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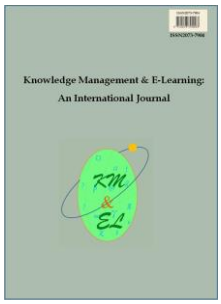

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The role of gender in student teachers' technology integration in teaching English speaking skills during the Covid-19 pandemic

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Abstract: While technology has been increasingly integrated in teaching practice, it remains unknow how gender plays a role in technology integration. This study aimed at investigating the difference between male and female student teachers in technology integration in teaching speaking skills during the sudden online teaching due to the COVID-19 pandemic. This study recruited 301 Indonesian student teachers who taught English as a foreign language and had completed online practice teaching during the pandemic. They completed two online questionnaires to measure their technology integration in teaching speaking skills. The results showed significant differences between male and female student teachers in the frequency of using technology tools but in the frequency of using technology to teach speaking skills for several purposes during this pandemic time. This study offers four implications to improve the student teachers' technology integration in online teaching modes.

Keywords: English as a foreign language (EFL); Gender; Online practice teaching; Student teachers; Technology integration

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1. Introduction

As a part of a teacher education program's (TEP) curriculum, a teaching practicum is a means to practice teaching effectively (Altalhab et al., 2021). It also provides opportunities for student teachers to develop professional identities by applying the knowledge and skills from TEP (Safari, 2020). Teaching practicum prepares the student teachers before their induction, a period of first-year teaching (Haim et al., 2020), after graduating from the TEP. Therefore, teaching practicum is crucial for transitioning from student teachers who lack the experience to professionals with the knowledge and skills.

The novel coronavirus, namely COVID-19, has drastically shifted education around the globe (Ockey, 2021; Rahman et al., 2021), including teaching English as a Foreign Language (EFL) (Yi & Jang, 2020). During pandemic, 107 countries decided to terminate their public schools' classroom instructions by March 2020 (Viner et al., 2020), and the number increased to 188 by early April 2020 (Basilaia & Kvavadze, 2020). These schools agreed to conduct online teaching as an alternative to provide the students with education at home (Daniel, 2020; Ockey, 2021) to limit the transmission to students (Gerber & Leong, 2021; Murphy, 2020).

However, this sudden online teaching is relatively new for students and teachers that are used to traditional classroom instructions. Even though the technology can be utilized for teaching, incompatibility might prevent using the method (Ocak & Karakus, 2022). Furthermore, speaking is considered the most difficult among the four language skills (Zhang, 2009) and presumably can affect sudden technology integration. Although the current student teachers belong to digital natives (Park & Son, 2020; Thompson, 2013) who are very acquainted with technology, research has shown gender differences in the integration (e.g., Almekhlafi et al., 2017; Zhou & Xu, 2007). Therefore, they may have different ways of teaching using technology. There is information on how to deal with sudden technology integration in teaching speaking skills, especially the methods related to online. This information can remarkably improve the literature on technology-enhanced language learning and assist the TEP for online teaching.

2. Literature review

2.1. EFL student teachers' practice teaching

Many TEP have integrated technology components into their curriculum to provide EFL student teachers with sufficient knowledge of teaching English. The integration is conducted by providing the student teachers with technology courses, content-specific teaching methods, and course experiences (Hofer & Grandgenett, 2012). The integration creates a balanced interplay between technology and pedagogy (Zyad, 2016). The student teachers will have sufficient knowledge and skills to teach English using technology. Some recent studies have shown that the knowledge of teaching influences attitude toward using technology and the integration in teaching (see Habibi et al., 2020; Hsu, 2016; Incik & Akay, 2017; Joo et al., 2018; Yildiz Durak, 2019). Therefore, current student teachers may likely infuse technology into their teaching practice.

Several EFL student teachers belong to digital natives (Park & Son, 2020; Thompson, 2013) and have attained greater interest in teaching English using technology. For instance, Baz et al. (2018) reported that 36 Turkish EFL student teachers implemented Instagram, Skype, Twitter, and PPT in their practice teaching. Furthermore, Park and Son (2020) conducted a longitudinal study on six respondents in Hong Kong and reported the implementation of various technology tools, such as digital audio editors, recording applications, online quiz applications, learning management systems, and video-sharing websites. Fathi and Ebadi (2020) studied six Iranian EFL student teachers' experiences of teaching English using technology. These teachers implemented technology after being given training on teaching English using different tools. Akayoglu et al. (2020) researched 113 Turkish student teachers and reported the implementation of technology tools, such as

social media tools, learning management tools, quiz maker platforms, material design presentation tools, and online storage applications.

However, some previous studies contradicted these findings since student teachers did not infuse technology into their practice teaching. Merç (2015) reported that the schools had insufficient technology tools to support practice teaching by recruiting 86 EFL student teachers in Turkey on their technology integration. Surprisingly, they did not implement technology since they were unfamiliar with the school technology. Baz et al. (2019) researched 22 Turkish EFL student teachers after being trained to use the VoiceThread application, a cloud application that allows creating, commenting, and sharing documents, presentations, images, audio files, and videos. Baz et al. reported that these student teachers did not intend to implement Voicethread because most schools lacked facilities.

The role of gender in teaching using technology remains unclear since this issue was not entirely treated. Previous studies on technology integration reported inconsistent findings. For example, males and females had no significant difference in attitude toward using technology (Islahi & Nasrin, 2019; Raman & Thannimalai, 2019). Zhou & Xu, 2007) reported that male teachers had more efficacy in using technology, while Almekhlafi et al., 2017 stated that females used technology more than males. Some have specifically studied male and female EFL teachers regarding technology integration in teaching. For instance, Rezaie and Sayadian (2015) conducted a study recruiting 60 Iranian EFL teachers. There was no significant difference between male and female teachers' perceptions of technology integration through ANOVA. Similar results were also reported by Hammou and Elfatihi (2019), which conducted a study on 80 Moroccan EFL teachers. An independent t-test was employed, and there was no significant difference in using technology. There is limited information concerning the contribution of gender and technology integration. Therefore, more studies are required to enhance the literature on male and female teachers' technology integration in teaching.

2.2. Emergency online English teaching during the COVID-19 pandemic

Since COVID-19 has dramatically impacted English language teaching (Yi & Jang, 2020), the emergency online method has been implemented. Some recent studies have reported how the sudden online English teaching was conducted during this pandemic. For example, Moorhouse and Beaumont (2020) were dissatisfied with the asynchronous format provided by a school in Hong Kong and created an online English course for teachers. Zoom was used as a video conferencing technology for live lessons. The English teacher employed several interesting technology tools during the live lessons, such as Mentimeter and Kahoot! for quizzes and games.

In another instance, Evans et al. (2020) employed Google Meet and Classroom to provide their students with synchronous mode. However, efforts were spent frequently explaining materials and activities through Google Meet. The students were instructed to photograph their assignments and upload the results to Google Classroom. Evans et al. confessed that their students could not interact with others, just like offline classroom instructions.

Other examples are Yi and Jang's (2020) and Ferdiansyah et al.'s (2020) studies, where two English teachers in a rural area of South Korea prepared pre-recorded video courses for asynchronous mode. Furthermore, the teachers collaborated to create pre-recorded video tutorials for their students. In another story from Indonesia, Ferdiansyah et

al. taught students using an online literature circle and employed WhatsApp as instruction. The students were instructed to conduct group work, and WhatsApp could be implemented to serve the teaching, discussion, and group work purposes even though some students encountered issues with an internet connection or mobile phone signal. The above studies indicated disruptions, a current term for innovations in education for technology tools that were not intended for teaching and learning purposes (Kusuma, 2022).

However, the studies have shown several important gaps, especially during the sudden online teaching due to the pandemic. Males and females may have different technology integration or preferences, which should be considered for TEP to facilitate the differences. The studies did not investigate how males and females differ in technology integration, especially in teaching speaking skills. There is limited information on student teachers' practice teaching due to the COVID-19 pandemic. Therefore, this study investigated the difference between male and female student teachers' technology integration in teaching speaking skills. A research question was therefore formulated to guide this study concerning the significant difference between male and female EFL student teachers in teaching speaking skills due to the COVID-19 pandemic.

3. Methods

3.1. Research design

In this study, the researcher employed a single case study approach to have a full understanding of the participants' varied experiences through detailed data collection (Creswell & Poth, 2018; Merriam & Tisdell, 2016; Stake, 1995). This study bounded male and female student teachers' technology integration in teaching speaking skills online during the COVID-19 pandemic as the unique case. Moreover, the researcher employed a convergent mixed methods design in which the researcher collected both quantitative and qualitative data, analyzed them separately, and compared them to confirm each other (Creswell & Creswell, 2018).

3.2. Participants

In the initial process, the researcher invited 400 EFL student teachers through email that described the present study, including the risks, benefits of joining this study, and the link to the survey. These student teachers were in average in their fourth years and joined in TEPs that offer Technological Pedagogical Content Knowledge, knowledge of teaching a subject matter using technology (Koehler & Mishra, 2005, 2009). A month later, only 301 EFL student teachers (203 females and 98 males) returned the questionnaires with a 75.25% return rate. Moreover, 18 of them including nine males and nine females were selected for the interviews (see Table 1) using the purposive sampling technique (Ary et al., 2019; Mertens, 2015). To be eligible for the interviews, the participants must meet the criteria, such as (1) the first generation of EFL student teachers who had conducted teaching practice during the COVID-19 pandemic, (2) conducted online practice teaching during the COVID-19 pandemic, and (3) had lesson plans used during online practice teaching during the COVID-19 pandemic. The participants in this study were called by pseudonyms as the purpose was to preserve their confidential information. The researcher assigned letters ST to represent student teacher, F to represent female, M to represent male, and numbers from 1-18.

Table 1
Demographic information of the participants for interviews

Participants	Age	Level of school
ST1M	23	Junior
ST2F	22	Senior
ST3F	22	Senior
ST4M	21	Junior
ST5M	21	Junior
ST6F	21	Junior
ST7M	22	Junior
ST8M	21	Junior
ST9F	22	Junior
ST10F	23	Senior
ST11M	21	Senior
ST12M	23	Senior
ST13F	22	Senior
ST14M	22	Senior
ST15F	22	Senior
ST16F	21	Senior
ST17F	22	Junior
ST18M	21	Junior

3.3. Research context

This study was conducted online in 2021 since the Indonesian government released the studying-from-home order that required education to be conducted remotely and mandated all Indonesians to reduce physical activities in public places. After obtaining approval, three public education universities were contacted to explain the research and request their consent to invite the student teachers. These universities had TEP that implemented the Technological Pedagogical Content Knowledge framework (TPACK) by providing their preservice teachers with pedagogy, content, and technology courses for four years of studies. Therefore, these universities' EFL preservice instructors were aware of teaching English using technology.

Indonesian public education universities were chosen to enable easy access. Moreover, the difference between the technology integration of male and female student teachers was investigated during online teaching due to the COVID-19 pandemic in 2021. Moreover, the role of gender in technology integration remains unclear. It is important to see how male and female student teachers conducted online teaching and dealt with some issues to enhance technology integration.

3.4. Instruments

The data were collected from various sources, such as questionnaires, online interviews with EFL student teachers, notes, and lesson plans as data triangulation (Farmer et al., 2006; Farquhar et al., 2020) to ensure the validity of the results (Farmer et al., 2006; Stake, 1995). The study developed two questionnaires on (1) the use of technology tools for teaching

speaking skills and (2) the frequency of the integration in teaching speaking skills questionnaires for specific purposes (see Appendix I and II). The questionnaires used Likert scales that ranged from 1-5, namely "*Never*", "*Rarely*", "*Sometimes*", "*Often*", and "*Very Often*", to measure the frequencies of the technology used by the student teachers. These questionnaires were developed by conducting a robust procedure, such as reviewing relevant literature, developing drafts, sending the questionnaires to Second Language Acquisition experts for evaluation, sending the questionnaires to a small group of student teachers for try-out, conducting content, and face validity through employing an inter-rater agreement model proposed by Gregory (2015), and conducting empirical validity using Pearson Product Moment analysis technique. Meanwhile, the items were valid where all coefficient values were above 0.01 and 0.05. Interview protocols were developed to collect data from the student teachers, which contained five questions (see Appendix III).

As explained above, the participants were not met in person due to the COVID-19 pandemic, and the questionnaires were sent online through the Qualtrics application. Furthermore, a WhatsApp group was created to organize online meetings with the 18 participants for interviews using Webex. The interviews were in Indonesian and took two sessions, which lasted for 40-50 minutes for two months, from July to August 2021. The interviews were transcribed into the Indonesian language for analysis purposes, and the transcriptions were shared with the participants to guarantee the data's correctness and reliability.

3.5. Data analysis methods

Regarding data analysis methods, the researcher employed an independent t-test, Mann-Whitney U test, and thematic analysis. Prior to conducting hypotheses testing, the researcher employed the SPSS program to perform prerequisite tests, such as normality and homogeneity. The results showed that the data about male and female student teachers' frequency of using technology in teaching were not normally distributed where males = $p < 0.001$ and females = $p < 0.001$. However, how technology tools were used in teaching speaking skills were normally distributed (males = $p > 0.69$; females = $p > 0.078$). Moreover, both data were homogenous ($p > 0.563$). Therefore, the Mann-Whitney U test and independent t-test were employed to test the hypotheses. Regarding analyzing the interview results, the transcriptions were carefully analyzed to generate potential coding. The researcher proceeded with the analysis by reading through all coding and determining potential themes by employing inductive thematic analysis in which the themes developed throughout the analysis (Braun & Clarke, 2006).

4. Findings

The first hypothesis testing was if male and female student teachers had any significant difference in the frequency of using technology tools in teaching speaking skills. The statistical findings in Table 2 showed that male student teachers ($N = 98$) have a slightly better mean rank = 157.51 and sum of ranks = 15436.00 compared to their female counterparts ($N = 203$), whose mean rank = 147.86 and sum of ranks = 30015.00. However, Mann-Whitney U test results in Table 3 showed that males and females had no significant difference in the frequency of using technology tools in teaching speaking skills as Mann-Whitney U = 9309.000 and Asymp. Sig. (2-tailed) = $p > 0.367$. Moreover, from the student

teachers' lesson plans and survey responses, the most frequent online technology tools implemented were Google Classroom, WhatsApp, YouTube, Zoom, and Google Forms.

Table 2
Males and females' mean rank in using technology to teach speaking skills

Gender	*N*	Mean Rank	Sum of Ranks
Male	98	157.51	15436.00
Female	203	147.86	30015.00

Table 3
Summary of methodology for study 1 Mann-Whitney U test results about the difference between males and females

Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
9309.000	30015.000	- .902	.367

Then, the next hypothesis testing was if males and females had any significant difference in the frequency of using technology to teach speaking skills. Based on the interview results, the majority of the male and female student teachers delivered their instructional materials via WhatsApp and YouTube. While also implementing Learning Management Systems, such as Google Classroom, students seldom checked their notifications from this platform but often viewed WhatsApp messages. Thus, student teachers implemented WhatsApp and YouTube more often instead of using Google Classroom to share the content. For instance, ST1M and ST2F used WhatsApp and YouTube:

> *"I employed WhatsApp to deliver the materials through sharing links of videos … and I used YouTube in my teaching to find videos to help my students learned speaking skills." [ST1M, Male]*

> *"Besides for sending instructions, I also shared materials to WhatsApp, sending pictures and YouTube videos." [ST2F, Female]*

However, Table 4 shows that male and female student teachers had significant differences in the frequencies of using technology to provide students with speaking materials where t (df = 299) = 2.566 and $p < 0.011$. Furthermore, the results in Table 4 asserted that male student teachers used technology more frequently than their female counterparts to provide the students with speaking materials (males' mean = 13.438; females' mean = 12.281).

Almost all male and female student teachers reported that they employed WhatsApp to do synchronous and asynchronous modes to teach speaking skills. Interestingly, they rarely employed video conference platforms because students had fewer internet data packages and internet connectivity issues, as most of their partner schools' locations were not supported by 4G internet speed, which meant that they had difficulties conducting video conference calls. Thus, most schools implemented policies that restricted the usage of video conferencing tools, such as Zoom or Google Meet, to ten to fifteen minutes of usage only. For instance, ST13F and ST14M used the voice message feature to teach speaking skills:

> *"When I taught speaking skills to my students using WhatsApp, I used voice message feature to explain the speaking materials (language expressions or*

dialogs). So, the students could notice how I pronounced them in English." [ST13F, Female]

"… we only used the voice message feature in WhatsApp to practice and shape the students' speaking." [ST14M, Male]

Table 4
Descriptive statistics and t-test results about the frequency of technology integration in teaching speaking skills

Purposes	Gender	Mean	SD	*t*	Sig. (2-tailed)
Using technology to Provide students with speaking materials	Male	13.438	3.963	2.566	.011*
	Female	12.281	3.517		
Using technology to teach speaking skills to students	Male	6.153	2.203	1.535	.126
	Female	5.773	1.911		
Using technology to test students' linguistic features	Male	11.969	3.690	2.512	.013*
	Female	10.906	3.313		
Using technology to facilitate students' speaking performance	Male	9.031	3.054	1.947	.052
	Female	8.340	2.798		
Using technology to facilitate students' discussions	Male	9.347	3.087	1.672	.096
	Female	8.695	3.211		
Using technology for speaking task submissions	Male	8.745	3.081	1.491	.137
	Female	8.168	3.180		

Note. * $p < .05$, $df = 299$, N (Male) = 98, N (Female) = 203

In addition, Table 4 shows that there was no significant difference between male and female student teachers in explaining the speaking materials using technology as t (df = 299) = 1.535 and $p > 0.126$. However, the means in Table 4 show that males employed technology more frequently for this purpose than their female counterparts (males' mean = 6.153; females' mean = 5.773).

Almost all male and female student teachers also reported using technology to test students' linguistic features, such as grammar, vocabulary, and language expressions. Surprisingly, most of them employed Google Forms to serve this purpose instead of using other quiz maker platforms, such as Kahoot! or Quizizz. For instance, ST4M and ST6F employed Google Forms regularly:

"When I did my online practice teaching, the first week would be giving materials, and the second week I would give them quizzes. Every two weeks I would give them quizzes through using Google Forms." [ST4M, Male]

"During my practice teaching, I employed Google Forms to give weekly quizzes, mid-term quiz, and final-term quiz." [ST6F, Female]

Then, Table 4 shows that males and females had a significant difference in using technology to test students' linguistic features as t (df = 299) = 2.512 and $p < 0.013$. Moreover, Table 4 shows that male student teachers employed technology more frequently than females (males' mean = 11.969; females' mean = 10.906).

The interview results also indicated that both males and females used technology to facilitate students' speaking performance. Most students were assigned to create videos

and requested that their clips be sent to the WhatsApp group or uploaded on YouTube. However, a few of them would just ask the students to record their voices using the voice message feature on WhatsApp. For example, ST1M and ST2F employed YouTube and WhatsApp:

> *"… I employed YouTube to ask my students to create clips talking about the procedure of cooking their favorite food at home. Then, they uploaded the videos on YouTube, and I would score them." [ST1M, Male]*

> *"There were several materials, and one of them was about opinion where I asked the students to create a project. Because I could not see them during this pandemic and did not know what their speaking levels were, I asked them to give their opinions about this online learning, and the clips had to be uploaded on YouTube and sent the links to the WhatsApp group." [ST2F, Female]*

The results in Table 4 show no significant difference between male and female student teachers in using technology to facilitate students' performance, although males had more frequent usage of technology seen from their means (males' mean = 9.031; females' mean = 8.340).

In their interviews, both male and female student teachers confessed that they also used technology to facilitate students' discussions. Somehow, they reported that they mainly used the voice messages feature in WhatsApp to facilitate students' discussions. For instance, ST3F and ST5M asked his students to record their voices:

> *"… then we would do discussion and speaking practices on WhatsApp group using voice message feature…."[ST3F, Female]*

> *"When it came to discussion activity, my students and I did the discussion on WhatsApp. When I taught expressing opinions, I asked my students to discuss through recording their voices using voice messages in WhatsApp." [ST5M, Male]*

The statistical results in Table 4 show that male and female student teachers had no significant difference in using technology to facilitate students' discussion as t (df = 299) = 1.672 and p > 0.096, although males showed more frequent usage than their female counterparts (males' mean = 9.347; females' mean = 8.695).

For the last purpose, using technology for speaking task submissions, both male and female student teachers employed various technology tools, such as WhatsApp, YouTube, or Google Forms. Interestingly, they rarely instructed the students to submit the tasks via Learning Management System. For instance, ST6F and ST8M often used WhatsApp as a means for the students to submit their tasks:

> *"I often used WhatsApp for speaking task submissions. After teaching the materials, I would give one week for the students to do the tasks related to the topic and submit them via WhatsApp." [ST6F, Female]*

> *"… because I taught all students using WhatsApp, so I also asked them to submit their assignments using WhatsApp." [ST8M, Male]*

Table 4 asserts that males and females had no significant difference in using technology for task submission purposes where t (df = 299) = 1.491 and p > 0.137, although the males had more frequent usage than their female counterparts (males' mean = 8.745; females' mean = 8.168).

5. Discussion

This study investigated the difference between male and female student teachers' technology integration in teaching speaking skills. Data from various resources had been collected and analyzed to achieve the above purposes.

There was a difference in how male and female student teachers integrated technology into teaching speaking skills during the sudden online teaching due to the COVID-19 pandemic. The student teachers used technology tools to teach speaking skills similarly. These findings completed Rezaie and Sayadian's (2015) studies that males and females had no different perceptions of technology integration in teaching. Since the student teachers attended English TEP that provided a TPACK framework, both genders obtained equal knowledge and experiences of teaching English with technology. Therefore, no significant difference was found in utilizing technology during their online practice teaching.

The findings showed that males used technology more frequently for several teaching goals. Hammou and Elfatihi's (2019) findings reported that males had slightly more frequency of technology usage than females in teaching. Even though sudden online teaching requires both genders to implement technology, it is projected that males will know more about technology than females (Islahi & Nasrin, 2019). Several previous studies (Almekhlafi et al., 2017; Mahdi & Al-Dera, 2013; Zhou & Xu, 2007) have substantiated the claim that males are more comfortable using technology in teaching, perceive themselves to have more expertise, and integrate technology into their instruction. This explains why male teachers made greater use of technology.

The interview findings and lesson plan analysis showed that male and female student teachers used non-educational technology resources to teach speaking. This finding indicates that technology disruption may be a viable option for conducting sudden online learning, as demonstrated by Ferdiansyah et al. (2020), who used WhatsApp to teach English in an Indonesian setting. Moreover, social media platforms provide better interactions (Wong et al., 2022). Student teachers used limited technological tools, which contradicts earlier findings from multiple research (Akayoglu et al., 2020; Baz et al., 2018; Park & Son, 2020). During this online teaching, tools that were efficient for teaching speaking skills were selected. For example, since students accessed this platform more regularly, WhatsApp was commonly used for task submissions.

This study has four implications for all English educators and teacher education programs on technology integration, particularly in online instruction. Theoretically, the data suggest that student teachers had no significant difference in using technology tools to teach speaking skills, and this study provided three implications. The first step is ensuring that TEP supplies TPACK to equally educate both genders on using technology for teaching. Both genders will not differ significantly in using technology in education with the same objective. Therefore, males and females should be treated equally when providing them with the knowledge of teaching using technology. Secondly, since student teachers use non-educational technology tools, TEP should provide course materials on disruptions in education. Females should also be encouraged even though males showed more frequency of technology disruptions. Some previous studies have reported the effectiveness of disrupting these tools to support the implementation of the current teaching methods in teaching speaking skills, such as flipped classrooms (Amiryousefi, 2019; Kusuma, 2020; Lin & Hwang, 2018) or e-portfolios (Cepik & Yastibas, 2013; Hsu, 2016; Sun & Yang, 2015). Therefore, the more student teachers are familiar with digital tools for

teaching, the more effectively and engagingly they can design learning and instruction utilizing appropriate technology resources. Another empirical implication is that TEP should identify the kind of technology tools, including disruption, that can be deployed effectively during online instruction. Tools that both male and female student teachers can use equally should also be determined, regardless of gender differences. TEP may equally prepare the next generation of student teachers to continue conducting online instruction during a COVID-19 pandemic by exposing them to various teaching scenarios.

6. Conclusion

In conclusion, this study discovered that male and female student teachers used technology tools to teach speaking skills. However, they differed in the regularity of using these tools to teach speaking skills, such as delivering materials and testing students' linguistic features. The findings contribute to the understanding that male and female student teachers may not implement numerous technology tools. This is because they focus on a few tools that effectively support online teaching, including disrupting technology.

However, this study has shortcomings and did not examine why male and female student teachers used relatively few technology tools. It did not investigate how student teachers disrupted common technology applications, such as social networking services and web 2.0 technology. Future studies should address these limitations to contribute to the knowledge concerning student teachers' technology integration, particularly in teaching speaking skills online.

Author Statement

The author declares that there is no conflict of interest.

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Appendix I

Demographic questions

1. How old are you?
2. What is your gender?
    a. Male
    b. Female
    c. Prefer not to answer
3. Where do you study (institution)?
4. Have you taken Microteaching courses?
    a. Yes. I have.
    b. No. I have not.
5. Have you completed you practice teaching program?
    a. Yes. I have.
    b. No. I have not.

Appendix II

Section #1

The following items ask how often do (or did) you use the following technology in your teaching, especially in teaching speaking skills.

No	Statements	Responses				
		Never	Rarely (Less than 3 times)	Sometimes (Around 5 times)	Often (More than 5 times)	Very Often (More than 7 times)
1	How often do (or did) you use the following offline technology tools/applications in your teaching? a. PowerPoint b. Word c. LCD projector d. PDF e. Videos f. Audios g. Laptop h. Tablet					
2	How often do (or did) you use the following Google Platforms in your teaching? a. Google Slides b. Google Drive c. Google Docs d. Google Sheets					
3	How often do (or did) you use the following Learning Management System platforms in your teaching? a. Schoology					

b. Edmodo
c. Google Classroom
d. Moodle

4 How often do (or did) you use the following social network services/instant messaging in your teaching?
a. WhatsApp
b. Telegram
c. Line
d. SMS
e. Facebook messenger
f. Email

5 How often do (or did) you use the following web 2.0 platforms in your teaching?
a. Facebook
b. Instagram
c. YouTube
d. Twitter
e. TikTok
f. Ted-Ed
g. Blogs
h. Flipgrid
i. Duolingo

6 How often do (or did) you use the following online quiz maker platforms in your teaching?
a. Google Form
b. Quizizz
c. Kahoot!

Section #2

The items below measure the frequency of your teaching with technology (online and offline). Please choose one of the responses to indicate your frequency of technology integration in teaching speaking skills!

No	Statements	Scales				
		Never	Rarely (Less than 3 times)	Sometimes (Around 5 times)	Often (More than 5 times)	Very Often (More than 7 times)
1	How often do (or did) you use offline technology for the following purposes:					
	a. to provide your students with speaking materials (e.g., language functions, vocabulary, tenses, dialogs, texts, etc.).					
	b. to teach speaking skills to your students.					

   c. to test your students' linguistic features (e.g., grammar practices, vocabulary practices, or language expression practices).
   d. to test your students' speaking performance.

2 How often do (or did) you use social network services for the following purposes:
   a. to provide your students with speaking materials (e.g., language functions, vocabulary, tenses, dialogs, texts, etc.).
   b. to teach speaking skills to your students.
   c. to test your students' linguistic features (e.g., grammar practices, vocabulary practices, or language expression practices).
   d. to test your students' speaking performance.
   e. to facilitate students' discussions.
   f. for speaking task submissions.

3 How often do (or did) you use Web 2.0 platforms for the following purposes:
   a. to provide your students with speaking materials (e.g., language functions, vocabulary, tenses, dialogs, texts, etc.).
   b. to facilitate students' discussions.
   c. for speaking task submissions.

4 How often do (or did) you use Learning Management System for the following purposes:
   a. to provide your students with speaking materials (e.g., language functions, vocabulary, tenses, dialogs, texts, etc.).
   b. to test your students' linguistic features (e.g., grammar practices, vocabulary practices, or language expression practices).
   c. to facilitate students' discussions.
   d. for speaking task submissions.

5 How often do (or did) you use online quiz maker platforms for the following purposes:
   a. to provide your students with linguistic features games (e.g., language functions games, vocabulary games, grammar games, etc.).

b. to test your students' linguistic features (e.g., grammar practices, vocabulary practices, or language expression practices).

Appendix III

Interview Questions

1. Please tell us what technology tools you used when teaching speaking during your teaching practice?
2. Why did you implement those technology tools?
3. Do you think the school facilities, your own and your students' facilities, including technology tools and internet access, inspired you to use the tools you mentioned?
4. In my notes, you used WhatsApp and YouTube more often when practicing online teaching in the past. For what purpose did you use WhatsApp? For what purpose did you use YouTube?
5. In my notes, you use Google form more often. What do you use Google Form for? And why do you use Google Form more often than other applications such as Quizizz and Kahoot?