Effects of Technology enhanced Task-based Language Teaching on Learners' Listening Comprehension and Speaking Performance

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Integrating Task-Based Language Teaching (TBLT) and learning technologies can be the potential framework in designing language instruction to enhance learners' listening comprehension and speaking performance. However, not many past studies have explored how technology enhanced TBLT can enhance both listening comprehension and speaking performance of ESP learners. Therefore, the purpose of this study is to investigate the effects of TBLT on ESP learners' listening comprehension and speaking performance using a quasi-experiment with non-equivalent (pretest and posttest) control-group design. Ninety-seven ESP learners majoring in a Nursing program participated in the study. Four instruments were used for data collection, namely a listening section of TOEFL test, an online presentation, role-play, and online group discussion. Findings showed that technology implementation enhanced TBLT significantly influenced students' listening comprehension. In a similar vein, ESP learners' speaking performance based on role-play also had considerable improvement. However, concerning ESP learners' online presentations and online group discussions, their speaking performance scores did not improve significantly after receiving this experimental treatment. These findings shed some light on students' involvement in attaining multifarious language inputs related to their listening comprehension due to the authentic and technological learning materials and media. In considering speaking performance enhancement, ESP students could benefit from merging the role-play in ESP instruction with technology enhanced TBLT.

Keywords: technology enhanced TBLT, CLT, ESP, listening comprehension, speaking performance

INTRODUCTION

Technological advancement characterized by widespread online learning and learning technologies becomes a significant trend to achieve language learning goals. This advancement has positively constructed the language pedagogical approaches such as computer-assisted language learning, mobile-assisted language learning, and online language course via learning management systems. These approaches have been considered effective since transferring materials, instructional processes, and learning assessments have dramatically become flexible, accessible, updated, and dynamic for diverse language learners (Anwar & Arifani, 2016). By incorporating technologies in language instruction, therefore, learners can learn language autonomously (Tananuraksakul, 2016), enhance their learning engagements (Mulyono, 2016), and maximize their learning opportunity (Kiliçkaya, Krajka & Latoch-Zielińska, 2014).

In language instruction pertaining to English for Specific Purposes (ESP), technologies like internet sources, live online meeting, and learning management system can be employed to gain a lot of language inputs for enhancing learners' receptive language skill from diverse online learning sources and also facilitate them to perform well their productive language skills (Alizadeh, 2018; Anwar & Arifani, 2016; Mulyadi, Wijayatiningsih, Budiastuti, Ifadah, & Aimah, 2020).

However, in Indonesian nursing context, the integration of learning technologies in ESP instruction meets some challenges such as ineffective class management, lecturers' reluctance to use technology, and difficulty in controlling students' access during the e-learning process (Mulyadi et al., 2020). Besides, ESP instruction has not been sufficient to provide learners with ample English communication practices. For instance, Indonesian nurses in Taiwan still encounter some challenges in providing effective nursing care because of English communication barrier with the patients (Lu, 2018). The communication barriers of limited English proficiency negatively influence professional nursing care, such as difficulties in understanding and assessing patients' requests, needs, and complaints (Ali & Watson, 2018).

Regarding these problems, ESP learners should receive ample opportunities to be active English language users (Irmawati, Basri, Rosniati, & Ashar, 2016) so that they will be ready to do their professional works globally without English communication barrier. Therefore, ESP educators need to design the learning activities that stimulate students' learning involvements (Arifani & Suryanti, 2019) to enjoy practicing their English for communicative language learning activities.

In this regard, communicative language teaching (CLT) should be implemented in ESP instruction to empower learners to actively use their learned language (Richards & Rodgers, 2014; Shariq, 2020). One of the popular teaching methods in CLT is task-based language teaching (TBLT). This TBLT has promoted learner-centered language instruction to improve ESP learners' communicative competence (Wu, Liao, & DeBacker, 2016) and boost their motivation in practicing their language (Tan, 2016; Aliasin, Saeedi, & Pineh, 2019). The implementation of this TBLT has been deemed an effective approach to boost ESP learners by underscoring meaningful activities and

performing tasks to enhance their communicative competencies in diverse contextual circumstances (Wu et al., 2016; Bao & Du, 2015). Moreover, this TBLT has been beneficial to enhance language students' learning motivation and involvement since they have embarked on the authentic and real-world communication tasks (Page & Mede, 2018; Wu et al., 2016; Ji & Pham, 2020; Widodo, 2017).

Considering the aforesaid research background, the integration of TBLT and online learning technologies has been assumed as a useful instructional framework that can gain many benefits and full potentials (Lai & Li, 2014; Ziegler, 2016). Seminal studies have posited that technology enhanced TBLT in terms of ESP courseware, which has yielded beneficial and interactive ways for the learners in EFL learning process (Tsai, 2015). Since TBLT enactment principles can be more successfully performed by educators who are open-minded about innovative learning (East & East, 2019), incorporating online learning technologies and TBLT can maximize the ESP learning goals.

Previous research found that integration between learning technologies and TBLT can engender the learners to be dauntless and encouraged to perform their English skills with their real-world communicative tasks (Eslami & Kung, 2016). In addition, this integration has been able to enrich multifarious and authentic materials to foster learners' motivation in completing their language tasks (Xue, 2020; Arslanyilmaz, 2012). To fruitfully orchestrate the technology enhanced TBLT in ESP context, the teachers need to create contextual and authentic tasks in multifarious EFL settings in distance learning contexts (Chen & Wright, 2017; Bryfonski & McKay, 2019). In this regard, the teachers and learners can negotiate about the doable and achievable tasks. Accordingly, the learners can build up enthusiastic engagement in accomplishing language performance tasks (Bygate, 2016).

The foci of recent studies in learning technologies integrated to TBLT have were on exploring vocabulary (Page & Mede, 2018), exploring EFL students' attitudes (Chen & Lin, 2018), reviewing articles of new trends (Ziegler, 2016), investigating challenges the implementation of this method (Iveson, 2015), and developing instructional framework (Nielson, Pinckney, & Gómez, 2017). Nevertheless, to date, little attention to experimental research on technology enhanced TBLT implementation that primarily explores EFL learners' oral language skills viewed from their listening comprehension and speaking performance. Whereas, speaking and listening skills are deemed imperative as interrelated skills in face-to-face interaction in real-life communication (Palmer, 2014). Both listening and speaking skills can encourage students to be active in conveying their ideas and feedback based on their oral language input (Nation & Newton, 2009). To this end, this paper evaluates the effectiveness of technology enhanced TBLT on ESP learners' listening comprehension and their speaking performance.

Task-Based Language Teaching (TBLT)

TBLT has been prevalent and influential language instruction. Some studies have highlighted that TBLT becomes a successful language pedagogy to emphasize how the

meaningful language learning activities with diverse real-life tasks to attain communicative outcomes (Khoram & Zhang, 2019; Richards & Rodgers, 2014; Ji & Pham, 2020; Ke, 2009). The implementation of this TBLT can help students enrich target language input with authentic tasks that can develop their language learning motivation (Aliasin et al., 2019; Page & Mede, 2018). To implement TBLT, prominent scholars have proposed the various models of pedagogical stages in implanting TBLT, such as Ellis (2009) (i.e., pre-task, main task, and post-task); pedagogical tasks and real-world target tasks (Nunan, 2004); and the pre-task phase, the task cycle, and the language focus (Willis, 1996). Notwithstanding their differences in TBLT pedagogical sequences, the goal of this TBLT should be primarily focused on enhancing learners' target language performances with meaningful tasks. In the present study, TBLT pedagogical stages from Nielson, Pinckney, & Gómez (2017) and Willis (1996) were adapted to develop Technology Enhanced TBLT.

The first stage is the pre-task phase. This phase is intended to actuate ESP learners' prior linguistic knowledge, such as English vocabulary they will employ during the task cycles. Afterward, the task cycle phase is conducted by inviting learners to do some language activities in individual, pairs, groups to intensify their listening and speaking practices in English. During this phase, ESP educators serve as the learning facilitator. After completing the tasks cycles, the final pedagogical stage is orchestrated by reporting tasks, analyzing the language forms, and practicing similar tasks. In reporting tasks, particular learners should be ready to present their works (completed tasks). Concurrently, ESP educators and their peers observe and identify issues and problems related to language forms toward learners' reports. Its observing results are discussed in detail in the classroom meeting to enhance learners' linguistic knowledge. As a result of the aforementioned activities, the learners are prompted to perform another language activity to deepen their language usage.

Technology Enhanced TBLT

Learning Technology and TBLT are considered the effectively innovative pedagogical framework in language instruction. Recent studies have highlighted that technology plays a pivotal role in pedagogically and theoretically orchestrating TBLT (Xue, 2020; K. T. C. Chen, 2019; Chen & Lin, 2018; Eslami & Kung, 2016; Jiang, 2017; Ziegler, 2016). The integration between technology and TBLT has influenced significantly on enhancing applied linguistic students' learning motivation and opportunity in practicing oral language skill (K. T. C. Chen, 2019). This integration can be manifested in the form of mobile-assisted tasks, as investigated by Chen & Lin (2018). Their study found that, based on EFL learners' perceptions, this technology-enhanced TBLT has beneficially increased fun English learning activities and reduced learners' anxiety to use their English with partners and teachers. In the same vein, Pellerin's (2014) study found that mobile devices have positively contributed to task construction in TBLT to encourage EFL learners in mastering language independently with meaningful and self-regulated language learning activities.

Aside from using mobile devices, a learning management system (LMS) is an essential part of implementing technology-enhanced TBLT. This LMS has become prevalent in

teaching EFL in various pedagogical formats such as online learning, blended instruction, and flipped classrooms (Calderon & Sood, 2020). The qualitative research has found that TBLT integrated into LMS has successfully raised EFL students' learning engagement and motivation (J. C. Chen & Brown, 2012). Furthermore, the application of online classrooms in TBLT can enable learners to foster their language accuracy in completing various tasks (Khoram & Zhang, 2019).

Moreover, to get more advantages of technology integration into TBLT, the learners' participation in attaining a lot of language input, production, and instant feedback should be built (Lai & Li, 2011). For instance, in implementing pre-tasks, the learners can be entrusted to opine the attainable and viable learning goals to complete the tasks (Harper & Widodo, 2020). To wit, in the present study, the technology advancement will be utilized and integrated into TBLT process as the practical learning multimedia to provide learners' self-monitoring in doing the tasks to achieve numerous language inputs to support their listening comprehension and speaking performance.

Research Questions

As mentioned earlier, there is little attention to the effectiveness of TBLT in the online classroom on both listening and speaking skills. Thus, this study attempts to contribute to the existing literature in filling in a gap in this research area. Therefore, the research questions of the present study are as follows.
1. Does technology-enhanced TBLT influence on ESP learners' listening comprehension?
2. To what extent does technology-enhanced TBLT have any impact on ESP learners' speaking performance?

METHOD

Participants

The participants were 97 ESP students as a sample of 150 students as a population. Their study discipline was the nursing program at Universitas Muhammadiyah Semarang, Central Java, Indonesia. The participants' ages ranged from 19 to 22. The distribution of participants concerning gender and groups is presented in Table 1. All of them were learning English as a foreign language with Indonesian as the first language, and they have little opportunity to practice their English outside the classroom.

Table 1
Gender and age of participants ($n = 97$)

Item	Experimental Group		Control Group	
	n	Percent *(%)*	*n*	Percent *(%)*
Gender				
Male	11	22	12	26
Female Total	39	78	35	74
Age (Years)				
19	3	6	7	15
20	30	60	26	55
21	17	34	8	16
22	0	0	2	4

Note: *n*: number of participants in groups; Percent *(%)*: percentage of participants in groups

Before participation in the present study, the participants in both groups had already taken general English courses as the prerequisite course before taking ESP class. To ascertain the homogeneity of variances, their English proficiency was tested by using a diagnostic TOEFL pretest from Longman Introductory Course for the TOEFL Test 2nd edition. Besides, three speaking activities (individual presentation, role-play, and group discussion) from the previous semester were recorded as the pre-speaking data. The Levene statistic results of this pretest showed that both groups were homogenous with P = 0.82. To wit, the learners' pretest scores between the two groups were equivalent before orchestrating the treatments.

Study Design and Instructional Context

The present study employed a quasi-experiment with a non-equivalent (pretest and posttest) control-group design. This research designed was chosen due to two selected intact classes from three classes because randomly assigning participants would interrupt the process of classroom learning (Creswell, 2014).

The teaching method implemented for the experimental group was the integration of task-based language teaching (TBLT) approach into online learning technologies, i.e., in the present study, we define it into technology enhanced TBLT. The instructional procedures of technology enhanced TBLT, as illustrated in Table 2, were adapted from Nielson, Pinckney, & Gómez (2017) and Willis (1996). Meanwhile, another class constituted the control group (n=47) was given the regular online teaching instruction without TBLT implementation such as lecturing, textbook exercises, and group discussion. Four themes that were taught during the study were meeting people, in and around the hospital, nurses' duty, and checking vital signs.

Table 2

The procedure of technology enhanced TBLT

		TASK Activities	Time
Pre-tasks	Introduction to topics and Tasks (15 minutes)	a) ESP teachers sent the link of detailed instructions on the day before classroom meetings via Group Whatsapps. b) They also share the learning materials' links such as reading text and video as model or learning input (they were uploaded in LMS).	A day before the classroom meeting
Task-cycles	Planing (15 minutes)	a) ESP teachers confirmed their listening and reading comprehension dealing with learning materials, as well as the unfamiliar vocabulary and word pronunciations. b) Teachers and students discussed the communicative tasks and alternative learning technologies for complementing them based on the previously decided topics on the pre-task stage.	Classroom Online Meeting 1, 3, & 5
	Task (7 days)	a) ESP learners did the communicative tasks individually, in pairs, or in small groups at their own home/ dwelling b) The learners were doing the tasks in a week as the outside classroom assignments. c) The tasks encompassed a) Meeting 1. online group discussion via ZOOM with the themes "meeting people and around the hospital." This speaking task was recorded by in ZOOM meeting; b) Meeting 3. Individual presentation mediated by screen and face recording in Microsoft PowerPoints 2016 or 2019 with the theme "nurses' duty" and	One week tasks

		c) Meeting 5. role-play in pairs with the theme "checking vital signs as one of the nursing duties." This activity was recorded by their cellphone camera. d) Their recorded tasks were uploaded on YouTube or Google Drive. e) They attached the links from YouTube or Google Drive to LMS f) ESP Teachers monitored learners' progress of completing the tasks and giving the encouragement/ needed help via WhatsApp group.	
Language Focus	Report (40 minutes)	ESP teachers showed the learners' recorded videos of their tasks via ZOOM screen sharing to all students	Online Classroom meeting 2, 4, & 6
	Analysis (15 minutes)	a) ESP teachers gave a reflection on their tasks (giving feedback) in oral and written texts during ZOOM session. b) They also accentuated the important linguistic features taken from learners' works c) They also invited learners' learning engagement to ask questions and comment on their friends' works.	
	Practice (15 minutes)	a) Following the results of analysis stages, teachers selected the most problems and prevalent issues of language, which is necessary to be extended. b) ESP learners were given alternative tasks for practicing more activities, drills, and examples to understand language problems and issues.	Online Classroom meeting 2, 4, & 6

Research Instruments

Four instruments as collecting data were administered in this study, i.e., a listening section of TOEFL test, an online presentation, role-play, and online group discussion. The listening section of TOEFL test adopted from Longman Introductory Course for the TOEFL Test 2nd edition was employed for assessing learners' listening comprehension. This listening test was administered due to the standardized listening test that was widely used in ESP context (Sakata, 2019; Dashtestani, 2015; Grgurović, 2014; Sheppard, Manalo, & Henning, 2018; Strother, 2005; Tsou & Chen, 2014; Grgurović, 2014; Abdulrahman, 2017). This test comprised three parts, i.e., 30 listening questions of short dialogue, eight listening questions of long conversations, and 12 listening questions of long talks. Meanwhile, individual presentations, online group discussion, and role-play were applied to assess learners' speaking performance. They are administered due to interrelated teaching and testing principles based on a classroom-based language assessment (Alberola Colomar, 2014). Accordingly, these speaking activities were applied to enhance students' engagement in meaningful language learning activities and promote their learning involvement in completing the tasks considered as their learning assessment (Gan, He, & Liu, 2019).

Data Analysis

The data of the present study were analyzed quantitatively. We used SPSS version 21.0 to analyze the listening test scores and the accumulated rubric scores of speaking assessments. Descriptive statistics, pair-sample tests, and independent sample tests were deployed to discover a difference in ESP learners' listening comprehension and speaking

performance scores. In particular, a pair-sample t-test was performed to analyze the pretest and posttest results of learners' listening comprehension.

Moreover, to evaluate learners' speaking performance, we used two assessment categories adapted from Alberola Colomar's (2014:19) study. The assessment criteria that were incorporated in this study were "analytical rating scale and sets of binary decisions)" (p.19). The detailed assessment criteria for three speaking tasks are depicted in Table 3.

Table 3
The assessment criteria of learners' speaking performance

Speaking Assessment Criteria			Assessment Category	Rating Score (based on Rubrics)	Learners' Speaking performance		
					Role-play	Group Discussion	Individual Presentation
Sets of binary decisions (Combining general criteria + additional particular criteria)	General Criteria (analytical rating criteria)		1. Accuracy	1 to 4	√	√	√
			2. Fluency and Pronunciation	1 to 4	√	√	√
			3. Content	1 to 4	√	√	√
			4. Interaction and Communication	1 to 4	√	√	
			5. Specific vocabulary	1 to 4	√	√	√
			6. Appropriate register	1 to 4	√	√	√
			7. Coherence and arguments	1 to 4	√	√	
	Additional particular rating criteria		8. Participations	1 to 4		√	
			9. Flexibility	1 to 4	√	√	
			10. Cooperation	1 to 4	√		
			11. Structure	1 to 5			√
			12. Visual Aids	1 to 4			√
			13. Body Language	1 to 2	√		√
Total Score (maximal score)					38	36	31

In the process of easements, besides the judges/ examiners put their rating score, they were also given space in every rubric to jot down their comments, suggestions, or explanation for reasoning their score decision. This activity was conducted and included as the post-task activities in technology enhanced TBLT so that students could get their speaking performance reflection and feedback. This feedback was given in the form of text messaging through LMS to create the diminution of their pressure, anxiety, and fears level (Tsai, 2015).

Research Procedure

Before implementing the treatments, all students in the experimental class or the control group were given the pre-listening test at the first online classroom meeting. The test was administered via online form. To ascertain the valid test-takers, the curtain rules were administered. First, the test was conducted through university e-learning in which the test takers must be registered in both classrooms. Second, test enrollment was

restricted with certain passwords, and the time limit was applied for 35 minutes for completion. Besides, only one attempt was allowed. During the pretest and posttest of listening comprehension, the participants were asked to open Zoom meeting via a link shared via WhatsApp. This rule was applied to monitor their presence and activities during the process of test complementation.

Subsequently, the technology enhanced TBLT and online regular language classroom instruction were carried out in 6 meetings (meeting 2 to meeting 7). During six sessions of the learning process, ESP learners were conducting pre-task activities such as listening to audios or videos and reading the texts. They completed three different speaking tasks during the task activities, i.e., individually online presentations, role-play, and online classroom discussions. These tasks were recorded to be assessed and analysed quantitatively based on the particular rubrics. After completing six meeting treatments, at the 8th meeting as the final step of the present study, the listening comprehension test was administered to all the students for both groups. The scores were calculated as the post-listening scores to be analyzed by three ESP lecturers.

FINDINGS

This part presents the empirical results concerning the impact of technology enhanced TBLT on ESP learners' listening comprehension and speaking performance in comparison to regular online language instruction. The results are reported and analyzed in the following sections.

Learners' Listening Comprehension

There was a degree of enhancement of ESP Learners' listening comprehension level for the experimental group with the different mean scores (39.76 and 44.06, respectively). The data are depicted in Table 4.

Table 4
The ESP learners' listening comprehension between the experimental and control groups

Descriptive Statistics					
	n	Minimum	Maximum	*M*	*SD*
Experimental Group					
Pre-Listening Score	50	32.00	57.00	39.76	6.13
Post Listening Score	50	31.00	59.00	44.06	7.41
Control Group					
Pre-Listening Score	47	32.00	49.00	38.25	4.59
Post Listening Score	47	30.00	54.00	40.12	6.19

Paired T-Test							
	M	*SD*	*SE*	95% *CI* of the Difference		*t*	*df* *P*
				Lower	Upper		
Exp. Group (Pre-Listening Score vs. Post Listening Score)	-4.30000	9.18795	1.29937	-6.91119	-1.68881	-3.309	49 .002
Control Group (pre-listening score vs. post listening score)	-1.87234	8.86767	1.29348	-4.47599	.73130	-1.448	46 .155

Afterward, the analysis results of the paired t-test (see Table 4) proved that there is a statistically significant difference between pretest scores and posttest scores within experimental group after receiving the treatments (P = 0.002). It can be deduced that technology enhanced TBLT can significantly improve learners' listening comprehension.

On the other hand, small increases in mean scores for pre-listening tests and post-listening tests in the control class occurred (38.25 and 40.12). To see the differences, Moreover, a pair-sample t-test was also conducted to see whether the different listening scores were significant or not. This test (Table 4) denotes that the comparison between pretest scores and posttest scores within the group was not statistically different with p = 0.155. It can be deduced that there was a minor improvement in ESP learners' listening comprehension in the control group.

Further, an independent t-test was administered to compare the pre- and post-listening scores between the experimental and control groups. P-value for pre-listening test was bigger than 0.05; Accordingly, there was no statistically significant difference in terms of EPS learners' listening comprehension between the two groups. To wit, all learners had similar listening comprehension level before receiving technology enhanced TBLT or online regular language instruction.

To identify the effectiveness of different treatments between experimental and control groups, the post-listening test scores of both groups were analyzed statistically using an independent t-test. This test results reveal that the students' listening scores in the experimental group outperformed the control group by reaching the significant value (P < 0.05). Hence, the implementation of technology enhanced TBLT positively affected the learners' listening comprehension.

ESP Learners' Speaking Performance

ESP learners' English speaking performance scores were analyzed based on their speaking tasks from three different activities: individual presentation, online discussion, and roleplay. Table 5 shows the descriptive scores and independent sample t-test between experimental and control groups for three speaking performance tasks. The mean scores of pre-speaking scores for individual online presentation, role-play, and online group discussion seem no significant between the two groups. To ascertain the significant value of differences, the independent sample t-test was administered.

Table 5
ESP learners' scores of speaking performance from three different tasks between experimental dan control groups

Descriptive Statistics					
	n	Minimum	Maximum	*M*	*SD*
Individually online presentation					
Experimental Group					
Pre-speaking score	50	20.00	31.00	24.36	2.27
Post-speaking score	50	17.00	32.00	24.10	3.82
Control Group					
Pre-speaking score	47	17.00	32.00	23.96	3.31
Post-speaking score	47	16.00	32.00	23.64	3.93
Role-Play					
Experimental Group					
Pre-speaking score	50	15.00	30.00	22.28	3.72
Post-speaking score	50	22.00	32.00	27.08	2.67
Control Group					
Pre-speaking score	47	14.00	31.00	22.06	3.94
Post-speaking score	47	19.00	33.00	25.74	3.29
Online Group Discussion					
Experimental Group					
Post-speaking score	50	21.00	31.00	24.86	2.48
Post-speaking score	50	23.00	32.00	26.50	2.77
Control Group					
Post-speaking score	47	21.00	30.00	24.87	2.64
Post-speaking score	47	23.00	31.00	26.45	2.54

Independent Samples Test (Pretest Scores of Speaking Performance between Experimental and Control Group)

		F	t	df	P
Online Presentation	Equal variances assumed	.494	.586	95	.484
Role-Play	Equal variances assumed	.077	2.199	81	.782
Online Classroom Discussion	Equal variances assumed	.001	.098	95	.981

Independent Samples Test (Postest Scores of Speaking Performance between Experimental and Control Group)

		F	t	df	P
Online Presentation	Equal variances assumed	.003	.586	95	.559
Role-Play	Equal variances assumed	1.042	2.199	95	.030
Online Classroom Discussion	Equal variances assumed	.222	.098	95	.922

The significance values are all greater than significant value (P > 0.05). It can be concluded that the participants' pre-speaking scores based on three different speaking tasks between the two groups are not significantly different before receiving the treatments.

Moreover, post-speaking scores for three different speaking performance activities are slightly different from pre-speaking scores. Their speaking scores from online group discussions between the groups were almost the same, with mean scores 26.50 and 26.45. Unlike the speaking score of online group discussion and individually online presentation, ESP learners' speaking scores based on their role-play were quite different. The mean score in the experimental group was better than in the control group.

Moreover, to gauge the effect of technology enhanced TBLT compared with regular online language instruction toward ESP learners' speaking ability comprising individually online presentation, role-play, and online classroom discussion, an independent test analysis was employed (Table 5).

Surprisingly, what stands out from this test results are that learners' speaking scores of role-plays in the experimental group had significant scores compared to the control group with P= 0.030. Thus, ESP learners experiencing technology enhanced TBLT outperformed the learners receiving regular language instruction in an online form. Conversely, there was no statistically significant difference between the experimental group and control group dealing with learners' speaking scores based on their online presentation and online classroom discussion with P > 0.05.

DISCUSSION

In accordance with the results, we discuss the current research findings in the following paragraphs.

The Effectiveness of Technology Enhanced TBLT on ESP Learners' Listening comprehension

Concerning the first research question, the significant influence on enhancing ESP learners' listening comprehension through the employment of technology enhanced TBLT was a noteworthy finding in the current study. This finding was evident that the integration of listening activities in the pre-tasks of TBLT has a positive effect on their comprehension of spoken language. This finding is congruent with previous studies that incorporating listening activities in the pre-learning tasks as made a significant contribution to students' advancement of foreign language input (Chou, 2017; Karimi et al., 2019). Moreover, the interview result from Bao & Du (2015) found that listening strategy in TBLT was an effective way to improve learners' foreign language mastery.

Furthermore, other potential reasons for this enhancement are integrating authentic listening materials to help ESP learners comprehend the pre-tasks' listening materials. This useful activity is pertinent to a previous study that in designing task-based language learning instruction, specific learning materials are required (Moore, 2018). Regarding the importance of this particular contexts of learning materials in TBLT, Jiang (2017)

asserted that real-life dan contextual tasks encouraged students to practice their English skills.

The Effectiveness of Technology Enhanced TBLT on ESP Learners' Speaking performance

To investigate the potential effect of orchestrating technology enhanced TBLT on ESP learners' oral English performance, as the second research question, three different speaking performance scores, including individually online presentation, role-play, and online group discussion, were assessed and gauged. The finding for these various speaking performance tasks was subsequently discussed.

ESP Learners' Speaking scores through an Individually Online Presentation

Regarding the aforementioned statistical results, the learners' speaking performance referring to individually online presentations was not significantly influenced after accomplishing technology enhanced TBLT for six meetings. This finding is contradictory to the previous study that speaking performance in the form of presentation has influenced significantly to EFL learners' speaking ability (Kazemi & Zarei, 2015). This result could be explained that some factors, such as learners' motivation and the learning facilities, need to be taken into account before ESP lecturers implement technology enhanced TBLT (Bao & Du, 2015). Consequently, to effectively apply online presentations in TBLT, the learners should be well motivated and capable of integrating technology and online platforms to accomplish this task.

ESP Learners' Speaking scores through a Role-Play

Role-play can be a fruitful technique to have ESP learners practice English speaking performance with appropriate task adjustments. In terms of role-play, as can be seen in previous results, this current study found that the implementation of technology enhanced TBLT significantly influences on ESP learners' speaking ability. The potential reason for this significant improvement is that the students in the experimental study were inspired after having the pre-task stage, such as watching the video as the learning model and having ample opportunity to express their English outside the classroom. Consequently, they could easily decide their topics of role-play and perform this task enthusiastically. This finding agrees with the previous study that role-plays integrated into technology enhanced TBLT using mobile phones has been beneficial for improving students' English proficiency in terms of vocabulary mastery (Kiernan & Aizawa, 2004). It also confirms the previous study that while conducting oral language tasks, students could actively participate in exploring and practicing their English (Bao & Du, 2015). The integration of role-play in TBLT was also reported as an effective learning technique and language classroom assessment for engaging students to successfully perform the task related to familiar topics and learning activities (Ke, 2009). This integration also helped students augment their speaking ability in the Iranian EFL context (Aliakbari & Jamalvandi, 2010). Therefore, a role-play should be taken into account in designing tasks on technology enhanced TBLT

ESP Learners' Speaking Scores through Online Group Discussion

Like the ESP learners' speaking performance results through an online presentation, technology enhanced TBLT has not influenced their scores of online group discussion. As presented in the result section, this speaking task has not experienced a statistical significance. This finding is inconsistent with the literature that TBLT implementation could motivate students to actively engage in classroom interaction (Bao & Du, 2015). The possible explanations for this insignificance effect might be the scarcity of live communication between ESP teachers and the learners make students reluctant to participate in the discussion of the learning topics actively. The teachers' monitoring should promote learners' engagement and participation in online group discussions (Calderon & Sood, 2020). This reason was also supported by Öztürk & Dinç (2014). They found when the tasks were conducted in online forms, the students tended not to be well motivated in the discussion process since they did not gain the chance to ask questions to the teacher directly. They were not able to obtain some immediate feedback as well as in face-to-face classroom interaction.

CONCLUSION

This study investigated the impact of technology enhanced TBLT on ESP learners' listening comprehension and speaking performance. The listening test results yielded a significant impact of technology enhanced TBLT on learners' listening comprehension since authentic listening materials were integrated into the pre-task phase. Moreover, the analysis results from three speaking performance tasks (i.e., individually online presentation, role-play, and online group discussion) are varied. ESP learners' speaking performance viewed from role-play assessment results had a significant effect from technology enhanced TBLT. This improvement was potentially stimulated with interesting pre-task phase like watching videos related to the learning topics and involving enthusiastically to express their English in such activity. However, dealing with the rest two kinds of speaking ability, ESP learners' achievements of individually online presentations and online group discussions have not experienced a significant enhancement after receiving technology-enhanced TBLT. In this case, the learners should be well motivated and monitored to perform online presentation tasks and increase their involvement in online group discussions.

Even though the implementation of technology enhanced TBLT has been comprehensively assessed by ESP educators based on two instruments, i.e., the results of listening test and speaking performance assessments, both research instruments could be addressed the limitation of the current study. To wit, future studies should also consider the learners' view based on their experiences in participating in ESP instruction with technology enhanced TBLT. Further research investigating the leaners perception using the research instruments such as a questionnaire and an interview can positively contribute to the practicality assessments of the similar learning approach.

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