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**INTEGRATING TASK AND GAME-BASED LEARNING
INTO AN ONLINE TOEFL PREPARATORY COURSE
DURING THE COVID-19 OUTBREAK AT TWO
INDONESIAN HIGHER EDUCATION INSTITUTIONS**

¹Damar Isti Pratiwi & ²Budi Waluyo

¹Politeknik Perkeretaapian Indonesia Madiun, Indonesia

²School of Languages and General Education,
Walailak University, Thailand

²*Corresponding author: budi.business.waluyo@gmail.com*

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ABSTRACT

Purpose – This study examined the integration of task and game-based learning into an online Test of English as a Foreign Language (TOEFL) preparatory course taught at two Indonesian higher education institutions (HEI) over a period of 20 online class meetings totaling 40 class hours.

Methodology – Using a single-case experimental design, it engaged undergraduate students enrolled in a TOEFL preparatory course in March 2021 at Politeknik Perkeretaapian Indonesia Madiun and Universitas Muhadi Setiabudi, Indonesia. The study used multiple t-tests and one-way ANOVA with *Cohen's d* to determine the degree

of impact on students' total outcome on pretest and post-test, as well as their scores on particular skills.

Findings – Multiple paired-sample t-tests revealed significant improvement in students' overall scores ($t(95) = 15.35, p < .001$) and in specific-skills scores for Listening Comprehension ($t(95) = 10.32, p < .001$), Structure and Written Expression ($t(95) = 5.90, p < .001$), and Reading Comprehension ($t(95) = 5.63, p < .001$). Independent t-tests and one-way ANOVA revealed significant variations in students' overall and individual skills ratings in study programs. However, the percentage of students who achieved the required TOEFL scores for admission to both institutions was significantly different.

Significance – The findings have major implications for both the lecturers at the two institutions and the designers of TOEFL preparatory programs. This study sheds light on an online TOEFL preparatory course that teaches students through task- and game-based learning. To run this program successfully, teachers' creativity in generating materials (tasks) and incorporating digital technologies is essential.

Keywords: English proficiency, game-based learning, listening comprehension, reading comprehension, task-based learning, TOEFL.

INTRODUCTION

Background of the Study

In this 4.0 era of rapid globalization, the world has changed dramatically and has become more connected in many ways, including finding work. English language competence has become a need for many stakeholders when applying for positions since it relates to an individual's capacity to communicate effectively in English (Renandya et al., 2018). To keep up with the demands of the job market, institutions in Indonesia have made an English language competency certificate, a graduation requirement. There is a number of language competency tests available, including Test of English as Foreign Language (TOEFL), Test of English for International Communication (TOEIC), International English Language Testing System (IELTS), and Pearson Test of English (PTE). TOEFL is a paper-based language competency test that is frequently administered

and widely considered as the primary choice. Although TOEFL on paper was abolished in 2017, it remains a viable option for assessing English language skills at university level (Educational Testing Service [ETS], 2017). It is currently referred to as TOEFL Institutional Testing Program (ITP). However, many students struggle with TOEFL ITP questions due to their low level English language skills, lack of preparation, and enthusiasm (Halim & Ardiningtyas, 2018). Additionally, they encounter difficulties as a result of their lack of vocabulary skills, weariness, and time constraints (Akmal et al., 2020). These issues have resulted in low TOEFL scores, which are insufficient to meet university and stakeholder requirements- the minimum TOEFL score is 450–480. Thus, a TOEFL preparatory course is required to assist students in taking TOEFL to achieve the required score as a prerequisite for university graduation, as well as to qualify for jobs (Manan et al., 2020).

Concerns regarding undergraduate students' poor TOEFL test scores have been significantly heightened by empirical studies which indicated that around 5–15 percent of all participating students at colleges normally attained the minimum score of 450 (Silviyanti et al., 2020; Yoestara & Putri, 2019). In a study conducted at a prestigious university in Indonesia, it was discovered that when the minimum required score was set at 500, 98 percent of the undergraduate students failed (Aziz, 2016). On the other hand, according to ETS's TOEFL score performance descriptors (Educational Testing Service, 2021), scores between 337 and 459 are still deemed to be at the level of basic users of English, or A1 in the Common European Framework of Reference for Languages (CEFR). 460–542 is the threshold level for independent English users or B1 in the CEFR. These findings show that undergraduate students in Indonesia have struggled to attain the level of basic users of English (A2) and that almost 90 percent of them would likely fail to achieve the beginner level of independent users of English (B1). Meanwhile, university graduates should ideally be at the B2 level - independent users of English (Vantage) with scores between 543 and 626 to be considered proficient at the international level.

Not only has it become a requirement for graduation, but it has also been included in employment applications in both the public and private sectors. This means that even though some universities do not require candidates to have a minimum TOEFL score, students with poor TOEFL scores will nonetheless suffer consequences. Indeed, a

recent study (Azhari et al., 2020) showed that while undergraduate students understand the value of a high TOEFL score for academic and professional success, they struggle to reach the minimum level of 450. Akmal et al. (2020) identified several underlying issues that contribute to students' poor TOEFL performance, including lack of practice, lack of vocabulary, poor time management, grammar incompetence, and low self-confidence. Additionally, the majority of undergraduate students lack a strong sense of self-efficacy regarding their English proficiency in the TOEFL test (Yoestara & Putri, 2019). The TOEFL test appears to have exacerbated students' concerns and anxiety in Indonesia. Students may become demotivated, thereby creating an unpleasant learning environment.

Apart from the previously mentioned concerns, it has been established that TOEFL classes have always been dominated by "teachers teaching in class" and "students working much of the time during the question exercises" methods, which render the classes uninteresting and less enjoyable (Wang, 2019). While the primary objective of TOEFL programs is frequently to increase students' scores, it is critical to emphasize that the classes are primarily designed to assist students in improving their English proficiency levels. At this point, critical aspects such as enjoyment, anxiety, and motivation should not be overlooked, as they have been shown to be critical in determining the success of student learning (Dewaele & Ergün, 2020). According to a survey conducted by ETS among TOEFL users in Japan, Mexico, and Indonesia, the TOEFL test is widely regarded as a useful indicator of English proficiency, but the stakes are high in both academic and professional contexts (Golubovich et al., 2018); students may have to delay graduation or may be unable to find work if they do not achieve the minimum target score (Aziz, 2016). Under these conditions, the pressure on students studying for TOEFL are unquestionably great, which may impact students' anxiety. Failure in the learning process can affect students' motivation, and boring teaching methods can make learning unpleasant, ultimately resulting in situations where students do not achieve the goal score.

Context of the Study

The study was carried out at two Indonesian institutions: Politeknik Perkeretaapian Indonesia Madiun and Universitas Muhadi Setiabudi. Politeknik Perkeretaapian Indonesia cooperated with Universitas Muhadi Setiabudi in conducting a TOEFL preparatory course in

2021. Both institutions implemented the same teaching approach, i.e., Task-Based Learning, and utilized the same book, English Intensive Program (EIP) (Ubaedillah et al., 2020). Task-Based Learning was chosen because this approach fostered process-focused syllabi and called for communicative tasks to enhance learners' real language use (Hismanoglu & Hismanoglu, 2011). Furthermore, it also allows for various language activities, which leads to discussions on selecting meaningful and appropriate tasks to facilitate the development of learners' language competencies (Waluyo, 2019). The selected tasks should be based on contextual factors, learners' interests, and needs to facilitate learners' involvement and improve their motivation (Sato, 2020). By focusing on a TOEFL designed syllabus to increase students' language proficiency, this TOEFL preparatory course is expected to help students achieve their scores.

Since March 2020, all classes must be offered entirely online. As a result, English language courses must be conducted online using a variety of web platforms, ranging from a learning management system to supplementary resources (Pratiwi & Ubaedillah, 2021). Both Politeknik Perkeretaapian Indonesia Madiun and Universitas Muhadi Setiabudi have agreed to use Zoom Meeting and a variety of game-based learning student response system applications, which include *Quizizz*, *Kahoot*, *Socrative*, and *Google Forms*, to facilitate the teaching and learning process for the TOEFL preparatory course. These platforms have been shown to be effective in delivering media that promotes a positive learning environment and boosts student achievement (Boonmoh et al., 2021; Pratiwi et al., 2021).

Based on the background issues mentioned, the present study has developed an instructional design for a TOEFL preparatory course that involves task- and game-based learning in an online learning environment due to the COVID-19 outbreak. It specifically aims to examine quantitatively how the incorporation of task- and game-based learning affect students' learning outcomes in terms of their overall and specific-skills TOEFL scores. The following research questions were addressed:

1. How do students' learning outcomes in listening comprehension, structure and written expression, and reading comprehension differ before and after learning the TOEFL Preparatory Course using task-based learning and digital technologies during the COVID-19 outbreak among selected students in two institutions in Indonesia?

2. Are students' learning outcomes statistically different across study programs?
3. How have students improved after taking the course?

LITERATURE REVIEW

Digital Technologies in English Language Teaching: Conceptual Framework and Research

Globally, technology is becoming more integrated into education and is having an increasing impact on the design and delivery of English language programs (Richards, 2015). Due to the Covid-19 pandemic, the use of technology in school is no longer optional; it is a required component of today's education, particularly during the online teaching and learning process (Sailin & Mahmor, 2018). Thus, teachers must be technologically educated to make effective use of the resources' technology. This word is also used interchangeably with digital literacy, implying that teachers must be competent in utilizing information and communication technologies (ICTs) such as computers, mobile phones, the internet, and its applications (Gruszczynska et al., 2013).

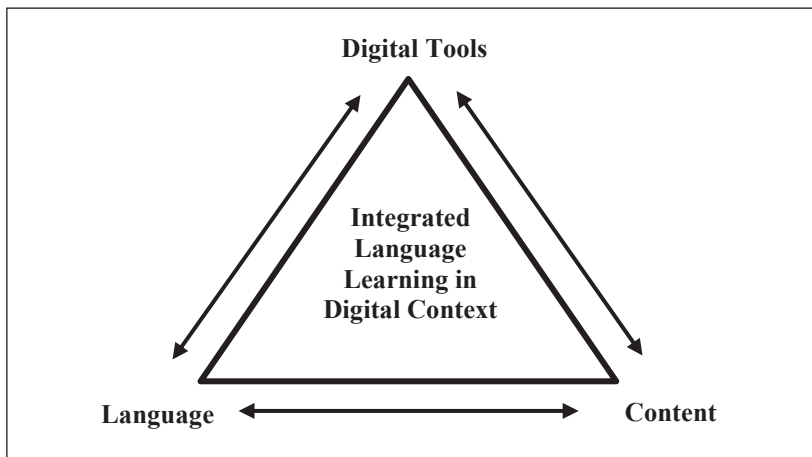
Casañ-Pitarch and Candel-Mora (2021) developed an integrated language learning model in a digital context that could be advantageous for building target skills. As illustrated in Figure 1, digital tools, language, and content are all interconnected. This means that individuals with a high level of digital literacy in language learning should be capable of utilizing a variety of digital tools and applying them in the field to generate appropriate content and communication. In these instances, teachers must analyse and assess pertinent information related to classroom issues for students to effectively use digital technologies to support their communication abilities.

Teachers indicated that the use of technology had an important impact on students' second or foreign language teaching (Abbasova & Mammadova, 2019). The study conducted in Azerbaijan about the role of digital technology in English language teaching revealed some advantages of using ICT in English language classrooms. From the students' perspectives, this approach motivated students to learn English, developed students' communication competence, and

provided opportunities for learning English outside the classroom. This approach benefited teachers by improving teaching efficiency, creating a conducive teaching environment, and enhancing interaction between teachers and students (Leong et al., 2018). However, there was an important note in that study that stated that technology should not be overused in the classroom to enable language learners to make full use of their overall language skills.

Figure 1

Integrated Language Learning in the Digital Context Model



Another study conducted at a Japanese institution indicated that technology could increase self-directed learning and student involvement (Caldwell, 2020). However, there are obstacles preventing ICT implementation from reaching its full potential. Thus, training teachers and students in the practical application of ICT is crucial to ensuring that both sides become engaged in the teaching and learning process, allowing students to be more autonomous and motivated to learn a language. This also occurred in an English-language school in Rwanda, where technology used to promote language competency had little direct effect until teachers provided advice and assistance to the students (Uwizeyimana, 2018).

Comprehensive integration of ICT into language study has been shown to benefit students' achievement (Waluyo, 2020). Because the primary objective of the TOEFL preparatory course is to assist

students in achieving their target score. Therefore, this strategy seemed suitable. In the midst of the COVID-19 epidemic, online teaching and learning processes that incorporate digital technology have received positive feedback and are associated with classroom activity selection (Bailey & Lee, 2020). Associating digital technologies with the target language and subject benefits students while also helping teachers in refining their instructional strategies in the language classroom (Khoshnevisan, 2019).

While difficulties and impediments may occur during online learning, teachers must establish online learning contingency plans in advance by assessing class features and student needs (Mardiana, 2020). Several obstacles have been highlighted during the teaching and learning process of incorporating ICT, including integrating technology for instructional purposes, acclimating learners to the medium, time and technological limitations (Bahari & Salimi, 2019; Fathali et al., 2020). Additionally, several possible problems may arise, such as privacy and copyright concerns, varied degrees of students' digital literacy, communication access, and technological restrictions (Ivone et al., 2020; Ubaedillah & Pratiwi, 2021).

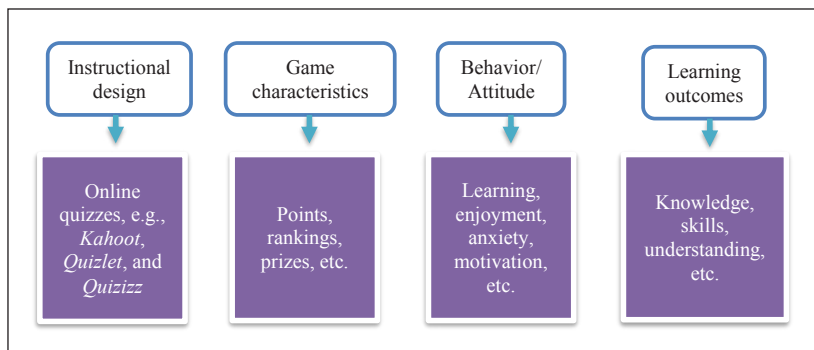
Game-Based Learning

Game-based or gamified learning can be defined as a framework in which educators use components of video games in a specific learning context to enhance students' learning experiences and engagement (Deterding et al., 2011). The terms "gamification" are used interchangeably. Gamification is being pursued with the goal of capitalizing on students' interest in video games as a form of entertainment. According to Karagiorgas and Niemann (2017, p.500), "gamification aims to integrate the best elements of video games, such as achievements, badges, and so on, to education." It is merely a method of utilizing gaming features for educational purposes, with no inherent entertainment value (de Byl, 2013). Learning a second language requires time, which for some students may be extended. Throughout the learning process, students may encounter ups and downs that could influence their learning outcomes. By gamifying students' foreign language learning, it is hoped that students will have the same level of excitement and engagement with learning materials throughout the study period as they do with video games.

The theory of gamified learning encompasses four major components in its implementation: 1) instructional design, 2) game characteristics, 3) behavior or attitude, and 4) learning outcomes (Landers & Landers, 2014). The term “instructional content” refers to the procedures used by teachers to instruct and enhance student learning (Reigeluth, 1983). Online quizzes such as *Kahoot!*, *Quizlet*, and *Quizizz* are employed in this situation due to their simplicity and positive impact on student learning enjoyment, but other online programs can also be used depending on the learning objectives. Thus, instructional content typically dictates the gamification apps chosen, which then require teachers to decide which game characteristics to incorporate into student learning; for example, whether to allow students to earn points for correct answers, whether to display student rankings and so on (Bedwell et al., 2012). When students engage in gamified learning, their behavior is impacted which can include the enjoyment of learning, anxiety, and motivation. The entire procedure will determine whether the desired learning results are attained. The process of developing gamified learning is shown in Figure 2.

Figure 2

An Illustration of the Development of Gamified Learning



Task-Based Learning and Digital Technologies/Game-Based Learning

Task-Based Learning (TBL) is a pedagogical approach to language learning that emphasizes the use of activities as the primary pedagogical tool (Hismanoglu & Hismanoglu, 2011). It enables students to practice their target language abilities while being coached

by the teacher through assigned tasks (Celik, 2017). Completing tasks in the classroom establishes an environment in which students can organically engage in activities. This is a learner-centered method because tasks are tailored to the learners' needs and enables them to complete tasks in the target language. The term "task" refers to distinct sorts of classroom activities that place a premium on meaning (Sánchez, 2004). TBL tasks enable teachers in the English as a Foreign Language (EFL) context to enhance the development of learners' skills by fostering an interactive group learning setting with increased exposure to target language usage (Xiongyong & Samuel, 2011). Nonetheless, teachers frequently become confused about what defines a task and what are regarded fundamental parts when implementing TBL (Waluyo, 2019). Hismanoglu and Hismanoglu (2011) recognized several additional TBL issues, including the requirement for resources beyond the textbook, the teachers' originality and dynamism in developing the activities, and the task's suitability in the target language. These several obstacles can be overcome by incorporating technology into the teaching and learning processes to improve the quality of TBL and increase students' involvement in second/foreign language learning (Chen & Lin, 2018).

Several empirical studies have confirmed the importance of technology in the TBL environment. Chen and Lin (2018) investigated the perspectives of freshmen English class at a public university in northern Taiwan on technology-mediated TBL. The findings indicated that technology-mediated TBL may provide opportunities for English learners to develop their English and digital literacy skills while engaging them in real-world language use and tasks. It was strongly encouraged for teachers to design a variety of tasks to cater to different learners' needs and preferences, in addition to providing students with digital skills training so that technological tools could be effectively and efficiently used during task completion to minimize the amount of time required. Nhu et al. (2014) conducted a survey and observed 20 English instructors from four different schools in Vietnam to ascertain their attitudes toward the usage of ICT in the classroom. The findings indicated that ICT had an unquestionable role in assisting language learners in completing their work (via images and videos), which relaxed them, increased discussion possibilities, encouraged them to express themselves, and resulted in improved learning outcomes. However, the study identified several obstacles,

including a lack of ICT competencies among teachers and students, lack of ICT infrastructure and technical support, and overcrowded classes. Thus, when completing activities involving ICT integration, each component of the system should be carefully considered to maximize the use of ICT in the process of teaching and learning English.

METHODOLOGY

Research Design

The current study employed a single case experimental design to monitor intervention with experimental groups (Cohen et al., 2017). Comparing results within experimental group subjects (Smith, 2012) allowed for an examination of participant outcomes, and determining whether the interventions administered were effective (Plavnick & Ferreri, 2013). The research design was chosen to enable the study's purpose, which was to assess the integration of task- and game-based learning into a TOEFL preparatory course delivered online during the post COVID-19 epidemic. It quantified the impact of task- and game-based learning on students' learning outcomes as measured by their overall and specific-skills TOEFL scores.

Participants

This study used a purposive sampling method to recruit participants, which is often used in experimental research designs. Purposive sampling accentuates the selection of research participants based on specific questions and objectives of the study, as well as available information on the study's participants (Tashakkori & Creswell, 2007). The inclusion criteria that represented the major goal of this study were selected using the purposive sampling method. The goal of this study was to look at how task- and game-based learning were integrated into an online TOEFL preparatory course delivered at two Indonesian higher education institutions over the duration of twenty online class meetings totaling 40 class hours. As a result, three criteria were developed: 1) participants must be undergraduate students studying at the two targeted institutions in Indonesia; 2) participants must be enrolled in the online TOEFL preparatory course during the

COVID-19 outbreak; and 3) participants must understand the study's objectives and be willing to participate.

After conducting the purposive sampling method, this study engaged undergraduate students enrolled in the TOEFL preparatory course in March 2021 at Politeknik Perkeretaapian Indonesia Madiun ($N = 48$) and Universitas Muhadi Setiabudi ($N = 48$). There was a total of 96 participants. The participants were between the ages of 21 and 23. They all took a two-semester general English course during their first year of university and did not study any English topics in their second year. The participants had spent 12 years in school studying English as a foreign language. Their English proficiency levels were between A1 and B1 according to the CEFR. The participants used English in academic settings most of the time but relatively little outside the classroom.

Task Design, Game-Based Apps, and Implementation

What makes a task and what are deemed fundamental aspects frequently confound teachers when task-based learning is implemented. Thus, the current study specifically referred to Willis (1996), who defines 'task' as a goal-oriented activity in which learners utilize all the target language's resources to solve a problem, play a game, complete a puzzle, communicate, and compare their experiences. At this point, the chosen tasks must facilitate learners' communication in the target language through interaction, incorporate authentic texts into the learning situation, recognize the critical contribution of the learner's own personal experiences to classroom learning, and, most importantly, establish a link between inside classroom language learning and outside classroom language use (Nunan, 1991). Nonetheless, because the current study focused on a TOEFL preparatory course, the task design prioritized learner training in three TOEFL skills areas: Listening Comprehension, Structure and Written Expression, and Reading Comprehension. The learners were expected to complete TOEFL exercises using game-based applications such as *Kahoot!* and *Quizizz*, and other online tools such as *Socrative* and *Google Forms*. Each application was used to train learners in a specific ability; for example, *Quizizz* was used to train learners in listening comprehension, *Kahoot!* was used to train learners in structure and written expression, etc., as shown in Figure 3-5.

Figure 3

Samples from Quizizz Tasks

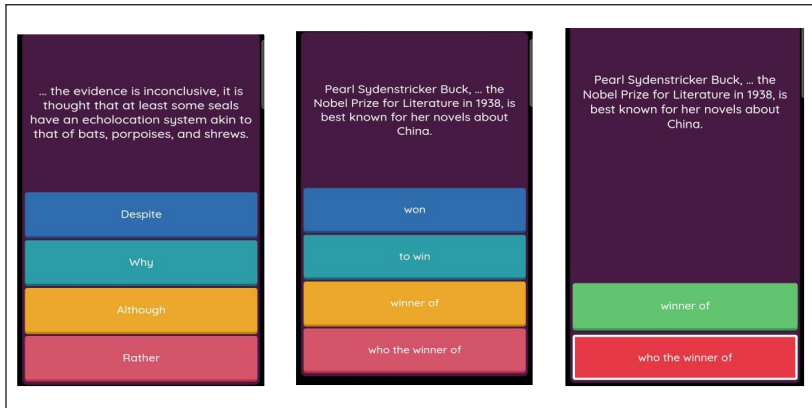


Figure 4

Samples from Kahoot! Tasks

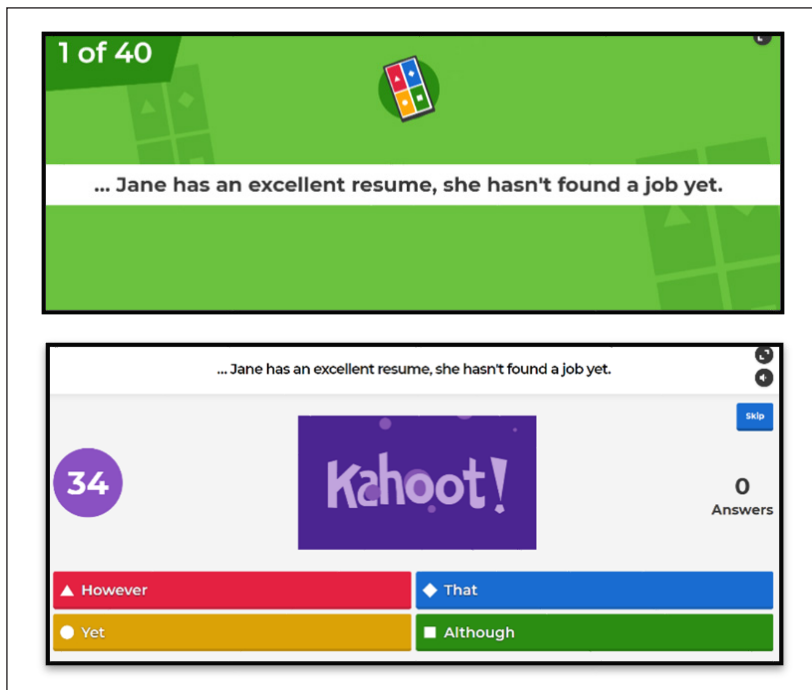
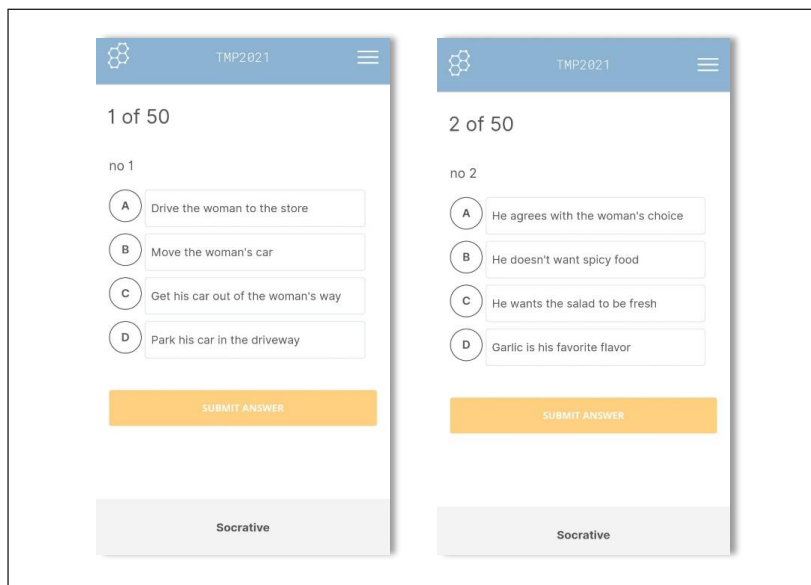


Figure 5

Samples from Socrative Tasks



The primary goal of the TOEFL preparatory course was to assist students in achieving a minimum passing score or higher score. The course referred to in this study was a collaboration between Politeknik Perkeretaapian Indonesia Madiun and Universitas Muhadi Setiabudi. Due to a scarcity of English lecturers and a paucity of TOEFL preparatory courses, Politeknik Perkeretaapian Indonesia Madiun was compelled to work with other universities/higher education institutions. Universitas Muhadi Setiabudi, on the other hand, has launched a TOEFL preparatory course to assist students in attaining the required graduation score. The minimum TOEFL score requirement established by Politeknik Perkeretaapian Indonesia Madiun was 480, whereas the minimum score established by Universitas Muhadi Setiabudi was 450. Minimum target scores were established based on stakeholders' requirements to apply for jobs in each college's field. As a result, both institutions had distinct passing grades to satisfy stakeholders' requirements for a minimum English language competency score.

The course was 40 hours in total and divided into 20 sessions. Each session was two hours. The training ran for two weeks, Monday

through Saturday, with Sunday off. It began with a pretest during the initial meeting and concluded with a post-test during the last meeting. All teaching and learning procedures in all classes were conducted online in accordance with government directives. The program made use of *Zoom* app to conduct face-to-face meetings and a variety of digital technologies, including *Google Forms* (for pre- and post-tests), *Quizizz*, *Kahoot!* and *Socrative*. Table 1 summarizes the program in detail.

Table 1

TOEFL Preparatory Course Design

Meeting	Activity	Application of Digital Technologies
	Pre-test	Google Forms
1	Introduction and motivational talk	-
2	Listening comprehension	Quizizz
3	Listening comprehension	Quizizz
4	Listening comprehension	Kahoot!
5	Listening comprehension	Kahoot!
6	Listening comprehension	Socrative
7	Listening comprehension	Socrative
8	Structure and written expression	Quizizz
9	Structure and written expression	Quizizz
10	Structure and written expression	Kahoot!
11	Structure and written expression	Kahoot!
12	Structure and written expression	Socrative
13	Structure and written expression	Socrative
14	Reading comprehension	Quizizz
15	Reading comprehension	Quizizz
16	Reading comprehension	Kahoot!
17	Reading comprehension	Kahoot!
18	Reading comprehension	Socrative
19	Reading comprehension	Socrative
20	Review	Google Forms
	Post-test	Google Forms

Instrument and Data Collection

The study analyzed students' total results on the pretest and post-test, as well as their scores on individual skills. The pretest and post-test questions were adapted from The Official Guide to TOEFL, Fifth

Edition. These were standardized tests whose validity and reliability had been established (Educational Testing Service, 2018). The pretest was administered prior to the start of the TOEFL preparatory course, and the post-test was administered following the conclusion of the program. The assessments evaluated students' abilities in three areas: listening comprehension (part 1), structure and writing expression (part 2), and reading comprehension (part 3) as shown in Table 2. Part 1 consisted of 50 multiple-choice questions and took about 35 minutes to complete, with a score range of 31–68. Part 2 lasted 25 minutes and comprised 40 questions with a score range of 31–68. Part 3 consisted of 50 multiple-choice questions and lasted 55 minutes on a 31–67 point scale. There were 140 questions in total, with a time limit of about two hours and a score range of 310–677. Both tests used the same format and randomly assigned questions and answers for each section of the *Google Forms*.

Table 2

Sample Test Questions (taken from Google Forms)

Listening Comprehension	Structure and Written Expression	Reading Comprehension
DIRECTIONS In Part A, you will hear short conversations between two people. After each conversation, you will hear a question about the conversation. The conversations and questions will not be repeated. After you hear a question, read the four possible answers in your book and choose the best answer. Then, on your answer sheet, find the number of the question and fill the space that corresponds to the letter of the answer you have chosen. ... 1 * ☐ Drive the woman to the store ☐ Move the woman's car ☐ Get his car out of the woman's way ☐ Park his car in the driveway	DIRECTIONS Questions 1-15 are incomplete sentences. Beneath each sentence you will see four words or phrases, marked (A), (B), (C) and (D). Choose the one word or phrase that best completes the sentence. ... Jane has an excellent resume, she hasn't found a job yet. * ☐ However ☐ Yet ☐ That ☐ Although	In this section you will read several passages. Each one is followed by several questions about it. For questions 1 – 50, you are to choose the one best answer, (A), (B), (C), or (D), to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage. 1. The word "prominently" in paragraph * 3 can easily be replaced by ... ☐ (A) significantly ☐ (B) perfectly ☐ (C) accurately ☐ (D) excellently

Research Procedure and Data Analysis

The research procedure involved:

Stage 1 – Preparation

The TOEFL materials were prepared, and tasks in the game-based apps were created during this stage. This stage also involved the

administration of a pretest and a motivational session during the first meeting. It also included the set-up for Zoom meetings for the whole class.

Stage 2 – Implementation

The course was conducted in accordance with the syllabus and lesson plans. The class began with a lecture on the specified lesson, followed by task activities on the game-based apps.

Stage 3 – Evaluation

The evaluation was performed in the 20th meeting using a post-test, as explained in the earlier sub-session. Students' pretest and post-test results from this study were collected at the end of the course. The data was cleaned and computed using statistical software.

The collected data was initially evaluated for normality using the skewness and kurtosis rule between -2 and +2 (George & Mallery, 2003). As the results were within the normal range, the data was further investigated using parametric tests. To answer the first research question, paired-sample t-tests were used to determine the impact of the TOEFL preparatory course design on student learning outcomes. *Cohen's d* coefficient was evaluated to determine the magnitude of the impact of the course design on students' learning results. For the second research question, an independent-sampled t-test was used to identify statistical differences between the Railway Mechanical Technology study program and the Management study program, and a one-way ANOVA was used to reveal statistical differences between the two study programs: Railway Mechanical Technology and Management study in terms of TOEFL ITP component scores (listening comprehension, structure and written expression, and reading comprehension). The answer to the third research question was then obtained by analyzing students' achievements based on the passing grade score established by each university. As mentioned Politeknik Perkeretaapian Indonesia Madiun established a passing grade score of 480, whereas Universitas Muhadi Setiabudi established a passing grade score of 450. This analysis would then disclose who succeeded and who failed TOEFL after enrolling in the TOEFL preparatory course.

RESULTS

Students' Learning Outcomes Before and After the Incorporation of Task-Based Learning and Digital Technologies

To confirm the homogeneity of the data, a descriptive comparison (Table 3) was made between students' pretest and post-test scores. The means of the students' scores ($N = 96$) increased from 421.97 ($SD = 44.57$) to 474.49 ($SD = 32.23$). The means of students' scores improved for each component as well: listening scores increased from 39.24 ($SD = 5.63$) to 46.35 ($SD = 4.11$); structure scores increased from 38.95 ($SD = 6.86$) to 43.40 ($SD = 4.61$); and reading scores increased from 48.41 ($SD = 7.83$) to 52.60 ($SD = 5.74$).

Table 3

Descriptive Statistics

TOEFL Part	Test	Mean	SD	Min	Max	Skewness	Kurtosis
Listening	Pre-	39.24	5.63	20	49	-.52	.09
	Post-	46.35	4.11	35	53	-.53	-.12
Structure	Pre-	38.95	6.86	27	58	.75	.55
	Post-	43.40	4.61	25	56	-.50	1.97
Reading	Pre-	48.41	7.83	23	63	-.32	.48
	Post-	52.60	5.74	35	63	-.64	.64
Total	Pre-	421.97	44.57	317	503	-.50	-.49
	Post-	474.49	32.23	383	520	-.57	.017

The results of paired-sample t-tests (Table 4) demonstrated a significant difference in students' scores between pretest and post-test ($M = 421.97$, $SD = 44.57$) and post-test ($M = 474.49$, $SD = 32.23$); $t(95) = 15.35$, $p < .001$). This revealed that the TOEFL preparatory course had a considerable effect on students' achievement in the classroom. There was also an increasing tendency in the listening section between pretest ($M = 39.24$, $SD = 5.63$) and post-test ($M = 46.35$, $SD = 4.11$); $t(95) = 10.32$, $p < .001$). The trends both in the structure and reading parts were inclined from pretest to post-test. Structure was from $M = 38.95$ ($SD = 6.86$) on pretest to $M = 43.40$ ($SD = 4.61$) on post-test with $t(95) = 5.90$, $p < .001$. The pretest for reading was $M = 48.41$ ($SD = 7.83$), and the result was $M = 52.60$ ($SD = 5.74$) on the post-test with $t(95) = 5.63$, $p < .001$).

Table 4

Paired-Sample t-Test

Paired Differences								
Pretest Post-test	Mean	Std Deviation	Std Error Mean	95% Confidence Interval of the Difference		T	df	Sig (2-tailed)
				Lower	Upper			
Listening	7.11	6.75	.60	8.48	5.75	10.32	95	.000
Structure	4.45	7.39	.75	5.94	2.95	5.90	95	.000
Reading	4.19	7.29	.74	5.67	2.71	5.63	95	.000
Total	52.52	33.52	3.42	59.31	45.73	15.35	95	.000

The overall effect size was moderate ($N = 96$, $d = .662$). In each part, the effect size was varied. In the listening part, the effect size was weak ($d = .063$), while in the structure and reading part, the effect size on both parts were average (d structure = .216; d reading = .456). The detail of Cohen's d correlation is presented in Table 5.

Table 5

Cohen's d Correlation

Pair (Pretest and Post-test)	Cohen's d	Effect Size
Listening	.063	Weak
Structure	.216	Modest
Reading	.456	Modest
Total	.662	Moderate

Students' Learning Outcomes across Study Programs

The statistical difference between study programs was determined using an independent sample t-test. The analysis revealed significant differences in the outcomes of the Railway Mechanical Technology and Management study programs ($t(94) = -4.13$, $p < .001$). There was a total of 25.15 mean differences (lowest = 37.23, highest = 13.06). The difference was 3.21 (lowest = 4.75, highest = 1.67) in the listening section. The difference in the second section, structure was .75 (lower = 1.13, upper = 2.63), whereas the mean difference in the reading section was 5.10 (lower = 7.19, upper = 3.01). All of these were within the differences' 95 percent confidence interval. This

demonstrated a statistically significant difference in students' learning results when task- and game-based learning were integrated into an online TOEFL preparatory course. More precisely, Table 6 indicated that in the total scores, listening scores, and reading scores across study programs, there were equal variances since *Levene's sig* > 0.05 (total = .356, listening = .101, and reading = .953). In the structure part, there were no equivalent variances ($p < .001$).

Table 6

Independent Sample t-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig	t	df	Sig (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Listening	Equal Variances Assumed	2.74	.10	-4.14	94	.00	-3.22	.775	-4.75	-1.66
	Equal Variances not Assumed			-4.14	87.18	.00	-3.21	.77	-4.75	-1.67
Structure	Equal Variances Assumed	17.18	.00	.780	94	.43	.75	.94	-1.12	2.62
	Equal Variances not Assumed			.80	69.38	.43	.75	.94	-1.13	2.63
Reading	Equal Variances Assumed	.00	.95	-4.85	94	.00	-5.10	1.05	-7.19	-3.01
	Equal Variances not Assumed			-4.85	93.60	.00	-5.10	1.05	-7.19	-3.01
Total	Equal Variances Assumed	.86	.36	-4.13	94	.00	-25.15	6.08	-37.23	-13.07
	Equal Variances not Assumed			-4.13	88.51	.00	-25.15	6.08	-37.24	-13.06

There were significant differences in listening, reading, and total scores across the study programs (Table 7), as indicated by the mean

square (listening: $F(95) = 17.14, p < .001$; reading: $F(95) = 23.51, p < .001$; and total scores: $F(95) = 17.08, p < .001$). While the results of the two groups (Railway Mechanical Technology study program and Management study program) were not significantly different in terms of structure ($F(95) = .633, p = .428$).

Table 7

One-way ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Listening	Between Groups	247.042	1	247.042	17.14	.000
	Within Groups	1354.917	94	14.414		
	Total	1601.958	95			
Structure	Between Groups	13.500	1	13.500	.633	.428
	Within Groups	2003.458	94	21.313		
	Total	2016.958	95			
Reading	Between Groups	625.260	1	625.260	23.51	.000
	Within Groups	2499.896	94	26.595		
	Total	3125.156	95			
Total Scores	Between Groups	15175.510	1	15175.510	17.08	.000
	Within Groups	83500.479	94	888.303		
	Total	98675.990	95			

Students' Improvement Before and After Taking the Course based on Passing Grade

The analysis of students' achievements based on the passing grade established by each university (Table 8) revealed that the percentage of students achieving certain goals varied significantly between the two higher education institutions. Minimum TOEFL passing grades were required for graduation in the Railway Mechanical Technology and Management study programs. The passing mark for Railway Mechanical Technology was 480, which resulted in 33 students (68.75 %) failing the post-test. Only 15 students (31.25 %) received a passing grade. Although fewer than 50% of students met the minimum criterion, their performance improved by 27.08 % when compared to pretest results (13 students added). The pretest scores resulted in an extremely low percentage of students passing (4.17 %, -2 students). While for students enrolled in the Management study program, the passing grade point average was lower, at 450, and thus more students passed. 44 students (91.67 %) met the minimum requirements, while

only four (8.33 %) did not. It increased by 50% from the pretest (24 additional students), resulting in more than 50% of students failing.

Table 8

Total Scores Criteria

Passing Grade Score		Passed		Failed	
		Number of Students	Percentage	Number of Students	Percentage
Railway Mechanical Technology					
Pretest	480	2	4.17%	46	95.83%
Post-test		15	31.25 %	33	68.75 %
Management Study					
Pretest	450	20	41.67%	28	58.33%
Post-test		44	91.67 %	4	8.33 %

DISCUSSION

The purpose of this study was to quantify the effect of task- and game-based learning on students' learning outcomes as measured by their overall and specific-skills TOEFL scores at Politeknik Perkeretaapian Indonesia Madiun and Universitas Muhadi Setiabudi, Indonesia. Based on the results, there are three points worth discussing.

The paired sample t-test and Cohen's d coefficient analysis verified that students' learning outcomes increased significantly after enrolling in a TOEFL preparatory course, indicating the course's favourable influence. These findings corroborate prior research demonstrating that Task-Based Learning enhances students' language skills (Celik, 2017), while incorporating technology into TBL environments enables English language learners to develop their English and digital literacy skills (Chen & Lin, 2018). At this point, the task-based learning implementation and digital tools are merged according to the integration model given by Casañ-Pitarch and Candel-Mora (2021). In this triangulation strategy, digital technologies, language, and content all interact to help students gain the desired language skills. As a result, teachers must consider the digital tools and content used to dramatically improve students' target language skills. As such, this study made use of game-based applications such as *Kahoot!*, *Socrative*, and *Quizizz*, as well as information from Universitas

Muhadi Setiabudi's English Intensive Program book, to achieve the learning objectives. The selected game-based applications have been shown to boost students' learning achievement when used with EFL students (Dakka, 2015; Waluyo & Bucol, 2021; Zarzycka-Piskorz, 2016), and the book has been proven to assist students in increasing their TOEFL scores and has received positive feedback from students (Bakoko & Pratiwi, 2021; Ubaedillah et al., 2021).

Furthermore, despite the fact that students' listening and reading comprehension scores improved tremendously, while structure and written expression scores improved marginally, the total scores had improved significantly. This finding corroborates research undertaken in a Thai university setting, where it was discovered that listening and reading competencies improved more rapidly than other language abilities across study programs following students' exposure to digital platforms (Waluyo, 2020). However, these findings contradict a study conducted in a Turkish university setting, which found that task-based learning significantly increased students' structure scores (Yildiz & Senel, 2017). Thus, teacher intervention in implementing the curriculum via Task-Based Learning should be properly administered to produce meaningful results across all language skills. A study conducted in ELT classes discovered a strong positive correlation between teacher transformational leadership and students' course perspectives and outcomes (Dedeyn, 2021). More specifically, a teacher's inspirational and motivating leadership is a significant predictor of student achievement (Listyani, 2019). Thus, it is recommended that the teacher be enthusiastic, create a vision for their lessons, challenge their students, and use reward strategically in the TOEFL preparatory course.

In comparing the two study programs, it was found that Railway Mechanical Technology improved at a slower rate than the Management Study program. The difference in the percentage of students who passed the university's passing grade was due to the higher passing grade score for Railway Mechanical Technology. A recent study in Railway Mechanical Technology found that TOEFL preparatory classes should be kept small to maximize their effectiveness in boosting students' results (Pratiwi et al., 2021). However, the classrooms used in this study had a maximum of 48 individuals in each class. As a result, it is expected that a larger class would have been ineffective in recruiting Railway Mechanical Technology students. This corroborated Alderson and Hamp-Lyons's

findings (1996) that TOEFL classrooms should be smaller than ordinary sessions to maximize the program's effectiveness in assisting students to achieve their target score. However, this assumption did not match the data from the Management study program, which has the same class size as the Railway Mechanical Technology program. Indeed, students' scores improved dramatically, and only a small percentage of students fell short of the university's minimum passing level.

Based on the results of this study, the researchers suggest that TOEFL teachers/instructors prioritize language instruction and a variety of classroom activities while incorporating task-based learning to accomplish learning objectives (Kanoksilapatham & Suranakkharin, 2018). This may pose a challenge to teachers in developing a course plan that interests students and fulfils their needs (Bahari & Salimi, 2019). Certain concerns related to time limits, technical difficulties, and integrating technologies into instructional goals may arise (Fathali et al., 2020). However, teachers are highly encouraged to continue developing their competencies and exploring new innovations to accommodate students' diverse requirements and learning objectives throughout task building. When integrating activities with ICT, ICT facilities, technical assistance, and small classroom size should be taken into account for the purpose of improving students' learning outcomes (Nhu et al., 2014).

CONCLUSION

This study highlighted students' learning outcomes in an online TOEFL preparatory course from two higher education institutions in Indonesia that implemented task- and game-based learning. The impact of the course design on students' learning outcomes were moderate, with significant score improvement. Hence, it is suggested that an online TOEFL preparatory course consider task- and game-based learning to achieve students' target score. Variation in tasks in the TOEFL preparatory class is required, including the application of digital technologies, especially during the online learning process. Therefore, teachers' innovation in developing materials (tasks) and integrating digital technologies is required to run this program successfully. In view of the students' learning outcomes across the study programs, it is also strongly suggested that both study programs evaluate the target score, whether it is to be based on stakeholders'

requirements or students' language performance (input) so as to enhance the effectiveness of the preparatory course.

The study's findings have various educational implications. The current COVID-19 pandemic has unquestionably prompted the implementation of synchronous and asynchronous English classes at institutions worldwide (Crawford et al., 2020). The emphasis is now more than ever on investigating and enhancing the practice of online teaching and learning. According to Zhao and Watterston (2021), even after the pandemic has passed, relevant online learning instructions and practices will continue to be implemented and will most likely become a regular part of teachers' and students' daily routines, particularly in higher education institutions, due to the significant changes that teachers and students have been through for several years. In this case, the current study's findings can be incorporated in test preparatory course design and instruction. The task and game-based components have been shown to be effective in accomplishing course objectives. Furthermore, from a broader perspective, such findings are applicable not only to existing emergency online classes, but also to distance education and blended learning. The incorporation of assignments and online games in an online course may assist students in enjoying the course while remaining focused on improving their results on targeted English assessments.

Nonetheless, there are some limitations to this study that must be acknowledged. The study employed a single-case experimental design, and the analysis was based on statistical analyses of students' learning outcomes. Future research should employ experimental designs that include both experimental and control groups to elicit additional discussion on this field of study. Investigating teachers' and students' perceptions of the TOEFL preparatory course through a qualitative study approach may also be beneficial in providing alternative viewpoints. Regardless, the statistical methodology selected to address the research questions in the study was successful.

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