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## What Does It Take to Be 4.0 EFL Learners?

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**ABSTRACT:** In Industry 4.0, the use of technology in second and foreign language learning and acquisition is predominant. This study closely examined how successful EFL learners use the technologies available in Industry 4.0 to enhance their English proficiency, whether through conscious or subconscious efforts. One-to-one, semistructured interviews were employed to collect data from four non-native English speakers (all Indonesian) aged 15 to 18 years old with upper intermediate level of English. It was found out that the respondents make the most of digital devices and internet technologies to improve their English proficiency by (1) using digital devices and accessing Internet content that is mostly in the English language, and (2) developing personal interests such as playing online games involving multiple players from various countries, watching foreign movies with English subtitles, and participating in international fandom communities. This finding suggests that technologies available in Industry 4.0 provide numerous opportunities for respondents to use English in authentic environments.

### 1 INTRODUCTION

Industry 4.0, a term first introduced by the German government to define the ongoing industrial revolution (Kagermann et al. 2013), is bringing about changes in industry. The changes eventually touch almost every aspect in society with advancements in artificial intelligence (AI), big data, the Internet of Things (IoT), and other modern technological developments. Of many technological advancements, access to the Internet and its benefits for societal development are most noticeable. Currently, almost half of the world is regularly connected to the Internet (Schwab 2017). The proliferation of wireless networking technology and the transformation of digital media, which is a core component of Industry 4.0, has changed how people live and communicate with each other (Schwab 2017). Technological advancements along with changes in society offer ample opportunities for second and foreign language learning and acquisition.

The use of technology to teach and learn second and foreign languages goes back to the 1960s when CALL (computer-assisted language learning) was first introduced. In its early days, CALL emphasized computer programs providing instructions on language learning that leaned heavily toward the behavioristic approach. The field has progressed and evolved since then (Levy & Stockwell 2006; Garrett 2009). In terms of pedagogical theories of language, CALL has moved from using a behavioristic to a communicative approach in the late 1970s, and when the Internet first became available to the public, CALL based itself on the principles of an integrative approach (Warschauer & Kern 2000).

With the emerging Internet technologies and digital device advancement, the computer is not the only device that can be used as a medium for language learning. Learners could use smartphones, tablets, and e-book readers to enhance their second and foreign language skills. This has led to some criticism of CALL, as it focuses mainly on the computer. Other acronyms were then proposed, i.e., TELL (technology-enhanced language learning), NBLL (network-based



language learning), and MALL (mobile-assisted language learning) (Warschauer & Kern 2000; Bush & Terry 2007; Kukulska-Hulme & Shield 2008).

The early stage of Industry 4.0 also saw the development of Web 2.0. This second generation of Internet enables people to interact through social networking sites (SNS) such as Facebook, Twitter, and Instagram, collaborate through microblogging tools such as wikis, participate in three-dimensional (3-D) online games involving multiple players, or share their literary works online (web fiction). Now communication across distance, time, cultures, and languages has become ubiquitous. Indeed, the Internet now provides a wide array of visual, aural, and written language inputs, most of which are in English. Along with the Internet, computers in all their forms (desktop computers, laptops, smartphones, tablets, iPads, etc.) are used as “a major source of comprehensible input,” and can be used not only for conscious language learning but also for language acquisition (Jarvis & Krashen 2014).

In response to this development, Jarvis and Achilleos (2013) proposed MALU (mobile-assisted language use), the concept through which nonnative speakers of certain languages flexibly use various mobile gadgets to access or share information and to interact with other people using the learned language for academic or social purposes. This concept covers both conscious language learning assisted by technology and language acquisition through second and foreign language use when learners access technology.

Considerable research has been dedicated to investigating the use of technology in second and foreign language learning. Most focus on the investigation of conscious language learning in a formal context: technology-mediated writing classroom (Riley & ZareEkbatani 2014), YouTube videos as a pre-teaching strategy (Seilstad 2012), technology roles in the English as a foreign language (EFL) classroom (Haswani 2015; Gonzalez-Vera 2016), and podcasts in the EFL classroom (Abdous et al. 2009). Only a few have been devoted to examining the benefits of using technologies to subconsciously learn second and foreign languages in a more casual setting. Among those few are the studies on the practices and perceptions of English learners (non-native English speakers) in their use of digital devices to enhance their English (Jarvis & Achilleos 2013; Jarvis & Krashen 2014). Both studies focus on adult learners, as the research participants are university students.

This study attempted to examine how successful EFL teenage learners, within the Indonesian context, use technology to enhance their English proficiency, whether through conscious or subconscious efforts. The research questions are: (1) What kinds of language exposure do the learners receive through technologies available in Industry 4.0? (2) What attitudes do the learners possess to successfully improve their English in the Industry 4.0 era?

## 2 METHOD

This is qualitative research. The data were obtained through one-to-one, semistructured interviews. A set of guiding questions and prompts in open-ended forms were used in the interviews. This type of interview suits our needs, as it allows “interesting development” and lets respondents elaborate more on certain issues (Dörnyei 2007). Four non-native English speakers (all Indonesian) voluntarily participated in this study: Andi, Lara, Denis, and Ana (all are pseudonyms). All of them were high school students aged 15 to 18 years old with an upper intermediate level of English, confirmed by their PBT TOEFL scores (more than 500). They never lived in an English-speaking country, do not take English courses, have parents who speak very little English or none at all, and have accessed Web 2.0 and smartphone technologies from a young age. The interviews were conducted in English in a relaxed manner and took approximately an hour for each respondent. The interviews focused on finding information on the students’ practices in using technologies that benefit their English proficiency.

## 9 RESULTS AND DISCUSSION

The results of the semistructured interviews suggest that there is a significant link between the respondents’ language competence and the use of technologies available in Industry 4.0. The



respondents' access to the technologies is considered beneficial to their language learning and competence.

### 3.1 Use of technology

Table 1. Ownership of digital devices and access to the Internet

	Andi	Lara	Denis	Ana
Ownership of digital devices	Laptop, smartphone, tablet, iPad	Laptop, smartphone	Laptop, smartphone	Laptop, smartphone
Frequency of using the digital devices	Always	5 hours a day	Always	8 hours a day
Internet access	Available	Available	Available	Available
Frequency of accessing the Internet	0 hours a day	5 hours a day	12–15 hours a day	8 hours a day
Aim of usage	Academic purposes, reading comics, entertainment	Academic purposes, reading e-books, comics/webtoons, SNS	Personal interest, SNS, entertainment	Reading e-books, comics/webtoons, entertainment

Table 1 shows that all respondents have digital devices that they access extensively every day. They also claimed that they work more with their smartphones instead of laptops because of their practicality. They can also connect to the Internet most of the day, ranging from 5 to 15 hours a day, which means that they are exposed to Internet content for more than half a day. They used the Internet for academic purposes such as doing homework, looking for information to complete their assignments, reading comics/e-books/webtoons, exploring personal interests, getting entertainment (through watching TV series/anime/cartoons, playing online games/video games), and accessing their SNS (Facebook, Twitter, Instagram). The respondents stated that the availability of digital devices and Internet access are essential in their life and support their language competence.

- Interviewer** : *Are computers and other digital devices essential in your life?*
- Andi** : *I'll say yes. It's important because first thing first I can use it to do my homework but other people use it to play games or some other stuff. You can do your homework by yourself. You don't need to go to warnet (internet café). When you have your laptop it's easy for you to do your homework, to make a report.*
- Lara** : *Yes, definitely. I use my gadget to help me do my homework, work on my arts, and to communicate with my friends*
- Denis** : *Yes. I use them for lots of things. Essentially it's a part of me.*
- Ana** : *It is, mostly because I'm already used to it. Not only for entertainment purposes, but also as a learning media to fill up my curiosity.*

All respondents are considered digital natives. They have had digital devices and the Internet available from a young age. Their lives revolve around computers, smartphones, video games, and other digital media and gadgets. Therefore, this new generation of learners thinks and processes information fundamentally differently from the previous generations (Prensky 2001). The respondents stated that they are used to receiving information quickly, not only in written forms but also in aural and visual ones. They often obtain various types of information and learning sources to help them do their homework and make a report. This characteristic of digital natives changes how they learn. The respondents prefer to take learning into their own hands with the help of digital devices and Internet technologies.



### 3.2 Use of English in accessing technologies

The English language is the most preferred language for accessing and operating the technologies.

- Interviewer : <sup>4</sup> Which language do you use when using digital devices?  
 Andi : Most of the time I use English but sometimes I use Indonesian.  
 Lara : Mainly English and some Indonesian.  
 Denis : I prefer English when operating my gadgets, but I use Indonesian now and then.  
 Ana : Only English, it is easier that way.

The reason why they prefer to use English when operating gadgets is that they are more familiar with the English version of the technical terms used in their devices. For them, it is confusing when the language preferences in their gadgets are changed to Indonesian. The heavy use of digital devices means that the respondents received substantial exposure to the English language. This has made them prefer to use English as the operating language on their devices. The respondents also prefer to look for information from English sources. For example, Lara said, "When you want to look up for detailed information on something, you usually find it written in English, you know." Other respondents also expressed similar views on this matter. They said that most of the content on the Internet is in English. This finding shows that digital devices and the Internet encourage substantial use of English.

Another respondent, Denis, said "Yeah, at first, I struggled to understand what I'm reading. But, I forced myself to keep reading because the information I need is available only in English. And now, it's getting easier for me to understand them." Denis' case suggests that getting accustomed to English texts might help to improve his ability to comprehend English texts. This might be an indication that he subconsciously learns the language by accessing information available on the Internet. In other words, the process fits the definition of language acquisition instead of language learning. According to Krashen (2002), language acquisition refers to the process in which students master the language focusing on the function rather than form through their involvement in a meaningful exposure to the target language.

### 3.3 Personal interests provided by the Internet

Each respondent has certain personal interests that require the assistance of digital devices and the Internet. Three types of personal interests beneficial to respondents' English proficiency were identified in this study: online games, movies, and fan communities.

Through the interview, it is reported that respondents thought their English improved through video games since they play with gamers from other countries requiring them to speak English while playing the game.

- Denis : I used to play Minecraft and I played it often.  
 Interviewer : In what language is the game?  
 Denis : The game is in English of course. And other players mostly come from other countries so I interact with them using English.

Minecraft is a globally renowned video game that requires its players to collect resources to creatively build or craft houses, machines, or whatever they like. This game can be played alone but it also allows multiple players to collaborate on a single virtual world. This collaboration provides many opportunities for interaction. Players coming from countries across the globe are connected to each other and they use English to communicate. The players communicate to discuss strategies to successfully complete tasks requiring teamwork. However, they also interact with each other to express encouragement, offer compliments, or they just shout out to express their frustration. Minecraft provides an authentic environment to use English for its players.

Minecraft is an engaging game that makes the players strive to continuously develop their skills. It is not uncommon that players learn English for the sake of improving their gaming skills.



Denis said, “I read books essential to Minecraft players, watch lots of tutorial videos to improve my gaming skills.” The guidebooks and videos are available mostly in the English language. This situation forces Denis to get accustomed to reading in and listening to English.

Movies have also been known as effective media to enhance language proficiency. Two respondents, Andi and Ana, developed a special interest in movies. When they watch movies, TV series, anime, and cartoons, they claimed that the movies are in English, Indonesian, or Japanese. However, whenever watching foreign movies, Andi and Ana preferred using English subtitles.

- Interviewer* : *When you watch movies/TV series/ animes in a foreign language, do you need subtitles? In what language are the subtitles?*
- Andi* : *Yes, I do. For animes, they use Japanese of course but I watch them with English subtitles. But for other kinds I use English of course. English is easy to be understood.*
- Ana* : *Yes so I could understand the context more clearly. Preferably English.*

Another personal interest that is considered beneficial to English proficiency is fan communities, often called fandom. A fandom is a community where fans of someone (usually a celebrity) or something (movies, anime, comics, books) gather in a forum either physically or online. The respondent who joined such community is Lara. Lara is a fan of anime (Japanese animation) and manga (Japanese comics) and stated, “I join international and local manga and anime communities.” Members of the community freely talk about their favorite manga and anime. Lara said that “even in my local manga community whose members are all Indonesian, we use English to talk to each other all the time.” She even developed herself from a manga fan into a manga artist. She draws her favorite manga characters or even creates a totally new character and shares her work with her communities. Along with her drawings, she provides descriptions and sometimes a short story about the characters she drew. Lara is only one example of how a digital native uses English (a foreign language) to compose texts and posts them publicly. The fellow members will then give feedback on Lara’s arts or sometimes they address the language (grammatical errors) in a supportive manner.

These personal interests show that technologies in Industry 4.0 make it possible for learners to communicate in an authentic borderless environment and even to pass the limit by creating an environment supporting their language competence. When learners play video /online games, for instance, they indirectly communicate with people from around the world, which requires them to use English as a lingua franca. This allows students to get authentic input of language spoken by both native speakers and non-native speakers of English. This also perhaps presents them with vocabulary that may be new and challenging for them. This can be regarded as a comprehensible input that becomes a significant indicator for improving learners’ competence in language acquisition.

Comprehensible input is considered as meaningful input that is a little bit harder than the acquirers’ current language competence. This input is essential to get learners’ attention and curiosity in learning the language and to keep them motivated to learn the language. The era of Industry 4.0 creates no borders for people to communicate around the world and provides a real use of language. In addition, when the access to authentic comprehensible input is limited or unavailable, the era enables learners to create an environment that resembles the real one as a platform to improve their language competence. For instance, Lara stated that she spent her time interacting with mostly Indonesian people, but she made use of English to communicate. This proves that it is possible to create a language acquisition environment promoting language competence in a non-native environment where students can communicate confidently, share information and knowledge, and at the same time improve each other’s language ability.

Language acquisition is proven to have a significant effect on enhancing students’ language proficiency level. This is confirmed by the results of the TOEFL test obtained by the respondents, ranging from 537 to 567. According to the American Council on the Teaching of Foreign Language (ACTFL), those scores belong to the upper intermediate category. This category is under the umbrella of the advanced proficiency benchmark of ACTFL (Mastermind Europe 2018). This category is characterized by speakers’ ability to easily and confidently communicate



about daily routines, social conditions, and topics they are familiar with (ACTFL Proficiency Guidelines 2012).

The existence of digital technologies in Industry 4.0 enables learners to not have to depend on what they learn in the classroom. Since classroom learning can be limited, the technologies in Industry 4.0 foster students' language acquisition process by providing learners more chances to learn and practice the language through an informal setting. Krashen (2009) suggests the potential of the outside environment to boost learner's acquisition. He points out that the outside world enables learners to surpass their ability up to the intermediate level. The informal environment can provide learners with more comprehensible input and more unlimited exposure to real language use. Later, the technologies also accommodate learners' preferences to study individually. Learners have different study preferences. Some prefer studying in groups, while others do not. For the latter, studying through Industry 4.0 technologies gives them space to learn confidently based on their own learning pace. Eventually, this will also build learners' autonomy to look for information for the sake of their language learning progress. The respondents in this study also belong to those who prefer studying individually in an informal setting.

*Interviewer : Do you prefer learning English in a formal setting (school) or through the Internet?*

*Lara : I prefer learning through Internet. They don't teach slangs at school.*

Overall, respondents believe that the language acquisition process through Industry 4.0 plays an important role for them. The access to digital devices and other technologies (e.g., online/video games, YouTube, movies, dramas, TV series, cartoons, news, e-books, articles, journals, and social media) help them improve their English.

Another interesting finding in this study is that the learners' proficiency improved as a result of their interaction with the technologies requiring them to speak English, not with particular technology design for English language learning. All of the respondents have never accessed any sites or platforms specifically designed for English language learning. They just practice their English through digital devices and technologies (YouTube, video games, social media, etc.) that require them to speak in English. The respondents have also reported that they never attended an English course. This reveals that outside the English subject at school, they acquire English indirectly and subconsciously. Thus, the process that actually occurs is not language learning but language acquisition where people learn the language subconsciously.

From the preceding results, the answers to the research questions formulated before were obtained. First, the exposure of learners to technologies available in Industry 4.0 is especially through the ownership of the digital devices together with the applications and features they offer. In other words, digital devices, such as laptops and smartphones and their applications and features (e.g., Internet, onlinevideo games, YouTube, movies, dramas, TV series, cartoons, news, e-books, articles, journals, WhatsApp, and social media) contribute to significant progress in learners' language proficiency. From those media, learners learn new vocabulary, pronunciation, and confidence.

Second, the attitudes that the respondents adopt regarding exposure to technology to successfully improve their English in the Industry 4.0 era, according to the interviews, are being smart and wise toward the available technologies. Learners need to be smart and take the initiative in using technology to support their learning. As suggested by Krashen (2009), classroom learning is limited and learning in an informal context helps learners advance their language learning process. <sup>14</sup> Learners should be aware of the limitation of classroom learning and develop their initiatives so as not to depend on learning a language from classroom interaction only. They should indeed be active in using <sup>15</sup> technologies promoting language acquisition. By doing so, learners can have space to become exposed to the real use of language and to study at their own pace. Thus, learning autonomy will develop. However, learners' initiatives to learn English from the technologies do not necessarily stop them from attending the classroom. As Ana said, "earning English from the Internet is fun and all but teachers still helps me a lot." It has been known that the acquisition process focuses more on the message rather than the form. Therefore, the accuracy of what learners acquire still needs to be confirmed and that is the role of classroom learning. The learning process is where learners can clarify what they learn from the technologies and reach the expected accuracy.



Aside from being smart and taking initiatives, learners should also have a wise attitude toward technologies. Despite the positive effects that learners may gain from digital devices and technologies, the misuses and negative effects of technology also present threats of learners' dependence on technology. If learners do not know how to use technology wisely, it is possible for them to get exposed to the negative sides of technologies instead of learning from them.

#### 4 CONCLUSION

The emerging Industry 4.0 has intrigued researchers and practitioners in recent years to study which attitudes EFL learners need to adopt in this 4.0 era. The respondents in this study were purposively sampled because their English was quite good as a result of their intense interaction with digital devices and technologies. The results of the study reveal that the technologies available in Industry 4.0 exposed learners to authentic input for language acquisition through digital devices together with the applications and features they provide. Those exposures were considered capable of increasing learners' listening, speaking, reading, and writing skills. Finally, to be EFL learners in the Industry 4.0 era requires learners to take the initiative, as well as be smart and wise regarding the technologies.

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