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# WHICH ONE IS BETTER BETWEEN PAPER-BASED OR COMPUTER-BASED TOEFL?: TEST TAKERS' PERSPECTIVES

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## A B S T R A C T

Due to the lack of current study numbers discussing English proficiency tests such as TOEFL, this study aims to investigate the test takers' point of view on the TOEFL ITP test, mainly paper based-test and computer-based TOEFL, the similar TOEFL ITP test but employing computer screen as media. The latest study about those two assessments is necessary since both kinds of TOEFL media are massively implemented, particularly backward and after the pandemic Covid19. A survey methodology is employed in this study by spreading questionnaires. The scores gained from those two disparate TOEFL tests are described statistically. The gathered data were then analyzed using descriptive statistics and factor analysis to outline the perspectives of the test-takers on TOEFL PBT and CBT. Fifty-two participants from various education background levels, ages and genders partaking in this study. As a result, this study reveals that the implementing a computer screen for TOEFL obtained more positive percentages than paper-based TOEFL tests. Further discussion concerning prior study and implications are presented.

## 1. INTRODUCTION

In several countries, especially Indonesia, the TOEFL certificate is necessary to gain a job or apply for a scholarship for standardized English proficiency. The TOEFL score is also required as part of the graduation requirement for either a bachelor's or master' degree (Kristanti, 2019). However, acquiring the desired score is very competitive. The number of test repetitions is required to gain the cut score for university admission as well as for progress demonstration (Barkaoui, 2017). In order to achieve the designated score standard of TOEFL, a particular learning term is necessary, including doing ingeminated, tests to obtain the required TOEFL score (Monfils & Manna, 2021). In addition, the TOEFL score can create a knowledgeable sense of job applicants by providing value-added information (Sawaki & Sinharay, 2018) such as the speaking ability of the employee candidate by comparing the TOEFL score and their oral skill in English (Brooks & Swain, 2014). In academic areas, most English-speaking universities demand that the international students to fulfill the English proficiency test requirement, such as TOEFL, as proof of their English competence (Sinclair et al., 2019). However, the TOEFL score did not show a good correlation with academic achievement in general (Bridgeman et al., 2016; Ihlenfeldt & Rios, 2022).

To apply for various scholarships in Indonesia such as the LPDP scholarship, one of the foremost fully funded study programs, the utilization of TOEFL ITP still takes a primary role as the most general test for the public (Putri & Syarif, 2021). The demand for TOEFL ITP as language assessment is substantially increasing and obtaining the high number of test-takers in the past and in the present. Initially, TOEFL can only be conducted in test centers affiliated with ETS (English Testing System) and must be performed in person without the possibility of replacement or reschedule.

However, the pandemic hit the entire world in current two years. It made a change in every aspect of human's life involving education side. After the pandemic, all sectors have moved to be screen-based, as has the TOEFL test conduction. The offline TOEFL ITP, which used to be conducted in person, has changed dramatically into an online test. Otherwise, the request portion of TOEFL ITP remains high even though the pandemic has affected the world. The option of having at-home test is extensively applied and it has addressed the new issue of testing center existence as well as the real communication world of language (Isbell & Kremmel, 2020).

An increasing number of institutions offer TOEFL ITP in the virtual version. In this study, the term CBT (Computer Based Test) is considered in the same line as the online TOEFL test. Furthermore, the countdown timer is considerably used in this online test to remind the test-takers of their spare time to finish the test (Lee & Winke, 2018). To simplify the terms in this study, the offline TOEFL test will be considered TOEFL PBT (with paper-and-pencil-based) and online TOEFL is labelled TOEFL CBT. CBT or at-home TOEFL test through the examinees' computer significantly depends on the content distribution and the reliability of the process in doing the test (Papageorgiou & Manna, 2021).

TOEFL stands for Test of English as Foreign Language used to measure public's competence in English. The TOEFL test is considered the most general assessment. However, at the same time, it is debated among English teachers on how effective this test is in deciding students' level of English. The increasing number of international students willing to pursue their education abroad is necessary to gain a minimum TOEFL score. This is one of the most crucial reasons behind the existence of the TOEFL test. The TOEFL ITP is conducted under the official institution, ETS (English Testing System).

Conservatively, this test only used a paper-pencil format and the test-takers must perform academic works by answering the test of listening with 50 questions, structure and written test with 40 questions and reading with 50 questions (Salma, 2018).

Recently, TOEFL ITP with computer-based is implemented during the pandemic. The need for TOEFL ITP is relatively abundant and the test-takers must do the test without coming to official test locations in person. The participants of this online test must register in an official institution by filling their identity virtually, confirming the photo, and paying for the test. Then, the instructions for TOEFL online show-up. Some points that need to be considered in taking the TOEFL CBT test are the internet connection, the quality of the personal computer and the selected room that test takers desire to use. All stuff regarding online TOEFL should be well prepared and have zero tolerance for technical issue such as bad internet connection, external distractions, crowd, physically unwell, and many more. The test taker must solely do the test and no one is allowed to help them.

Several studies regarding the TOEFL test have been previously conducted. One of the studies stated that university students mostly used self-study to prepare themselves for the preliminary test TOEFL. By seeking various TOEFL materials, the students' effort to have more learning sources as their proponents of studying TOEFL at their own (Netta & Trisnawati, 2019). Another study about the teaching strategy of the TOEFL test by (Abdulloh et al., 2021) revealed that TOEFL teaching by preceding section two of TOEFL, or the structure part, positively impacts students' TOEFL score.

Furthermore, another recent study regarding the TOEFL test unpacked the use of the online classroom for TOEFL preparation, which is more effective for students' TOEFL improvement (Suryani, 2021). In terms of teaching methods for TOEFL, the outcome of a study reveals the employment of Project Based Learning that is considered positive for TOEFL comprehensive betterment (Syakur, 2019). In education, TOEFL also contributes to the teacher's judgement of students' English skill by comparing the level of CEFR (Common European Framework Reference of language). As a result, the teachers mostly overestimated the level of EFL proficiency (Fleckenstein et al., 2018). Unlike the PBT TOEFL test, (Papageorgiou & Manna, 2021) states that the screen-based test of TOEFL is affected by the content delivery of TOEFL sections and the security of TOEFL conduction through the test takers' computer. The TOEFL score as mandatory document of job admission or higher-level education entry requirement is used to define the sense of English from applicants and this strategy has been employed by most the stakeholders (Sawaki & Sinharay, 2018; Sinclair et al., 2019).

As mentioned studies above, most of the former studies regarding TOEFL discussed about teaching strategies of TOEFL or the use of TOEFL as English measurement in the application process. However, the study addressing the applied media of TOEFL assessment has not been issued yet. Therefore, this research aims to investigate (1) which test media on TOEFL is preferable for test takers and 2) how the test takers' voices on each TOEFL section by utilizing sheet and screen. The urge to do research related to TOEFL test media is significantly encouraged to outline the comparison between the TOEFL ITP test using paper and computer through the test taker's views.

## 2. RESEARCH METHOD

Survey research was employed in this study to find out the comparison between paper-based and computer-based TOEFL from the test-takers' contexts. Fifty-two people who earned TOEFL scores and experienced online and offline tests participated in this research. However, only thirty-five subjects did complete the entire questions on the survey and fulfilled the research features. This consists of 23 female and 12 male participants. Their educational backgrounds varied from high school until postgraduate and their ages varied from teen to late 30s.

The survey data were gained through a questionnaire with 12 questions. Prior to answering the research questions, the participants were required to answer several personal information such as complete name, age, academic background, the last test date of paper-based TOEFL and its score and the current testing date of computer-based TOEFL or online test with the result. Then, the primary inquiries of survey contained 12 questions, which are divided into general and specific focus as it described below:

| The question number | Research inquiry |
|---|---|
| 1,2 | General focus: the convenience of the preferred test and the reason for the choice |
| 3,4 | General focus: the effectiveness of the preferred test and the reason for the choice |
| 5,6 | General focus: the flexibility of the preferred test and the reason |
| 7,8 | Specific focus: "I feel that the listening section is more clear through ……(PBT/CBT) test" and the reason |
| 9,10 | Specific focus: "I think structure section is easier to understand using ……(PBT/CBT) test" and the reason |
| 11,12 | Specific focus: "Reading section is easier and more comprehendible through ……(PBT/CBT) test" and the reason |

The data were gathered within two months. The first round of collecting data focused on university students, lecturers and university staffs who have mostly accomplished the TOEFL. Since the number of data from the first cycle was considered less, the second round was given to high school students or English course students who might have experienced the TOEFL test to acquire more data.

To analyze the data, the overall data were sorted out in terms of completeness from 52 to 35. Then, the data were grouped based on the participants' desirable TOEFL test. After organizing the data, the Microsoft Excel diagram displayed the percentage of each section focus from both tests. The participants' notions were classified based on the idea similarity and that would be construed descriptively for each session to deliberate the numeric data on the diagram. Furthermore, to outline the score gap of both PBT and CBT TOEFL, the test scores from participants were shown in a graphic as supporting data.

## 3. FINDING AND DISCUSSION

To acknowledge the research questions, the outcome of the study will be presented in this section. The first focus is to find out the convenience of TOEFL from the participants' angles and unpack the arguments behind their cherished test. The result reveals that 66% of participants opted computer as a more comfortable tool than paper to facilitate the TOEFL test. It is figured in the diagram below:
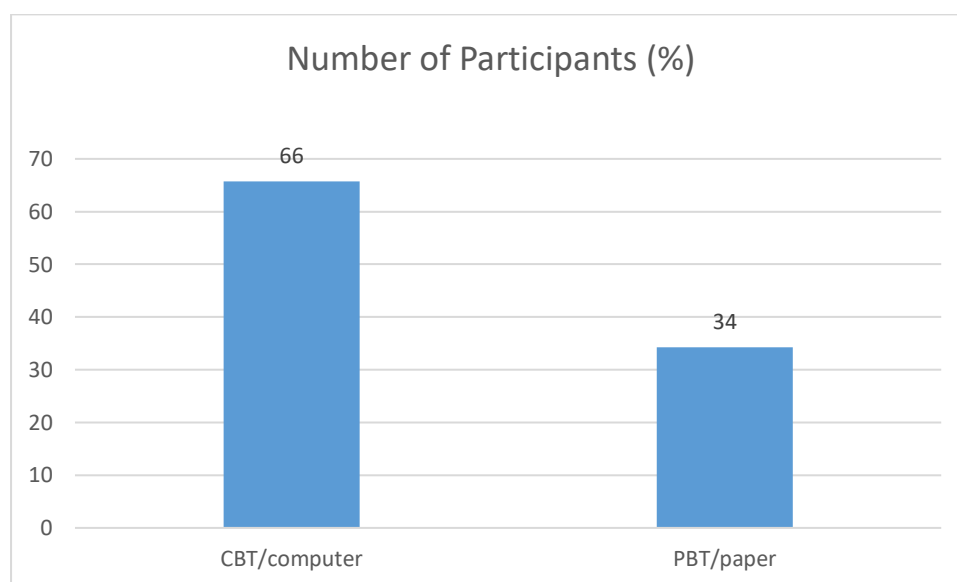


Diagram 1. The convenience of TOEFL PBT and CBT

The biggest reasons for choosing CBT over PBT from the test takers' attitude are the clearance of listening to audio. The test takers are allowed to use an earphone or personal headset instead of listening from the sound system, which mainly occurred in offline TOEFL test. Therefore, they are able to intensify their hearing of English conversation. The 66% of test-takers also contended that using screens on tests is easy to select the answer options by clicking the option without wasting time blackening the answers using pencil. Furthermore, a digital timer shown on the screen, which can count down and become an alarm, can assist the test takers in managing time spent on online TOEFL test. The pro-CBT participants reaffirmed that the virtual TOEFL test was highly effective and practical. For instance, the possibility of skipping the questions unintentionally is seemingly less happening through a computer than paper and the TOEFL CBT offers the flexibility of time and place, and this becomes a supportive reason why test takers choose CBT over PBT.

However, 34% of participants still support using paper and pencil as the media in the TOEFL test. They argue that using PBT of the TOEFL test is preferable regarding reading. The test takers perceive that their vision is much better when seeing questions

or texts on paper than on screen. The resilience of looking at the questions on paper and preventing eye ache during the test becomes positive narrations for test takers to do paper-based TOEFL.

The second point is the effectiveness of TOEFL media. The result revealed that 71% of test takers chose CBT over PBT based on its effectiveness. The comparison can be seen below:
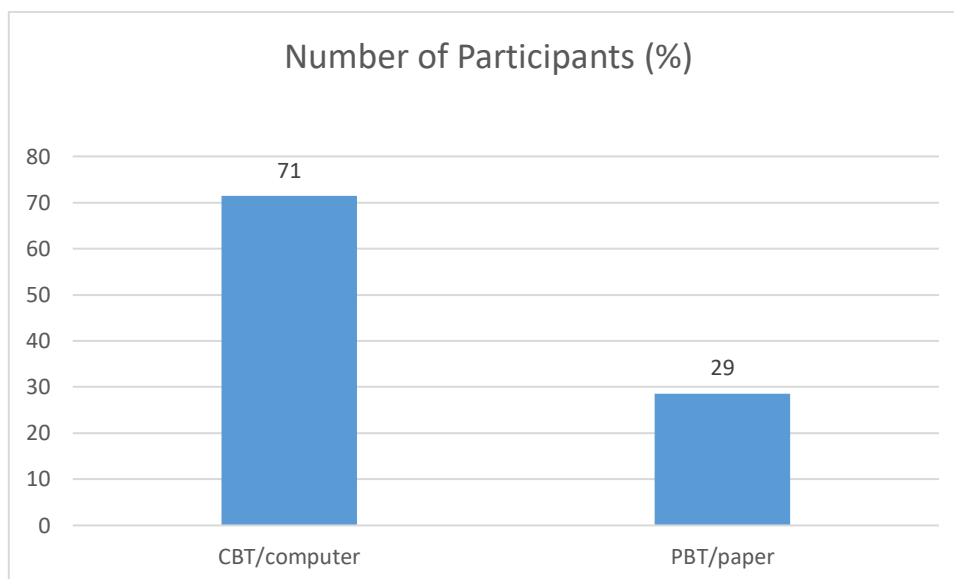


Diagram 2. The effectiveness of TOEFL PBT and CBT

The diagram above displays the percentage of the effectuality between computer and paper-using tests. For several reasons, the computer took more percentage. The participants revealed perspectives such as the affability of designating the time, borderless for the test, decreasing human error, obtaining the immediate score and reducing the possibility of external distractions such as noise and audio trouble. In addition to the justifications mentioned above, the computer test is considered environmentally friendly because using CBT means decreasing paper waste. The simplicity of question delivery portrayed can ease the test-takers to comprehend and select the answer option. Not necessary to bring stationery and hold many papers on hand, which does affect the test taker's readiness to do the TOEFL test.

While many affirmative arguments exist for the TOEFL CBT effectivity, the participants who appoint TOEFL PBT also own their reasons. They argue that having paper-based tests can prevent them from getting technical issue such as sudden bad internet connection and computer compatibility. Furthermore, the test takers can concentrate better when reading the questions on paper since it is easy to flip back and forth. They can also read faster and look at the previous questions quickly. The TOEFL doers are able to focus comfortably on answering questions without worrying about technical issues since not all participants reside in a place with a good internet connection.

Afterward the following point concerns the flexibility of the sheet TOEFL and networked tests. The diagram below reveals the chunk of resilience. The computer test takes more percentage than the paper one. It can be seen as follows:
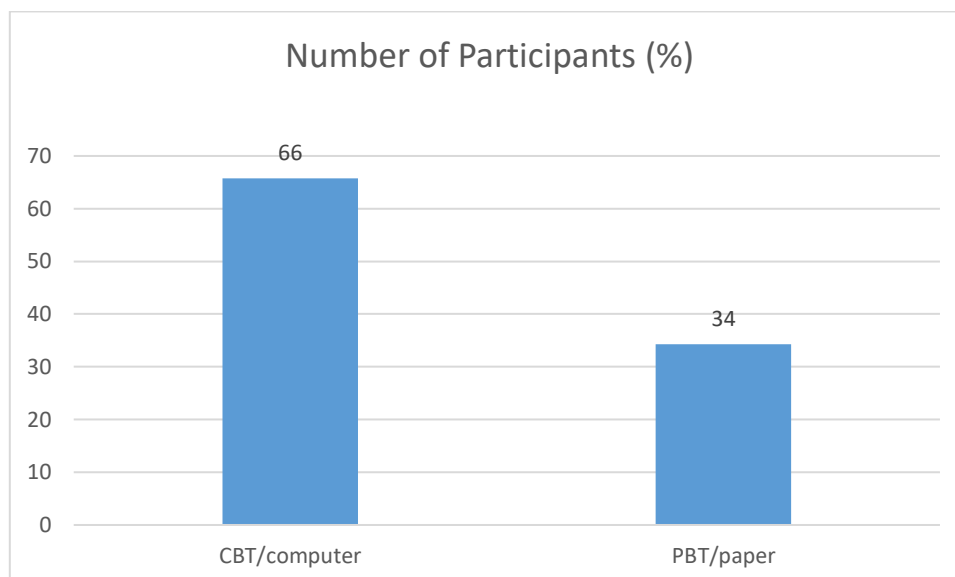
Diagram 3. The flexibility between TOEFL PBT and CBT

Several perspectives endorse the more number gained by TOEFL CBT. For example, 66% of participants mostly stated the same speculation that the TOEFL CBT is more straightforward and adjustable regarding test-location freedom based on the participants' convenience. They are not required to attend the official test center in person, which is sometimes only accessible in other cities. Therefore, this online TOEFL test can economically assist the participants in reducing the possible charge caused by the trip fund from their hometown to the test center. Furthermore, the test takers comply that they do not have to be concerned with a formal dress or specific polite-look-alike clothing to attend the official test in offline test in as much as they can wear anything comfortable for the virtual TOEFL test.

On the other hand, the pro-sided TOEFL PBT contend that the comfort of holding the question sheet is irreplaceable with computer test, especially the reading section, which requires intense concentration. The participants regarded that by using paper they could seek proper answers straightforwardly and take notes if needed. Moreover, the charge to pay for the internet fee is unnecessary, and they should not be worried about the internet network stability during the test.

The later issue to address is particular for each section of the TOEFL test such as listening, structure and written test and reading. To plead the second research question, this outcome is to outline the test takers' views on every section of TOEFL employing paper or computer. Initially, the participants demonstrated their overview of the listening section through the computer sound and speaker system on the PBT version. The listening is viewed from the angle of clearance in the TOEFL listening section. As consideration of the factual test, at offline test or PBT, the number of test takers gather and sit in the same room with the sound system in each corner of the testing area. Then, the available speaker sounds the listening audio. The participants would start the listening section and end this section at the same exact time.

Meanwhile, the TOEFL CBT employs listening devices such as earphones or headsets. In this case, the test-takers can exploit their own audio tools. The

beginning of this section on the computer might differ from participant to participant. The listening time counter starts running when the test taker clicks the button option "start". Therefore, each participant possibly culminates in this section at various times. However, the listening duration has been adjudicated by the test system. During the online test, a person in charge of the official test is always vacant to assist the test takers when they face technical trouble in doing the test. The participants' notion of listening is summarized in the diagram below:
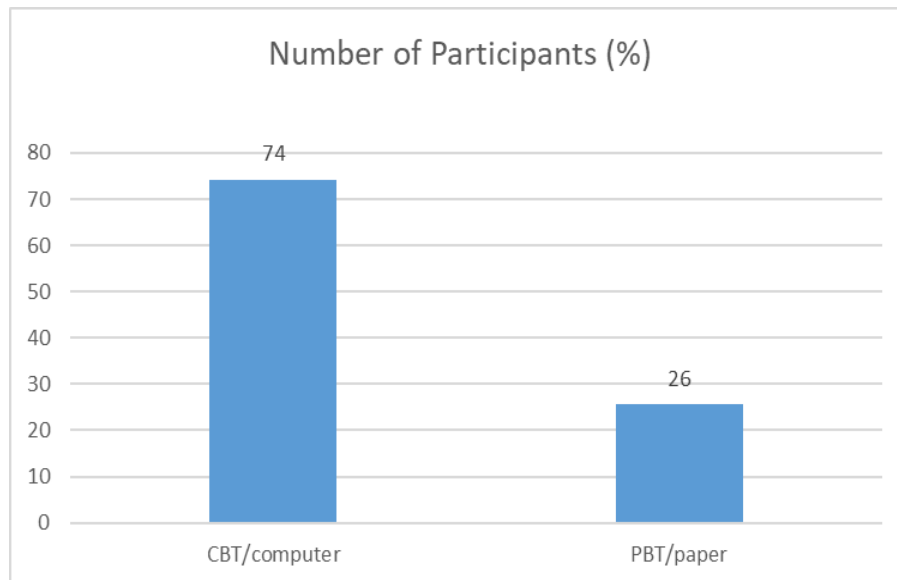


Diagram 4. The clearance of the listening section between TOEFL PBT and CBT

From the diagram above, it seems that 74% of participants would prefer listening to TOEFL through the computer. The propriety stated that the TOEFL CBT allows the participants to wield their own listening aid stuff. Apart from that, they can freely adjust the volume of listening audio as desired. The TOEFL contributors are able to listen to the conversation straight from the PC without any distractions. In contrast, some acknowledgments in favor of computer mention that the offline TOEFL or PBT audio was often found unclear. The distance between the test seat and the sound system negatively affects listening comprehension.

However, the percentage of 26% displays the participant number who still elevate to have the listening in the offline test. In terms of listening answer delivery, they affirmed that seeing directly the answer options on the sheet help them better to comprehend the dialogues and monologues on listening and predict the best answer. In addition, the participants assume that taking a note on paper, writing the answer, and deleting or changing the option on a sheet are more accessible than taking the paper test. The exact time to begin and finish the listening test in tandem also helps them to concentrate more effectively on the listening section.

The second section of the TOEFL test is the structure and written test. On PBT rendition, the question paper would be distributed conservatively and the participants are given 25 minutes to complete the 40 questions. They are banned from extending the time to complete the test when the testing room supervisor has stated the time is up. Meanwhile, the structure test on CBT is administrated on screen. Each question would appear one by one and not appear as a whole test set.

To move or skip the question, participants could click the button 'next' or get back to the former question with the button "previous". In this part, the focus is to unpack how simple the structure section is from the test takers' point of view from both paper and computer. To sum up the resemblance, the diagram explains explicitly in portion.
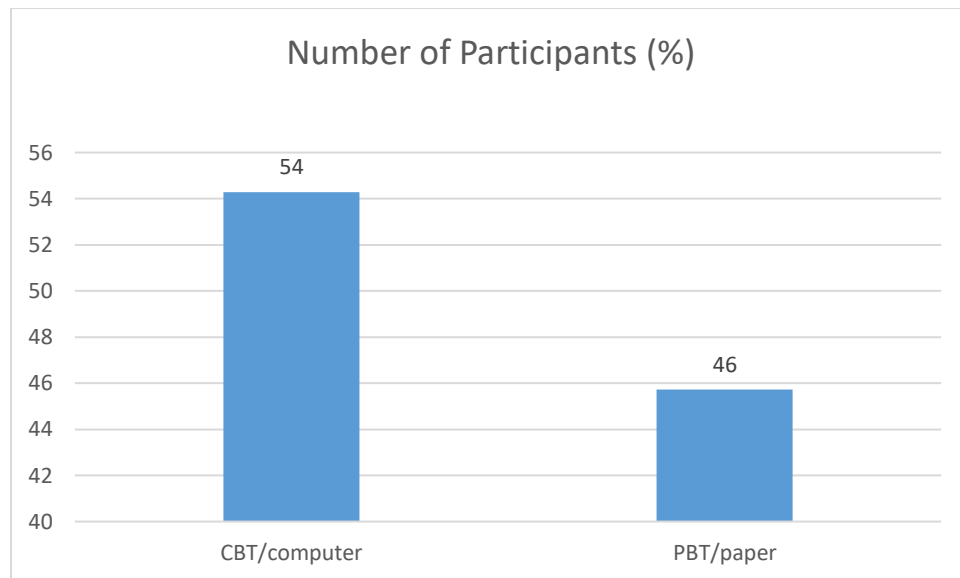


Diagram 5. The simplicity of the structure section between TOEFL PBT and CBT

54% of people believe doing a structure test on a computer is more desirable. This judgment develops from some assumptions. For instance, the written questions indicate more clearly on a computer screen than on the printed-paper. The lighting of the computer also gives a significant advantage when doing the structure and written test. The accessibility of exploring the questions on screen is much more effective because the test takers can scroll easily and jump from one question to another one. The authenticity of answers and the accuracy of the virtual test contributes positively based on the test takers' inference.

However, 46% of participants who preferably conduct the test on the printed sheet also possess supporting arguments. The capability of reading the structure test on paper and conferring some notes on the specific questions become their rationales on why they crave TOEFL PBT. To reinforce, they asserted that the longer they see the screen, the more painful their eyes are. The exhausting eyes caused by gazing at the computer for an extended period induced the participants to feel physically tired. In addition to the previous point, the test takers profess they could analyze and comprehend the questions of the structure better on paper for the TOEFL test.

The last point presents reading as the third section of the TOEFL test from the participants' sight. At the test center, the participants perform the reading part on paper. The 55 minutes is given time to complete 50 questions of reading. This reading section is only allowed to open as soon as they wrap up section two of the structure. They can access any passage they want to read by simply flipping over the test paper. While for at-home TOEFL test, the reading texts would be presented on screen. Every article showed up in order and conformed to every single question. For example, the second passage would appear when the participants

accomplish the first reading with all its 9 or 10 questions. To deliberate the objective of readability from the media of paper as well as computer, a diagram of information is displayed below:
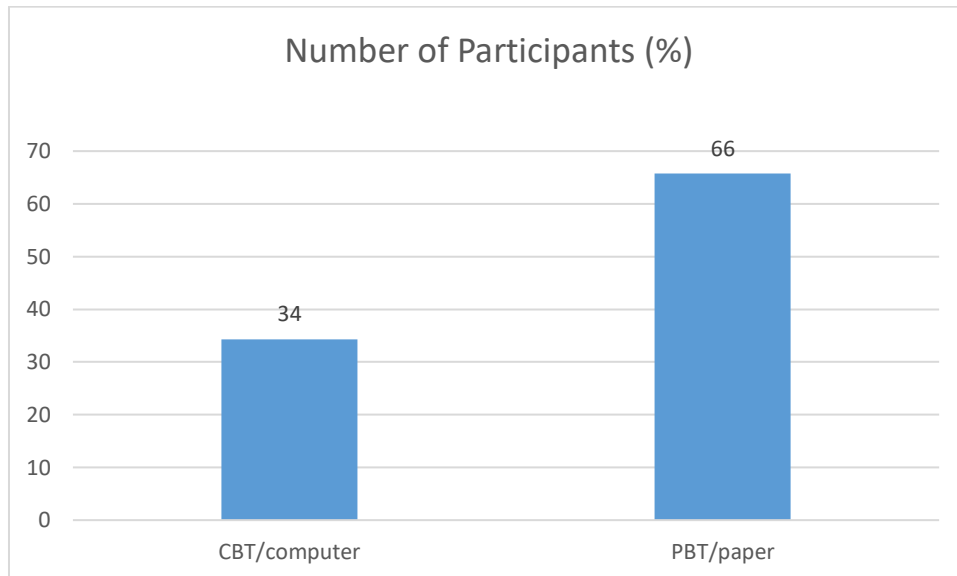


Diagram 6. The readability between TOEFL PBT and CBT

Contrasting with the former outcomes, which promote computer-based-test of TOEFL, the reading section in offline test wins more percentage with 66%. Unlike other feedbacks, which underpin the CBT, the point regarding readability encourages the reading section by using test sheet. The test-takers reinforced this by showing the constructive argumentation. They affirmed that the reading section requires high concentration, which would be more practical if done through a paper. They also emphasized that discovering the main idea or main topic of each passage is more accessible when reading the texts on printed paper. The confusion of discovering lines on the screen precipitated another drawback of understanding an article. The test-takers once reaffirmed their view by pointing out that reading a printed passage makes them more pleasant identifying the answer key and prevents their eyes from irritation and pain.

Additionally, by using paper they can put a sign on the referred keyword that they need to read more detail. Scanning passages on paper and turning over the readings helped the participants focus more on the text. However, the proponents of CBT in the reading section argue that the reading habits on-screen also influences the comfort of TOEFL reading as well. These participants who get used to reading e-books or PDFs, experience the efficiency of TOEFL reading by scrolling up and down on the screen. They claimed that passages shown on screen have consistent font and size of the characters. By clicking the number button, test takers perceive they can simply review and return to the doubted answers on the screen rather than on paper.

In addition, to uphold the results above, the score of TOEFL PBT as well as TOEFL CBT is revealed. This is to display the score gap between those two TOEFL varieties. For further data, the following graphic presents the difference between score from both TOEFL versions.
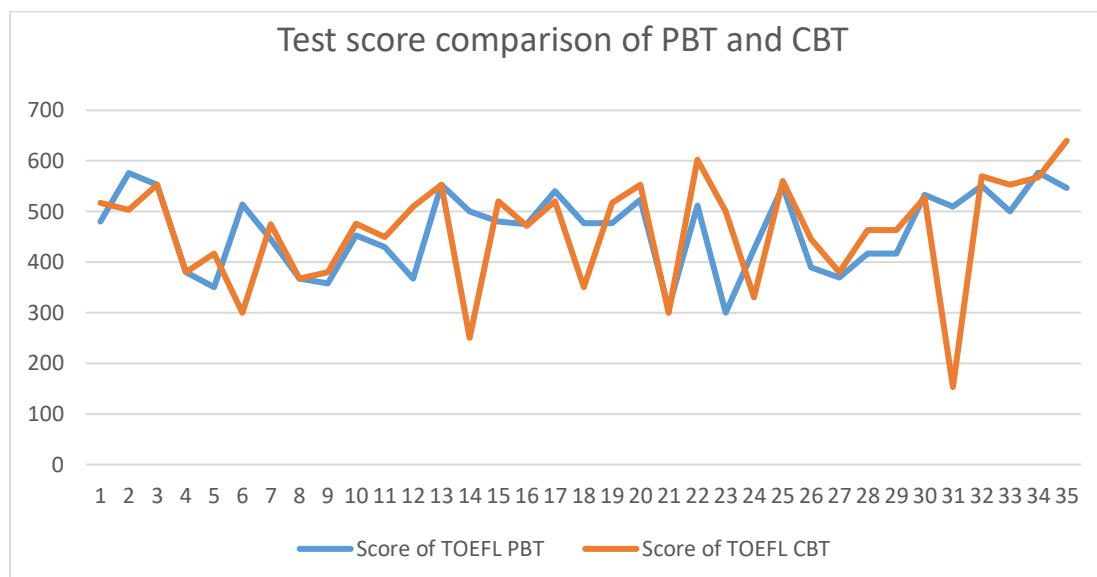
Graphic 1. Score comparison between paper-based and computer-based TOEFL

The graphic states that 20 participants acquired higher score in TOEFL CBT than TOEFL PBT. This somehow supports the former result, which mostly sides with CBT. As the data mentioned earlier displays, the at-home TOEFL test gains more percentage than offline TOEFL at the test center regarding contentment, efficacy, and complaisance. In addition, from the test-takers' perspectives, listening and structure sections perform much better on the computer screen than on paper. However, the point of view in the reading section disputes the preceding result.

## 4. CONCLUSIONS AND SUGGESTIONS

To summarize this study, the computer implementation of TOEFL ITP brings more benefits than its drawbacks. More test takers agreed that the TOEFL CBT is more conducive, compelling and flexible regarding place and time. Furthermore, from the point of view of test takers, the listening and structure section performed more excellent on a computer screen. On the other hand, the reading section disputed the result of the previous two sections. More number of participants perceive complacent to reading on paper than on screen. Therefore, CBT takes the most significant percentage on listening and structure; the TOEFL PBT takes the majority in the reading section.

Since the result of this study is still general in discussing the TOEFL ITP test, further investigation related to specific sections on TOEFL ITP is highly recommended. The future researcher can observe deeper on each section from media usage perspectives. Moreover, it will be a great idea if the future study investigates the comparison between two or more online language tests such as IELTS and TOEFL IBT or the validity between Duolingo English testing with TOEFL IBT

The implications of this study are advantageous for some stakeholders. For the students, the outcome of the study is enormously beneficial to see the diverse perspectives about TOEFL ITP on paper-based and computer-based before taking the official test as a reference. This will assist them in deciding the proper learning strategy for the desired test. For the English teacher, this research can help them in applying the most appropriate way of teaching TOEFL ITP and preparing for the student' language assessment in their classroom. In addition, for the school boards or English institution

owners, this study might be taken as consideration for conducting TOEFL test for the students, teachers or staffs at their schools.

## 5. AUTHOR STATEMENT

The author declares that there is no conflict of interest regarding the publication of this article. The author confirms that the article manuscript is free from plagiarism.

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