online courses related to science, technology, engineering, and mathematics (STEM) are taught in English, demonstrating the importance of English in learning these fields. More than 50 million learners worldwide have taken courses on this platform, demonstrating that English has become the primary language of instruction in professional courses. Courses are not only offered by top universities, but also open learning opportunities for students from all over the world, creating an international learning environment and promoting equal access to knowledge.

In education, English teaching has also been integrated with advanced technologies, especially in the application of artificial intelligence (AI) and online learning applications. Learning English through mobile applications, grammar and pronunciation learning software, as well as online learning programs help students learn proactively and flexibly. According to research by Tuan and Mai (2021), the use of English learning applications can help students improve their listening and speaking skills, as well as access real-life communication situations, thereby improving their ability to use English confidently and effectively.

In addition to the above benefits, English in education also contributes to creating a platform for students to participate in extracurricular activities, international cultural exchanges, and develop necessary soft skills. This will not only help students broaden their understanding of other cultures but also create opportunities for them to learn and develop leadership, communication and teamwork skills – skills that are very important in a globalized world.

2.3. Teaching English in the era of Industry 4.0
1.3.1. Application of modern technology in teaching English
- Artificial Intelligence AI

Artificial intelligence (AI) has been making significant changes in the way English is taught and learned, not only helping students access lessons flexibly, but also creating opportunities to improve their skills effectively. One of the prominent applications of AI in English teaching is personalized language learning apps, such as Duolingo. This app uses AI to adjust lessons based on each student's level and learning progress. For example, if a student is having difficulty with a grammar lesson, Duolingo will create additional exercises to help the student understand better. Conversely, if the student is progressing quickly, the app will provide more difficult lessons, helping to maintain challenge and motivation.

In addition, AI can also help students improve their pronunciation. A typical example is Rosetta Stone, a language learning platform that integrates speech recognition technology. As students practice pronunciation, the AI in this application compares the sound produced with the standard pronunciation of native speakers, thereby providing detailed feedback on pronunciation errors. This

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helps students not only identify pronunciation errors but also know how to correct them immediately, providing a more effective learning experience than traditional methods.

AI chatbots are also becoming increasingly popular in English language teaching, especially for practicing communication skills. Apps like Mindsnacks use chatbots to create simulated conversations, helping students practice speaking English in real-life communication situations. Chatbots can respond instantly, asking questions, prompting students to respond, and then analyzing the student's responses to provide feedback and corrections. This helps students feel more comfortable communicating, as they are not pressured by communicating directly with another person.

Another app that uses AI to help with English learning is Grammarly, a grammar checker and corrector. Grammarly analyzes the text written by learners and automatically detects spelling, grammar, and word usage errors. It also provides suggestions for improving writing style, helping students gain a deeper understanding of vocabulary usage and sentence structure. Using this tool helps students improve their writing skills significantly without the need for teacher intervention every time they write.

For students who want to improve their listening and reading skills, English learning apps like Busuu and Babbel use AI technology to help students practice through real-life conversations. These apps provide lessons with audio or video conversations, then ask students to answer questions to test their understanding. AI analyzes how students listen and understand the context of the lesson, giving them accurate feedback on their listening and comprehension errors and providing appropriate exercises to improve these skills.

Additionally, AI can help create innovative and personalized learning content for each student. For example, ChatGPT , a powerful AI model, can generate lessons, grammar exercises, or even simulated communication situations for students to practice. Students can ask ChatGPT to generate questions on a specific topic, helping them review vocabulary and grammar. AI can help students learn and practice proactively, without the need for constant supervision from teachers.

With these examples, it is clear that AI has changed the way English is taught and learned, not only helping students improve their language skills quickly but also creating a more interesting and flexible learning environment. The application of AI in English education not only helps optimize learning time but also ensures that students have access to more modern and effective learning methods, preparing them with the necessary skills in the era of technology 4.0.

- **Online Classes**

Online classes are becoming increasingly popular and important in modern education, especially in the context of strong technological development and globalization. This stems from the flexibility that online classes bring, helping students to learn from anywhere, at any time. As long as there is an internet connection, students can attend classes without having to go to the classroom directly. This not only saves time and travel costs, but also creates learning opportunities for people who live far away or who cannot attend traditional classes for health or work reasons.

Online classes also help students and students access rich learning resources from all over the world. Lectures and learning materials can be shared instantly and students can access them at any time. This is one of the biggest benefits of online classes, as it creates a learning environment that is not limited by space and time. In addition, online classes also support interaction between teachers and students through tools such as virtual whiteboards, video lectures, or even live discussions. This helps students receive timely help from teachers and stay connected during the learning process.

However, online classes are not without their challenges. One of the biggest problems is the lack of direct interaction between teachers and students. This can make teaching less personalized and students sometimes have difficulty grasping the lessons. In addition, not all students have access to technology, especially in rural areas or low-income families. Lack of devices such as computers, smartphones, or unstable internet connections can create a major barrier to participating in online classes. Furthermore, in an online learning environment, students are easily distracted and lose motivation to learn due to the lack of direct supervision from teachers.

To teach effectively in an online environment, teachers need to be proficient in using online learning platforms and implementing interactive tools such as screen sharing, discussion groups, and live sessions. At the same time, designing online assignments, surveys, and tests is essential to assess student progress and provide timely feedback. An effective teaching strategy is to divide the class into small groups so that students can interact and discuss, helping to create a more dynamic and engaging learning environment.

Encouraging students to take an active role in their learning is an important element in online classes. Teachers can provide supplementary learning materials and encourage students to use learning apps like Duolingo or Grammarly to practice English. These tools not only help students improve their grammar and pronunciation, but also help them learn flexibly and effectively on their own. The combination of technology and modern teaching methods is the key to making online classes a powerful learning tool in the digital age.

- **Virtual reality (VR) and augmented reality (AR) technology**

Virtual Reality (VR) and Augmented Reality (AR) are increasingly becoming important technologies in many fields, especially in education. VR technology creates a simulated environment that users can fully immerse themselves in, feel and interact with the

virtual world as if it were real. Meanwhile, AR technology adds virtual objects to the real world, helping users see the combination of virtual elements and the surrounding reality.

In education, VR and AR open up exciting and new learning opportunities. With VR, students can experience lessons in immersive 3D environments, where they can visit museums, participate in science experiments, or explore physical phenomena without leaving the classroom. For example, students can take a virtual tour of famous historical sites, go on space missions, or even interact with 3D models of animals and plants in biology. This not only helps students absorb knowledge visually, but also stimulates curiosity and inspires a passion for learning.

Meanwhile, AR technology helps students interact with learning materials through electronic devices such as smartphones or tablets. For example, when students look at a textbook through an AR application, they can see 3D images, videos or vivid simulations related to the learning content. This makes it easier for learners to visualize and understand the lesson. AR can also be applied in foreign language subjects, when students learn English, they can see vocabulary appear right on objects in the classroom, helping learners connect semantics with the real world.

A concrete example of AR applications in English teaching is applications such as "Layar" or "Augment," where students can scan QR codes to display 3D models of vocabulary objects in the lesson, such as animals, objects, or communication situations. This not only helps students remember vocabulary more easily, but also encourages language learning in a natural and vivid environment.

Another notable application of VR and AR in education is vocational skills training. Industries such as medicine, engineering, and the military are using VR to create simulations of surgeries, emergency situations, or technical tasks, allowing students to practice without the risk of real-life situations. For example, medical students can practice surgery on virtual 3D models without having to perform it on a real person, which not only helps them improve their skills but also reduces anxiety when faced with real-life situations.

However, the application of VR and AR in education also faces some challenges, especially in terms of investment costs and accessibility for students. This technology requires specialized equipment such as VR glasses or AR-enabled smartphones, which can be a barrier for students in remote areas or low-income groups. Furthermore, teachers also need to be properly trained to be able to maximize the potential of this technology in teaching.

1.3.2. Changing the role of teachers

In the era of Industry 4.0, the role of teachers has changed significantly. Teachers are no longer just one-way knowledge transmitters but have become designers of flexible and creative learning environments. They not only teach lessons from textbooks but can also use online learning platforms such as Google Classroom or Moodle to create interactive exercises, group discussions and online tests. As a result, students not only learn English but also develop skills in using technology, teamwork and online communication, better meeting the requirements of modern society.

The development of artificial intelligence (AI) also helps teachers personalize the learning process of students. Language learning platforms such as Duolingo, Memrise or Grammarly use AI to track students' learning progress and provide lessons and exercises that are appropriate to each student's ability. This allows teachers to identify students who are having difficulty with specific skills such as pronunciation, vocabulary or grammar and provide additional support materials, thereby helping students progress more effectively.

Teachers now act as companions, supporting students throughout the learning process. Instead of just standing in class and lecturing, they organize online learning activities, such as vocabulary competitions via Quizlet or group discussions via Zoom, where students can communicate in English. This not only helps students improve their language skills but also trains their ability to work in groups and be creative in communication. Teachers are not only teachers but also create opportunities for students to explore and solve learning problems on their own.

Technology also allows teachers to use data analytics tools to track student progress in detail. Tools like Google Forms, Kahoot, and Edmodo help teachers collect data from online tests and adjust their teaching methods based on that data. This helps teachers identify students who need extra support and create timely interventions. As a result, students' learning becomes more flexible and effective.

In addition to teaching English, teachers also need to develop soft skills in students, such as communication, presentation and critical thinking skills. Technology has helped teachers create real-life learning situations where students can use English to solve problems or present on a topic. Platforms such as Flipgrid or Padlet help students develop speaking and presentation skills through videos, allowing teachers to accurately assess students' language skills and provide timely feedback.

Teachers in the era of technology 4.0 also play the role of connecting students with the world. They not only teach students in the classroom but can also organize online exchanges with international students via platforms such as Skype or Zoom. These exchanges help students practice English in real-life communication situations, while also learning more about the cultures of other countries. This not only helps students improve their language skills but also prepares them to integrate and work in a global environment. The change in the role of teachers in the era of technology 4.0 not only improves the quality of teaching but also helps students

develop comprehensively, from mastering grammar knowledge to communication skills and soft skills. Teachers are not only the ones who impart knowledge but also the ones who accompany, guide and create conditions for students to maximize their potential.

1.3.3. Challenges and solutions

In the era of Industry 4.0, although technology brings many opportunities for teaching English, there are also significant challenges that teachers and students face. One of the biggest challenges is the ability to access technology and digital learning tools. Although technology is developing rapidly, not all students have the conditions to use modern devices or stable internet connections. This creates inequality in learning opportunities, especially for students in remote areas. In addition, teachers may also have difficulty applying technology to teaching, due to lack of technology skills or unfamiliarity with using online teaching tools.

In addition, the overload of information and online learning tools is also a problem to be noted. Although there are many English learning platforms and applications, their variety and complexity can make students feel overwhelmed and difficult to choose. Not knowing how to choose the right tool for their level and learning goals can also cause students to waste time and not achieve the expected results. This poses a challenge for teachers in guiding students to choose the right learning tools and use them effectively.

In addition, maintaining interaction and motivation in online classes is also a challenge. Students in online learning environments can easily feel unmotivated, lack of connection with teachers and friends, and easily get distracted by other factors such as social networks, video games, or external factors. Moreover, the lack of online communication skills can also affect the ability to learn English, especially listening and speaking skills.

To address these challenges, one important solution is to invest in technology infrastructure. Governments and educational institutions need to ensure that all students, especially those in disadvantaged areas, have access to learning devices and the internet. Technology scholarship programs or providing devices to students should be widely implemented. At the same time, it is important to provide technology training for teachers to improve their ability to use online teaching tools and use technology effectively.

Another solution is to guide students in choosing learning tools that are appropriate for their learning goals and needs. Teachers can help students analyze online learning platforms and English learning apps to choose tools that are highly applicable and easy to use. Even incorporating these tools into live lessons can help students approach them more naturally and effectively.

To address the lack of motivation in online learning, teachers can use creative interactive methods such as organizing group discussions, doing group assignments or organizing learning games to keep students engaged and not isolated. Tools such as Kahoot or Quizlet can be used to create fun mini-competitions and stimulate healthy competition, thereby keeping students interested in learning.

Finally, another important solution is to encourage collaboration between students, teachers, and parents. Parents can play an important role in creating a learning environment at home, encouraging their children to use technology positively, and assisting in monitoring their progress. Furthermore, parents can help students maintain motivation and develop strong study habits even when learning online.

Overall, to maximize the potential of technology in English language teaching, there needs to be close coordination between teachers, students and the education community. Overcoming current challenges requires investment and efforts from many sides, and at the same time, it is necessary to apply creative and effective solutions to improve the quality of teaching and learning in the 4.0 technology environment.

2. CONCLUDE

Industry 4.0 is having a strong impact on all areas of society, including education, especially in teaching and learning English. Modern technologies such as artificial intelligence (AI), online learning, virtual reality (VR), and augmented reality (AR) have been opening up new opportunities for teaching and learning English more effectively, flexibly, and personalizedly. These tools not only help students access knowledge quickly and easily, but also provide vivid and interesting learning experiences.

However, the application of technology in English teaching also faces many challenges, from the lack of technology infrastructure to the lack of technology skills of teachers and students. These difficulties require synchronous and creative solutions, from investing in infrastructure, training teachers, to creating a learning environment that supports and motivates students.

In the context of globalization and international integration, improving English proficiency is an indispensable factor to prepare the young generation to integrate into the global labor market. Therefore, English education in the era of technology 4.0 is not only a trend but also an urgent need. To achieve this goal, there needs to be close coordination between teachers, students, and stakeholders in utilizing and maximizing the potential of modern technology, ensuring that each student has the opportunity to learn and develop fairly and effectively.

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