



# Effects of using educational technology tools to enhance EFL students' speaking performance

Mekuriaw Genanew Asratie<sup>1</sup> · Bantalem Derseh Wale<sup>1</sup> · Yibeltal Tadele Aylet<sup>1</sup>

Received: 10 May 2022 / Accepted: 28 December 2022 / Published online: 19 January 2023

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2023

## Abstract

Educational speaking technology is a digital expertise used to enhance speaking performance. This research examined the effects of using educational speaking technology tools: FORVO, YouGlish, and OALD 8th ed. to enhance students' speaking performance. A quasi-experimental pretest-posttest two groups design was used. Test, questionnaire, interview, and teacher-log were used to gather the data from 82 first-year Information communication and Technology (IT) students selected through comprehensive sampling. The experimental group students had learned speaking skills through educational speaking technology tools while the control group students learned using the conventional method. When the quantitative data were analyzed through independent samples T-test, the qualitative data were analyzed through thematic analysis. The findings of the study uncovered that there was a statistical difference between the experimental and control group students in their speaking performance. Accordingly, the learners who had learned through educational speaking technology have enhanced their speaking performance compared to the students that learned conventionally. Predominantly, students who learned through educational speaking technology were fluent, coherent, and accurate in their speech, rich in lexical resources, used a variety of grammatical ranges, and better in pronunciation. Besides, the students' have positive perceptions towards using educational speaking technology tools. Consequently, this study recommends researchers, teachers, and students to make the use of educational technology and to go in line with the state of the art.

**Keywords** Educational technology · Speaking technology · Speaking performance · Perception · Information communication technology · Enhance

## 1 Introduction

Technology plays a great role to deliver education to students outside of school. Commendably, teachers were able to deploy remote learning technologies using a combination of TV, Radio, Online, and Mobile Platforms WBG (The World Bank Group, 2021). WBG suggested that using technologies in education can play a crucial role in supporting teachers, students, and the learning process more broadly in order to become effective in their subject matter. In this research, emphasis is given on what effects would be occurred in students' English language learning in general and speaking performance in particular through using educational technologies.

The technologies have provided us with the use of a number of technology-based tools to enhance students' speaking skills. Aly et al., (2013) stated it has become increasingly important in EFL (English as a Foreign Language) learning due to the large number of learners who want to use English freely for communicative purposes. It is supported by (Lezaraton, 1996) that speaking in a second or foreign language has often been viewed as the most demanding of the four skills. It is known that this skill is one of the main English language skills that students improve. Hence, it should be accompanied by performance consists of fluency and coherence, lexical resource, grammatical range and accuracy, and pronunciation which students must learn (Sosas, 2021).

The main point in this study is assessing effects of integrating speaking technologies to enhance students' speaking performance. This implies that there are tremendous technologies to enhance learners' speaking performance. Educational technologies are occurred and get increased in the world. In Ethiopia also, technology has been increasing to support the education, for utilizing technology is a fundamental practise in EFL. As a result, the use of technology in learning speaking skills is put forward to improve students' oral performance (Hong, 2006). However, English language, which is the medium of instruction in Ethiopia, becomes difficult for teachers and learners as it is not their mother tongue. To overcome such challenge, using educational technology is consulted because it has the power to ease speaking performance obstacles. In line with speaking performance, many scholars such as (Vecchio & Guerrero, 1995) conceptualized it as the ability to use oral language appropriately and effectively in learning activities in different contexts in and outside the classroom. (Richards & Schmidt, 2002) also argued that it is speaking rapidly, smoothly, and accurately. Moreover, speaking performance is the feature which gives speech the qualities of being natural and normal.

Therefore, students' speaking performance can be enhanced when using educational speaking technologies such as YouGlish, Zoom, FORVO, Oxford Advanced Dictionary (8th ed.), Amharic-English Dictionary, the Color Vowel Chart, WhatsApp, Skype, BBC Learning English, and VOA learning English. These technologies are helpful to listen to the pronunciations of unknown words and phrases OPEN (Online Professional English Network, 2020). However, in this research, YouGlish, FORVO, and Oxford Advanced Dictionary (8th ed.) were employed to enhance EFL students' speaking performance at Injibara University.

## 2 Statement of the problem

Utilizing educational speaking technology in speaking lessons is needed to fill current gaps faced by the conventional methods of teaching speaking skills. Speaking is a challenging practise that requires fluency and coherence, lexical resources, grammatical range and accuracy, and pronunciation (H. Douglas, 2018). Previous studies like: (Fajariyah, 2009; Hong, 2006; Luoma, 2004, and Nur & et al., 2021) showed that most EFL learners were ineffective in their speaking performance. Students often fear in speaking due to their incapability of fluency and coherence, lexical resources, grammatical range and accuracy, and pronunciation skills.

Besides, the current researchers' teaching experience also confirmed that EFL students at Injibara University face speaking problems on fluency and coherence, lexical resources, grammatical range and accuracy, and pronunciation. Hence, the students are unable to speak fluently due to repetition and hesitation. Most of them are also unable to speak coherently with appropriate cohesive features. They do not also use a wide vocabulary resource readily and flexibly to convey precise meaning. Moreover, they do not use a full range of structures and even a range of pronunciation features with precision and subtlety in their speech. This is because the students often do not substantiate their learning through educational speaking technologies that would enhance their fluency and coherence, lexical resources, grammatical range and accuracy, and pronunciation. Thus, the conventional teaching speaking methods are still in use though the methods do not seem to alleviate the existing speaking problems faced the students. Consequently, this problem motivates the current researchers to seek for better learning methods (like educational speaking technology) that can enhance students' speaking performance. This is because, as previous research findings unconcealed, using educational speaking technology is essential to fill the gaps of the conventional teaching methods since it combined practical speaking tools that involve students with various audio-video input and let them practise with their own pace. In using educational speaking technologies, the teacher is not a source of knowledge rather the students learn speaking skills using educational speaking technologies. Hence, the teacher is mainly a facilitator of the learning process.

Educational technology is now being carried out to overcome educational problems happening in Ethiopian universities (Assefa, 2017). It assists EFL learners to be independent from offline classroom learning. It allows them the choices to work on their learning material at any time of the day (Jonassen, 1996; Salaberry, 1999; and Rost 2002). Particularly, learning speaking skills requires educational technologies including internet, podcasts, video conferencing, videos and speech recognition software, and apps which are paramount ways to assist students' speaking skills (Omidvar & Bahadorfar, 2014). In addition, Alghaber (2019) remarks technologies are inseparable elements of students' speaking performance achievement methods.

Nonetheless, EFL students and teachers are not seen in applying technology, which makes learning easy and everlasting. Teachers often give the students with printed handouts consist of full of language skills without integrating authentic educational speaking technologies mentioned above. Today, these conventional materials should be supported by technology. When teachers and learners commit to use only the conventional tools, teaching and learning speaking involves a variety of challenges to

them (Sherine et al., 2020). As Sherine et al., pointed out the major challenge the EFL learners face is limited number of classes allotted for speaking and lack of resources.

In relation to challenges, many researchers for example, (Atali & Bergil, 2012) explored that students were unhappy with their pronunciation, accuracy, fluency, grammar and diction, and they are neither aware of the sound structure of English nor able to articulate the sound due to their inability to use educational speaking technology tools. Therefore, using smartphones or computer products of technology has a positive effect on students' speaking skills (Sherine et al., 2020). However, aside from these materials, integrating appropriate educational technology-based speaking tools to improve students' speaking performance is necessary. Furthermore, Sosas (2021) recommends that technology can be aligned in learning speaking skills with communicative way of teaching and learning which allows students to convey themselves in a skillful and competent. Nonetheless, students are hardly incorporating it into education especially in learning speaking skills at Injibara University.

Besides, saying the words, the students and teachers are in threatening due to they use conventional materials (Marilyn & Harcourt, 2019). When the students commit mispronunciation, influent, grammar inaccuracy, and memorized utterances of the target language, misunderstanding of message will be happened because of deficiency practise with appropriate speaking tools. However, using educational technology speaking tools enhance the students' speaking performance since it allows them to practise speaking via the varieties of tools.

As a result, students should be assisted with the combination of today's educational speaking technologies to enhance their speaking skills. To fill these gaps, this study examined the effects of using educational technology speaking tools: YouGlish, FORVO, and Oxford Dictionary 8th edition on EFL students' speaking performance.

However, even though there have been national and international previous studies conducted on using educational speaking technology, there are inadequate studies conducted on the effects of using educational speaking technologies on students' speaking performance. Specifically, using educational speaking technology seems to have been a missing feature of teaching speaking skills, in the study area. Hence, the current study was conducted to fill this research gap in exploring the effects of using educational speaking technology on EFL students' speaking performance. More precisely, the study has been intended to improve EFL students' speaking performance in consideration with grammar, vocabulary, fluency, and accuracy. It can also show benefits of using educational tools for teachers, and even ministry of education. Moreover, it is highly important for educational bodies to know integrating technology in education is highly necessary so as to facilitate the teaching learning process easily and attractively since today is requiring people to perform their tasks especially academic events with the support of technology. Accordingly, the following research questions have been constructed: (1) what are the effects of using educational technology speaking tools on EFL learners' Speaking performance? (2) What are students' perceptions towards using educational speaking technologies in speaking classrooms?

### 3 Review of related literature

#### 3.1 Speaking performance

Speaking performance, in this study, is students' ability or/and proficiency in speaking. Researchers including (Derakhshan et al., 2016) stated that speaking is part of learners' academic life that they should enhance. EFL learners' speech is needed to be fluent, coherent, accurate in grammar and pronunciation, and enrich in lexical resource. Accordingly, speaking performance, in this study, incorporates fluency and coherence, lexical resource, grammatical range, accuracy, and pronunciation.

**Fluency and coherence** Speaking with fluency means the individual's speech flows well without many interruptions (Marilyn & Harcourt, 2019; Mairi, 2016) also describes that fluency is one's English language proficiency much better and sounds slicker, more natural, and more impressive for the listeners. Likewise, Luoma (2004) explains fluency as smoothness, rate of speech, length of utterances, connectedness of ideas, and also absence of excessive pausing. Furthermore, Stockdale (2009) states that it occurs when somebody speaks a foreign language like a native speaker with the least number of silent pauses, filled pauses, self-corrections, false starts, and hesitations.

However, in EFL, fluency is one of the most difficult aspects to develop within the speaking skills (Briesmaster & Molina, 2017). Most students are unable to express their thought fluently. As per the current researchers' teaching experiences, mostly for those who are learning English language skills, fluency is still a problem since grammar correctness is being given more attention other than fluency. Speaking and coherence are inseparable in speaking performance. In this study, coherence is considered as being smooth, logical and signpost the organization of one's speech. This is also reinforced by (H. Douglas 2018) that one speaks coherently with fully appropriate cohesive features and develops topics fully and appropriately.

**Lexical resource** Lexical resources according to Shikhar K. & et al. (2012) are a language resource consisting of data regarding the lexemes of the lexicon of one or more languages. Students were in danger of having word power of English language even if they have learnt English language from kindergarten to university. Learners were not able to know English words well; they encountered tricky in having presentation and making speech to the audience. However, (H. Douglas 2018) argued that students should use vocabulary with full flexibility and precision in all topics and use idiomatic language naturally. Therefore, overcoming such a threatening, learners should be assisted by using educational speaking technology tools.

**Grammatical range and accuracy** Nunan (2015) stated that accuracy is the extent to which the learners' speech is grammatically acceptable with clear, intelligible pronunciation and appropriate choice of diction. H. Douglas, (2018) defined accuracy that the speaker makes his/her speech clear and grammatical. It can be achieved by allowing students to focus on phonology, grammar and discourse while speaking.

In relation to grammar, a research by (Masyithah, 2019) concluded that non-native speakers of English language speak with more incorrect grammar than a native speaker would. Students should use full range of structures appropriately while speaking. In learning speaking skills, these conventional materials lack activities supported by sound, transcriptions of words, videos, and colored images. Learning with such materials, the only intervener was instructor, who is non-native speaker of English language skills to teach students about words, accuracy, fluency, grammar and pronunciation.

**Pronunciation** pronunciation, which is the component of speaking, is a key to produce acceptable and remarkable speech (Khanh, 2021). Hence, learners are expected to perform the elements of pronunciation such as sounds, rhythm, and intonation. In addition, (Wardhani, 2018) stated that it is important to make learners' language intelligible and understandable.

## 4 Educational speaking technology tools

A study by West (2013) revealed that EFL teaching and learning has not changed yet in terms of giving equal attention for all language skills. Majority of the English language courses in universities are being learnt through conventional methods excluding speaking skills. Hence, EFL learners still cannot properly speak English to the expected level though they are university students. However, nowadays various technologies are being introduced to learn speaking skills in the classrooms.

Alsuhaim (2017) investigated learning pronunciation, words, fluency and coherence, grammar and accuracy, which are the components of speaking performance, has moved a drive to integrate educational speaking technology tools as new resources educational speaking technology tools provide students with ample opportunities to practise the elements of speaking and receive feedback. Among these tools, this study combined YouGlish, FORVO, and Oxford Advanced Learners' Dictionary (8th ed) to explore their effects on EFL students' speaking performance. These technological tools have a number of uses either in sound or video that help learners to get more practical topics which enhance speaking performance. Besides from this, they are user friendly to be used in learning speaking skills as supportive materials.

### 4.1 YouGlish

YouGlish is a technological tool used to learn pronunciation online. According to Fu & Yang (2019), YouGlish is a lexical supplementary material to bring an effect on learners' speaking skills, including pronunciation, intonation, word usage, accuracy, fluency, and grammar. Regarding this, Green (2005) remarks technology can play an integral part in providing English language students with valuable language experiences as they learn a new language using verbal interaction and a variety of language functions. However, university students do not have the opportunity to use YouGlish to learn EFL for the inaccessibility of technology (Sevy-Biloon & Chroman, 2019).

This can be a cause in decreasing students' performance to speak and communicate effectively. Therefore, it is suggested that using technology like YouGlish perhaps enhance students' speaking performance. In this research, EFL students used this technology in the place where the internet is accessible with desktop or easy hand-held mobile phones, and they practised through searching for English words and phrases by listening to the native speakers to enhance their speaking performance at Injibara University.

#### 4.1.1 FORVO

FORVO, which is an online pronunciation dictionary, hosts over 2.2 million sound files that represent utterances of native speakers of many international languages (Bajorek, 2017). For instance, languages such as English, French, German, and etc. are found in this educational technology tool. Accordingly, it enables EFL students to improve their speaking performance through listening online to the right pronunciation of English words and phrases. Bajorek (2017) also remarks that FORVO is the contemporary tool for language learners, instructors, and researchers, and exposes novel pronunciation development chances.

#### 4.2 Oxford advanced learners' dictionary (8th ed)

Oxford Advanced Learners' Dictionary (8th ed) is a comprehensive digital dictionary for advanced learners. One of the most important resources when learning English is a dictionary, and the Oxford Advanced Learner's Dictionary is a great digital dictionary specifically geared for learners. The Oxford Advanced Learner's Dictionary (8th ed) is used to search for words in an easier way. It contains over 180,000 words and phrases. Besides, it helps learners to listen to the pronunciation of words having thousands of audio files with real voices. So, using the dictionary, students can read the meanings of the unknown words with transcription and pronunciation. This helps learners to become rich in word power and enables them to become good at speaking performance (Miller, 2006).

### 5 Effects of educational speaking technology on students' speaking performance

Educational speaking technology plays an integral part in providing students with valuable language experiences as they learn a new language (Green, 2005). These can be used to help providing additional language learning opportunities for EFL students (Green, 2005). Furthermore, an exploration on technology in teaching speaking and its effects to students learning English portrayed that integrating technology in teaching methods is a fundamental practise in learning EFL (Sosas, 2021). She suggested that using educational speaking technology tools in learning speaking has influences towards EFL students speaking performance.

Similarly, a study conducted by (Fajariyah, 2009) on improving grade eight students' speaking proficiency using games showed that students' speaking perfor-



mance improved in answering the teacher's questions orally, identifying the words and grammar used in the expression, making sentences using appropriate grammar and vocabulary and expressing their idea. Khanh (2021) reviewed the effects of Communication Technology on learners' Speaking Skills development, and he found that using communication technology boosts the students' speaking skills. Likewise, a study conducted on technological tools such as Internet, podcasts, video conferencing, videos and speech recognition software indicated that these have been regarded as ways of helping students to improve speaking performance (Omidvar, & Bahadorfar, 2014).

Khanh (2021) concluded that even though speaking is not a skill that students can learn at home alone, learners can be assisted to study by themselves outside the classroom due to the growth of technology. Besides, (Gunada, 2017) investigate a research on "Using YouTube Video; An IT-based Media to Improve Students' Speaking Skill." The result showed that using such technologies is promising to improve EFL students' speaking performance. Educational speaking technology gives students better exposure toward the aspects of speaking performance.

Miller (2006) investigated the effect of English learners' dictionaries on international students' acquisition of the English article system. The results showed that dictionaries can help students to improve their English language skills. Besides, students who use dictionary were good at grammar from those who do not use, and it is used to increase learners' vocabularies.

## 6 Students' perceptions towards using educational technologies in speaking classrooms

Perception towards educational speaking technologies affects students to use educational speaking technology tools in their speaking classes. In this regard, different scholars tried to assess students' perceptions towards using educational technologies in speaking classrooms in a more generalized way rather than studying it specifically. From these, (Yousif & Abeer, 2021) is one of them who has done research focusing on students' perception on virtual classrooms and its impact on their communications in Saudi Arabian university students. The result showed that even though the students showed positive attitudes towards virtual classrooms, the majority of them disagreed on their effectiveness in helping students recognize their oral mistakes. Consequently, students perceived that recognizing mistakes and getting feedbacks and also lack of face-to-face communication had a negative impact on their communication in virtual classrooms.

Another research was also done by Alhaisoni (2016) on Saudi EFL preparatory students' perception of using dictionary. The results revealed that students showed positive attitude towards using bilingual dictionary, online dictionaries and Google translators than print versions. Hence, the researcher finally recommended that teachers should learn about educational technologies.

Moreover, Daniel J. et al., (2017) conducted a study on students' use and perception of technology enhanced learning in a mass lecture knowledge-rich domain first year undergraduate classes in England at Northumbria University. The finding



showed that students perceived that using Twitter as a technological learning tool has a greater impact in their education. However, such studies are scanty in Ethiopian context. Hence, studying the effect of using educational technologies speaking tools in Ethiopia has become very timely and crucial.

## 7 Methodology

### 7.1 Research design

This study aimed at assessing the effects of using educational speaking technology tools on EFL students' speaking performance. To achieve this objective, the researchers used a quasi-experimental design that consists of pretest and post-test with two group participants accompanied by mixed research approach. In quasi experiential research design, two groups of participants (the control and experimental groups) were often used, and pretests and post tests were given to both groups of students.

## 8 Participants

The participants of the study were 82 first year Information communication and Technology (IT) students who were taking “Communicative English Language Skills II” course in sections ‘A’ and ‘B’ at Injibara University. The students were chosen using comprehensive sampling technique.

## 9 Data collection instruments

The data were gathered through test, questionnaire, semi-structured interview, and teacher log. While the test comprised both pre-test and post-test, it was used to collect quantitative data on students' speaking performance especially on their fluency and coherence, grammar range and accuracy, lexical source and pronunciation. The pre-test consists three parts of speaking tasks that the students provided a guided talk about their experiences. The post-test also comprised three parts that the students spoke on the given topics. Each test has a total weight of 36% based on the IELTS Speaking Band Descriptors. The second data gathering tool was questionnaire which measured students' perceptions towards utilizing educational speaking technology tools to improve their speaking performance. It was designed with 15 closed-ended items with likert scale measurements labelling from Strongly Disagree (1) to Strongly Agree (5). Semi-structured interview was also used to collect data from twelve students on their perception towards using educational speaking technology tools. The last one was teacher log which the teacher took notes during the intervention on students' engagement using the educational speaking technologies.

## 10 Data collection procedures

To collect the essential data, the data gathering tools including tests and questionnaire were equipped. First, the IT students assigned in section ‘A’ were taken as control group, and those who were enrolled in section ‘B’ were identified as experimental group. Then, the pre-test consisted of three presentations was given to both control and experimental groups to know their speaking performance: fluency and coherence, lexical resources, grammatical range and accuracy, and pronunciation. Both groups were given a chance to speak about three different topics within five minutes for each three presentations.

After the completion of the guided talk in the pre-tests took fifteen minutes and marked from 100%, the intervention was carried out. In the teaching learning process, the control group students assigned in section ‘A’ learned speaking skills with the conventional material i.e. module. The handout “*Communicative English Language Skills IP*” that IT students must take during their stay at university was used for control group students. Using this material, the teacher taught the control groups speaking skills with different tasks. For example, the students were given oral activities sharing problem-solving experiences to classmates based on scenarios, describing things in comparing and contrasting technique, having debates, place descriptions, and etc. to improve students’ fluency and coherence, lexical resource, grammar range and accuracy, and pronunciation. With such materials, teaching and learning process took place over two months in which students learned speaking skills for three hours per week.

For the experimental group students assigned in section ‘B’, educational speaking technology tools: YouGlish, FORVO, and Oxford Advanced Learning Dictionary 8th edition (OALD 8th ed) were installed on the desktop computers in English Language Improvement Centre (ELIC) and on their easy hand held phones. Next, the teacher oriented the students on how they can use these tools to enhance their speaking performance. And, the teacher assisted students in opening YouGlish and searched for English words such as village, Bilharzia, confront, interested, interesting, favorite, and etc. to listen to an exact pronunciation. Second, with FORVO, the students practised in listening to the pronunciations and meanings of unfamiliar words like build, building, where, why, struggle, and etc. on the desktop computer. Besides, (OALD 8th ed) was used to listen to the exact pronunciations, meanings of the words in different parts of speeches with examples in a sentence form. Students also learned about IPA transcriptions words to say correctly using this dictionary. Aside from this, students were practising through recording their pronunciation with the help of recorder, and later listening what they recorded. With the same teacher, the intervention was lasted for two months likewise in conventional materials for three hours per week. During the intervention, teacher log was held in both control and experimental group students. The teacher wrote down his experiences such as weaknesses, strengths, impacts, and etc. of conventional material, and YouGlish, FORVO, and (OALD 8th ed) during his intervention.

After the two months of intervention, both groups of students were evaluated in the post-test which was identical with the pre-test. In this test, the control and experimental groups were tested with guided speeches that include overall description of their

schools, favorite field of study, and a persuasive speech on the best measurements that the people should take to overcome COVID-19 pandemic. Finally, the questionnaire was administered both groups to measure their perceptions towards using educational speaking technology tools for enhancement of speaking performance.

## 11 Data analysis methods

The collected data were analyzed through quantitative and qualitative methods. First, the quantitative data gathered through tests were analyzed through independent samples T-test using the Statistical Package for Social Science (SPSS) version 26 software program. The independent samples T-test was used to determine if there were differences on control and experimental groups' improvements on speaking performance including fluency and coherence, lexical resource, grammar and accuracy, and pronunciation using conventional materials and educational speaking technology tools before and after the intervention. Similarly, the data from questionnaire were analyzed in descriptive statistics such as mean, standard deviation to indicate EFL students' perception towards using educational speaking technology tools to improve their speaking performance. In addition to this, the semi-structured interview and the teacher's log were analyzed using qualitative data analysis techniques.

## 12 Results

In this part, the results the study on the students speaking performance and their perception towards using speaking technology tools are presented. The results of this study are based on the data gained through tests, teacher log, interview, and questionnaire.

## 13 Students' speaking performance enhancement

The students' speaking performance enhancement was assessed through tests, and the data was analyzed using descriptive statistics and independent samples t-test. Besides, a qualitative data gathered through teacher log was also used to supplement the quantitative data on students' speaking performance enhancement.

**Table 1** Descriptive Statistics of Control and Experimental Groups

Tests	Participants	N	Mean	Std. Deviation	Std. Error Mean
<b>Pretest</b>	Control Group	40	35.20	1.572	0.249
	Experimental Group	42	36.45	1.783	0.275
<b>Posttest</b>	Control Group	40	36.92	2.141	0.339
	Experimental Group	42	46.29	2.452	0.378

**Table 2** Independent Samples T test of Control and Experimental Groups

		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Total Results	Equal variances assumed	1.553	.216	18.375	80	.000	-9.361	.509
	Equal variances not assumed			18.436	79.414	.000	-9.361	.508

Besides, the teacher log also confirmed that the students' speaking performance that incorporates fluency and coherence, lexical resources, grammatical range and accuracy, and pronunciation has been improved gradually when the students have repeatedly practised the speaking technology tools like YouGlish, FORVO, (OALD 8th ed). For instance, the teacher log written on the first day of the intervention revealed:

The descriptive statistics result in Table 1 shows that the experimental and control groups had akin speaking performance in the pre-test. Hence, while the experimental group had a ( $M=36.45$   $SD=1.783$ ), and the control group had ( $M=35.20$   $SD=1.572$ ). Though it looks as if the means and standard deviations of both the experimental and control group students had some variances, the differences were not significant. Thus, it implies that both groups had similar speaking performance in the pre-test. Nevertheless, the students' mean score and standard deviation result in the post test were statistically different. Table 1 indicates that the experimental group had ( $M=46.29$   $SD=2.452$ ), while the control group had ( $M=36.92$   $SD=2.141$ ) in the posttest.

Most importantly, the independent samples t test result in Table 2 also depicted that Levene's test for equality of variances exhibited no violations,  $P=.216$ . The output gained from the independent t-test indicates that there was a statistically significant difference between the control group and the experimental group  $t(80)=1.553$ ,  $P<.05$ ,  $d=0.509$ ). It divulges that the EFL learners who had learned speaking skills through speaking technology tools have surpassed in their speaking performance.

It is the first day that I am beginning to teach students speaking skills with speaking technology tools. The students seem new to the technology tools while I introduced them the names of the technologies. The students do not know what YouGlish and FORVO are. Almost all of the students know that Oxford dictionary is used to know the meanings of new words, but they were not aware of its use to listen one's own sound of pronouncing words. When I tried to show them how the technologies can be used, most of the students were in difficulty to even to operate the speaking technology tools.

The teacher log, reported in the mid of the intervention, indicated that the students were familiar with the speaking technology tools, and students were using them though they were not that much effective. For example, the teacher reported:

Nevertheless, today, the students used educational speaking technologies while learning speaking skills. They have practised speaking skills through YouGlish, FORVO, and Oxford Advanced Learners' Dictionary (8th ed).

Moreover, the teacher log written towards the end of the intervention showed:

... now, the students have practiced pronouncing various words using the OALD dictionary. Most of the students had pronounced the words in a better way compared to their pronunciation performance shown while I introduced the speaking technologies to them. They also learnt vocabularies through the Words in the news.

## 14 Students' perceptions in educational speaking technology

This study examined EFL students' perception towards using educational speaking technology to enhance speaking performance. Accordingly, the experimental group students' perceptions were examined through questionnaire and semi-structured interview. The findings showed that the students had positive perceptions towards using educational speaking technology to develop their speaking performance. Particularly, the students were interested to use educational speaking technologies as it is shown in Table 3.

As the descriptive statistics result in Table 3 depicted, the students had ( $M=4.38$   $SD=0.669$ ) on whether they enjoy using educational speaking technology in their speaking classes. It implies that the students had positive perceptions in using educational speaking technology since the mean value was greater than 3, the mean value. Similarly, the table also showed that the students had ( $M=4.29$   $SD=0.463$ ) to using educational speaking technology enhances speaking performance which indicates that they had positive perception to it. The students' response to whether they would like to use educational speaking technologies to do speaking activities ( $M=4.19$   $SD=0.602$ ) showed that they had positive views to educational technologies. The students also replied that they became better English speakers when they use speaking educational technologies ( $M=4.38$   $SD=0.669$ ). As it can be seen in the table, the students' responses ( $M=4.57$   $SD=0.598$ ) implied that using educational

**Table 3** Students' interest in using educational speaking technology

No	Items	Mean	Std. Deviation	Std. Error of Mean
1	I enjoy using educational speaking technology in my speaking class	4.38	0.669	0.146
2	Using educational speaking technology enhances speaking performance	4.29	0.463	0.101
3	I would like to use educational technologies to do speaking activities	4.19	0.602	0.131
4	I become a better English speaker when I use educational technologies	4.38	0.669	0.146
5	Using educational technologies helps me to make my speech clearer	4.57	0.598	0.130
6	I look forward to educational speaking technologies in speaking classes	4.43	0.598	0.130

**Table 4** Students' view on the effectiveness of educational speaking technology

No	Items	Mean	Std. Deviation	Std. Error of Mean
1	Educational speaking technology improves fluency.	4.62	0.590	0.129
2	Educational speaking technology improves coherence.	4.57	0.598	0.130
3	Educational speaking technology develops lexical resource.	4.33	0.577	0.126
4	Educational technology increases grammatical range.	4.48	0.602	0.131
5	Educational technology increases accuracy.	4.33	0.658	0.144
6	Educational speaking technology enhances pronunciation.	4.33	0.658	0.144

**Table 5** Students' viewpoint on the roles of educational speaking technologies

No	Items	Mean	Std. Deviation	Std. Error of Mean
1	FORVO helps me develop my speaking performance.	4.38	0.669	0.146
2	YouGlish serves me enhance my speaking performance.	4.33	0.577	0.126
3	Oxford Advanced Learners' Dictionary helps to develop speaking skills.	4.43	0.598	0.130

technologies helps them to make their speech clearer. Finally, the students confirmed ( $M=4.43$   $SD=0.598$ ) that they look forward to educational speaking technologies in speaking classes. “

Table 4 showed that the students had ( $M=4.62$   $SD=0.590$ ) on whether using educational speaking technology improves fluency. The result implies that the students had positive views towards using educational speaking technologies to develop their lexical resources. In the same manner, they also viewed ( $M=4.57$   $SD=0.598$ ) that using educational speaking technology improves coherence. They believed that educational speaking technologies develop students' lexical resource, ( $M=4.33$   $SD=0.577$ ). Likewise, the students had ( $M=4.48$   $SD=0.602$ ) which indicates that they viewed educational technology increases grammatical range. Similarly, the students perceived ( $M=4.33$   $SD=0.658$ ) that educational technology increases speaking performance in terms of accuracy. Lastly, the students viewed ( $M=4.33$   $SD=0.658$ ) that using educational speaking technology enhances pronunciation skills. Thus, the results exhibited that the students had viewed using educational speaking technologies was effective to enhance speaking performance.

The students also understood that the specific educational speaking technologies including FORVO, YouGlish, and OALD had significant roles to enhance their speaking performance.

Hence, Table 5 depicted that using FORVO helps ( $M=4.38$   $SD=0.669$ ) them to develop their speaking performance in general and pronunciation skills in particular through listening online to the native speakers' pronunciation. In the same manner, the students confirmed ( $M=4.33$   $SD=0.577$ ) that using YouGlish in speaking lessons serves them to enhance their speaking performance including pronunciation, intona-

tion, word usage, accuracy, fluency, and grammar. To end, the students' response ( $M=4.43$   $SD=0.598$ ) indicated that using Oxford Advanced Learners' Dictionary helps them to develop speaking skills. The results, therefore, implied that the students viewed using FORVO, YouGlish, and OALD had significant roles to develop speaking performance.

Among twelve of the interviewees, most of them, ten students reported that the AOLD helped them to practice pronunciation, learn grammar and accuracy, lexical resource while YouGlish and FORVO supported them to develop their fluency and coherence. When one of the interviewees illustrated this point, she said:

I have not ever been experienced in using YouGlish, FORVO and other educational technologies to improve my speaking skills. Of course, I have used English dictionaries, but they were hard copies and not prepared for advanced learners which are helpful for college students. For example, my previous dictionary had no CD to be installed on desktops. Now, I have experienced on how to use the speaking technologies. Even, I feel that I pass time with native speakers when I use YouGlish and FPRVO.

Another participant also replied:

I wish to go to English speaking countries to learn the language through immersion though I cannot get the chance. But now I can learn English here in my country via the technologies and improve my language to be native like. I want to pronounce English [words] like the native speakers because I want to seek for scholarship and learn my second degree abroad.

However, some of the interviewees, two of all had some concerns on the relevance of the technologies for they cannot understand the native speakers' speech due to lack of adequate background knowledge of speaking skills. When one of these two students forwarded:

We should study African and Ethiopian English to communicate with our local community, and serve it effectively. Why do we bother to be like native speakers using the pronunciation tools? Even the people in our village may not understand my speeches if I can pronounce words like what native speakers perform.

Nevertheless, most of the interviewees underlined that the educational technologies were helpful to learn speaking skills better, and they reported that the technologies will have significant roles in their future jobs since English is the language of the world. All in all, the findings inferred that the students had positive perceptions on using educational speaking technology because they were interested to use the technologies, the effectiveness of using the technologies, and viewed that the technologies had significant roles to enhance their speaking performance.



## 15 Discussions

This article examined effects of utilizing educational technologies to improve students' speaking performances, and it assessed what the students perceive about the technologies used in our article such as FORVO, YouGlish, and OALD (8th ed). The outcomes of this study are able to insight applying technology in education is ideal since it assists the learners but also the teachers to make education easy, clear, suitable, and interesting. Besides, the users of this technology have to build a positive view.

With regard to the first research question, which is focusing on effects of using educational technology speaking tools on EFL learners' Speaking performance, it has been found that the experimental group students have outperformed over the control group students in speaking performance it is because the descriptive statistics shows that experimental group ( $M=46.29$   $SD=2.452$ ), while the control group had ( $M=36.92$   $SD=2.141$  in the posttest. So, it can be understood that using speaking educational technology enhanced the students' speaking performance than delivering the conventional method of teaching speaking skills. This is supported by Khanh (2021), Omidvar & Bahadorfar (2014), and Sosas (2021). They argued that when the language learners are assisted with technology, they will have the new learning opportunities. The authors on their side, it is believed that specifically, for non-native speakers of English language, utilizing technology that includes videos, images, and pictures as well as the audios can help them get improved on their speaking performances. In addition, the Independent Samples T test of control and experimental group and the teacher log have showed that the students are able to surpass their speaking performances with the support of educational technology tools including what are noted above. The teacher log assured the students in the experimental group have enhanced their speaking performance in terms of fluency and coherence, lexical resource, grammatical range and accuracy, and pronunciation. For instance, as the teacher's log showed the students were not able to speak out fluently, accurately, and coherently before using the speaking technology tools. However, the teacher log confirmed that the students' speaking performance have been enhanced after the technology based speaking lessons given in the intervention. Similarly, the teacher log reported that the students' pronunciation skills had been improved while they practised the speaking technology tools that were given in the intervention.

On the whole, the findings gained through the tests and teacher log indicated that using educational speaking technologies enhanced the experimental group students' speaking performance in terms of fluency and coherence, lexical resource, grammatical range and accuracy, and pronunciation. In other terms, the educational speaking technology students used a variety vocabulary; they were fluent and coherent in their speech; they were grammatical and accurate while speaking, and their pronunciation was also by far better compared to their own prior experiences and the control group students.

Conversely, the control group students, in their post-intervention speaking tests, were not effective in vocabulary choice, not fluent and coherent, poor in lexical resource, ungrammatical and inaccurate, with wrong pronunciation of words. The control group students were ineffective because they did not use educational speaking

technologies in their speaking lessons. They were mainly dependent on the teacher and the printed handouts to develop their speaking performance. They did not get the chance to practise speaking skills using speaking educational technologies.

These inferences that the enhancements in the experimental group were attained as a result of using educational speaking technology tools that focused on fluency and coherence, lexical resource, grammatical range and accuracy, and pronunciation. Hence, in order to enhance their speaking performance, the experimental group students used the educational speaking technology tools. For instance, they used “YouGlish” to practise pronunciation, intonation, word usage, accuracy, fluency, and grammar. In addition, they also used “FORVO” to listen and learn how native speakers pronounce words and phrases.

Besides, the students also used Oxford Advanced Learners’ Dictionary (8th ed) to learn pronunciation skills, fluency and coherence, lexical resource, grammatical range and accuracy. Particularly, the dictionary helped students, first, to listen the native speakers’ pronunciation of words and phrases and, then, to listen one’s own pronunciation of words and phrases. This practise enabled the students to learn pronunciation and coherence. The dictionary also provides alternative dictions for a certain word or phrase with lots of synonyms and antonyms that enabled the students to develop their lexical resource. Apart from this, since the dictionary has various sentence structures constructed in a certain word or phrase, the students were benefited to increase their grammar and accuracy skills. This study, therefore, revealed that educational speaking technologies could be used to enhance students’ speaking performance since using the educational speaking technology tools enables them to practise fluency and coherence, lexical resource, grammatical range and accuracy, and pronunciation.

The second research question is intended to know that the student’s perception towards utilizing educational technology tools so as to improve their speaking performance as mentioned in the above. In relation with this, the result showed that the students have a positive perception about technology tools this is because each item under [students’ perceptions in educational speaking technology](#) section, as shown Tables 1 and 2, and 3, the mean values show that greater than 3. In sum, the results revealed that the students were interested on using educational speaking technology in their speaking lessons. Besides, the students had also positive views on the effectiveness of using educational speaking technology. In support of the questionnaire data, the results gained through the students’ semi-structured interview also confirmed that they had positive perceptions in utilizing educational speaking technologies like YouGlish, FORVO, and AOLD (8th edition). However, the current findings were not alike to the research findings discovered by Yousif & Abeer (2021). The study conducted by Yousif & Abeer (2021) showed that even though the students showed positive attitudes towards virtual classrooms, the majority of them disagreed on the effectiveness of the virtual classrooms in helping students recognize their oral mistakes. The students perceived that recognizing mistakes and getting feedbacks and also lack of face-to-face communication had a negative impact on their communication in virtual classrooms. These findings were comparable with most research findings conducted by previous researchers though they also disagree with some previous research findings.

## 16 Conclusions and implications

The present research has investigated the effects of using educational speaking technology tools on EFL students' speaking performance. The study shows that using educational speaking technology in speaking lessons enhanced students' speaking performance since the tools including FORVO, YouGlish, and OALD (8th ed) enabled students to practise fluency and coherence, lexical resource, grammatical range and accuracy, and pronunciation which are the core features of speaking abilities.

The result shows that the experimental group students' speeches were fluent and coherent, rich in lexical resources, grammatical and accurate, and smooth in terms of pronunciation when they have used educational speaking technologies as mentioned above in EFL speaking classes. In terms of these feature, the control group students, on the other hand, were ineffective to produce speeches. This was because the control group students have learnt speaking skills through teacher prepared printed handouts without using educational speaking technologies like YouGlish, FORVO, and Oxford Advanced Learners' Dictionary. Therefore, when students used the educational speaking technologies and sufficiently practised pronunciation, diction, sentence structure, and flow of ideas with the technologies they would enhance their speaking performance. Hence, using educational speaking technology is recommended as resources to enhance students' speaking performance.

The findings also show that the students had positive perceptions towards using educational speaking technology to develop their speaking performance. The students have perceived positively on using educational speaking technology because they were interested to use the technologies, and they viewed that the technologies have significant roles to enhance their speaking performance. Thus, it infers that it is a need to encourage using educational speaking technology to enables students in practicing the speaking skills based on the native speakers' speeches. Subsequently, EFL teachers need to use educational speaking technology in their speaking classes to enhance their students' speaking performance. Similarly, speaking course material designers should reconsider educational speaking technologies while designing speaking course teaching materials. In addition, EFL learners have to use educational speaking technologies to make effective speech which is understandable by both the native and non-native speakers. Finally, the number of educational speaking technologies (YouGlish, FORVO, and Oxford Advanced Learners Dictionary– 8th ed) addressed in this study were relatively small. In addition, the time taken for the intervention was also not adequate to incorporate and use more educational speaking technologies.

Nevertheless, it is not to mean that the findings of the current research are not comprehensive since at least three educational speaking technologies were being applied during the intervention. Similarly, it is not to mean that the intervention period was inadequate because the students have practised speaking skills with the aforementioned technologies for eight weeks. It is, therefore to mean that the findings of the study would have been more comprehensive if a greater number of educational technologies were integrated in the intervention, and more amount of time had been given to the intervention so that the students practised with the technologies. Consequently,

future studies should be conducted on the effects of using some other educational speaking technologies on students' speaking ability.

**Acknowledgements** N/A.

**Funding** This research did not receive any funding.

**Data Availability** the authors declared that the data supporting the findings of this study are available on request from the corresponding author. The data are not publicly available due to containing information that could compromise research participant privacy/consent.

**Competing interests** None.

## References

- Alghaber, J. (2019). Methods for teaching speaking skill at Tamar schools and their impacts on learners' oral competency. *English Review. Journal of English Education*, 7(2), 39–46. <https://doi.org/10.25134/erjee.v7i2.1732>
- Alhaisoni, E. (2016). EFL Teachers' and Students' Perceptions of Dictionary Use and Preferences. *International Journal of Linguistics. ISSN 1948–5425 2016*, 8(6)
- Alsuhaim, A. (2017). *Teaching pronunciation via Computer Technology: principles and best Practices*. Running head: CAPT INSTRUCTION. University of Wisconsin-River Falls.
- Aly, et al. (2013). Using a Multimedia-Based Program for Developing Student Teachers' EFL Speaking Fluency Skills. *Arab Republic of Egypt. Benha University*
- Assefa, T. (2017). Educational Technology Implementation in Ethiopia High Schools: Benefits and Challenges of the Instructional Plazma Tv. Handbook on Digital Learning for K-12 Schools. <https://doi.org/10.1007/978-3-319-33808-8-25>. (413–427).
- Atali, I., & Bergil, A. S. (2012). *The effect of pronunciation instruction on students' overall speaking skills*. Procedia-Social and Behavioural Sciences.SciVerse ScienceDirect, Elsevier.
- Bajorek, J. P. (2017). *Pronunciation Technology: Global Community and Innovative Tools in Forvo and NetProF Pronunciation Feedback*. <http://www.forvo.com/pronunciation-technology><https://www.forvo.com>
- Bahadorfar, M., & Omidvar, R. (2014). Technology in Teaching Speaking Skill. *Acme International Journal of Multidisciplinary Research Available at*<http://www.ajmr.net>. II (IV). ISSN: 2320–236X
- Briesmaster, M., & Molina, M. B. (2017). The Use of the 3/2/1 Technique to Foster Students' Speaking Fluency. Retrieved from: <https://digitalcommons.nl.edu/ie/vol9/iss2/8>. inquiry in education: 9 (2)
- British Council (2018). Language Trends: A survey Report on L Anguage Te Aching In Primary And Secondary School S In England By Teresa Tinsley And Neela Dolezal.
- Danie, J., et al. (2017). Student use and perception of technology enhanced learning in a mass lecture knowledge-rich domain first year undergraduate module. *Northumbria University Newcastle*. DOI <https://doi.org/10.1186/s41239-017-0078-6>
- Derakhshan, A., Khalili, A. N., & Beheshti, F. (2016). Developing EFL Learner's speaking ability, accuracy and fluency. *English Language and Literature Studies*, 6(2), 177. <https://doi.org/10.5539/ells.v6n2p177>
- Douglas, E. Q. (2018). Reviewing the IELTS speaking test in East Asia: theretical and practice-based insights. *Quaid Language Testing in Asia*, 8(2), <https://doi.org/10.1186/s40468-018-0056-5>
- Fajariyah, D. N. (2009). Improving Students' Speaking Proficiency Using Games. *A Classroom Action Research on the Eight Grade Students of SMP Negeri 2 Baki Sukoharjo 2008/2009 Academic Year*
- Fu, J. S., & Yang, S. H. (2019). Exploring how YouGlish facilitates EFL learners' speaking competence. *Educational Technology and Society*, 22(4).
- Green, T. (2005). Reaching Out to Families: Parental Participation Using Technology To Help English Language Students Develop Language Skills: A Home and School Connection. *Multicultural Education, Winter*, 56–59.
- Gunada, I. W. S. (2017). Using You Tube Video; An IT-based Media to Improve Students' Speaking Skill.

- Gunada, I. W. (2017). Using YouTube Video; An IT-based Media to Improve Students' Speaking Skill. ResearchGate, June, 1–10. <https://www.researchgate.net/publication/326082917>
- H. Douglas, B. (2018). Teaching\_by\_Principles\_Second(BookFi.org).pdf. In *Teaching by Principles An Interactive Approach to Language Pedagogy* (p. 491).
- Hong, B. T. M. (2006). Teaching speaking skills at a Vietnamese university and recommendations for using CMC. *Asian EFL Journal*, 14(2)
- Jonassen, D. H. (1996). *Computers in the classroom*. Englewood Cliffs, nj: Merrill.
- Khanh, C. G. (2021). The effect of ICT on Learners' speaking skills Development. *International Journal of TESOL & Education*, 1(1), 22–29.
- Lezaraton, A. (1996). Teaching oral skills. In M. Celce-Murcia (Ed.), *Teaching English as a second or foreign language* (pp. 103–115). Boston, MA: Heinle & Heinle.
- Luoma, S. (2004). *Assessing speaking*. Cambridge: Cambridge University Press.
- Marilyn, U., & Harcourt, P. (2019). *International Multi-Disciplinary Journal, Ethiopia ISSN 1994–9057 (Print) ISSN 2070-0083 (Online) https://dx.doi.org/10.4314/afrev.v13i3.12 Teacher 's Voice Quality and Teaching Effectiveness*, 13(55), 141–148
- Mairi, S. (2016). an analysis of speaking fluency level of the english department students of universitas negeri padang (unp). English Department Faculty of Languages and Arts of Universitas Negeri Padang in collaboration with Indonesian English Teachers Association (IETA). 10 (2), p161–171
- Masyithah, N. (2019). *Students 'Strategies in Improving Speaking Fluency*.
- Miller, J. (2006). An investigation into the effect of English learners' dictionaries on international students' acquisition of the English article system. *International Education Journal*, 7(4), 435–445.
- Nunan David (2015). *Teaching english to speakers others language an introduction*.
- OPEN (2020). Using Educational Technology Module 7 Downloadable Packet for the Online Professional English Network.
- Omidvar, R., & Bahadorfar, M. (2014). Technology in Teaching Speaking Skill. *International Journal of Multidisciplinary Research. II (IV) ISSN: 2320-236X*
- Richards, J. C., & Schmidt, R. (2002). *Longman dictionary of language teaching and applied linguistics*. Malaysia, KVP: Pearson Education Limited.
- Rost, M. (2002). New technologies in language education: Opportunities for professional growth. Retrieved June 28, 2006, from [http://www.longman.com/ae/multimedia/pdf/MikeRost\\_pdf](http://www.longman.com/ae/multimedia/pdf/MikeRost_pdf)
- Salaberry, R. (1999). Call in the year 2000: still developing the research agenda. *Language Learning and Technology*, 3(1), 104–107.
- Sevy-Biloon, J., & Chroman, T. (2019). Authentic use of technology to improve EFL communication and motivation through international language exchange video chat. *Teaching English with Technology*, 19(2), 44–58.
- Shikhar, K., et al. (2012). Building multilingual lexical resources using wordnets: Structure, design and implementation.
- Sherine, A., et al. (2020). Improving Second Language Speaking and Pronunciation Through Smartphones. <https://doi.org/10.3991/ijim.v14i11.13891>. 14 (11).
- Sosas, R. V. (2021). Technology in teaching speaking and its effects to students learning English. *Journal of Language and Linguistic Studies*, 17(2), 958–970. <https://doi.org/10.52462/jlls.66>
- Stockdale, D. (2009). Comparing Perception of Oral Fluency to Objective Measures in the EFL Classroom (Unpublished Thesis). Birmingham: University of Birmingham.
- Vecchio, A., & Guerrero, M. D. (1995). Handbook of English Language Proficiency.
- Wardhani, D. O. (2018). Problems Affecting EFL... Diajeng Octfifthnur Wardhani, FKIP UMP, 2018. Thesis.
- WBG.( (2021). Digital Technologies in Education. Retrived from <https://www.worldbank.org/en/topic/edutech>
- West, J. (2013). I Still Can't Speak English: Make Your Own Free Social Media English Course and Finally Speak English Comfortably 1st ed. Languages Out There Ltd ISBN 978-0-9561589-4-9.
- Yusif, A., & Abeer, M. (2021). EFL Students' Perceptions of the Effectiveness of Virtual Classrooms in Enhancing Communication Skills. *English Language Teaching*; Vol. 14, No. 11; 2021 ISSN 1916–4742 E-ISSN 1916–4750.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.

## Authors and Affiliations

**Mekuriaw Genanew Asratie<sup>1</sup> · Bantalem Derseh Wale<sup>1</sup> · Yibeltal Tadele Aylet<sup>1</sup>**

---

✉ Mekuriaw Genanew Asratie  
yohanismekuriaye29@gmail.com

Bantalem Derseh Wale  
bantalemd@gmail.com

Yibeltal Tadele Aylet  
yibeltaltadele@gmail.com

<sup>1</sup> Department of English Language and Literature, Injibara University, Injibara, Ethiopia