



Need Analysis for a Web-Based “TOEIC Prediction” Application to Optimize Students’ English Proficiency

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Abstract. *This study analyzed the demand for a web-based "TOEIC Prediction" program for Politeknik Negeri Sriwijaya students to improve their English skills. While TOEIC is a globally recognized test that assesses English competence, students' options for TOEIC preparation are limited in terms of accessibility, structure, and relevance. This study used qualitative research methods, including interviews and questionnaires, to investigate students' experiences and demands for a TOEIC simulation platform. The results show that the current learning materials are expensive, out-of-date, and lack timed practice simulations. Students indicated three key objectives for the web-based platform: affordability, structured practice, and comprehensive feedback mechanisms. The findings highlight the importance of developing an accessible, time-based, feedback-driven application to help students prepare for the TOEIC. Implementing such a tool will significantly improve students' test-taking skills and overall TOEIC performance, in line with the institution's goals of producing globally competitive graduates.*

Keywords: *Need Analysis, TOEIC Prediction, Application, English Proficiency*

1. Introduction

Politeknik Negeri Sriwijaya (Polsri) 2020–2024’s Strategic Plan (RENSTRA) states that the institution is aimed to be “leading and distinguished vocational education institution,” Polsri keeps working to raise the caliber of its graduates so they may compete on a national and international level. Polsri works to improve students’ writing and speaking skills in active English as one way to accomplish this goal. All students must take the Test of English for International Communication (TOEIC) in their final semester before graduating, according to a policy put in place by Polsri. Students who pass this exam and receive their certificate may find it helpful when applying for jobs domestically and overseas, taking part in internships (like IISMAVO), and going back to school (for example, D4 programs for D3 graduates or applied master’s programs for D4 graduates).

TOEIC aims to assess students’ English proficiency. It has been used in over 160 countries, with over 14,000 organizations applying it. Moreover, it serves to measure English competence on a global level as it is reliable and comprehensive. It provides essential information for various industry needs. TOEIC is divided into two sections: listening and reading. The first section is a listening test consisting of 100 multiple-choice questions for 45 minutes. Meanwhile, the second section is a reading test that also

consists of 100 multiple-choice questions and lasts 75 minutes. The total time for the entire test is 120 minutes (ETS, 2022).

Today, paid learning resources for TOEIC practice are available, but most of them are sample questions that aren't structured to look like real tests (Chandra, Dwiyani, & Huda, 2017). It might be challenging for students to obtain simple and affordable access to several practice tools because they are paid for, including books and applications. Naturally, this prevents students from receiving organized practice using timed questions that accurately reflect the exam.

Based on the above background, this study aimed to assess the learning resources required by Politeknik Negeri Sriwijaya students to improve their TOEIC results. As a result, the following three research questions are formulated: 1) Given the lack of structured and timed practice, how effective are the currently available TOEIC learning tools in preparing students for the actual TOEIC exam? 2) How much demand for a web-based TOEIC simulation application that provides Politeknik Negeri Sriwijaya students with organized, timed, and free TOEIC practice? 3) What features and requirements are required for creating a web-based TOEIC practice platform that meets the demands of students at Politeknik Negeri Sriwijaya?

2. Literature Review

2.1 Technology and Language Learning

In recent years, technology has changed how students study languages, and web-based tools are now an essential aspect of modern education. Asynchronous learning is made possible by web-based systems, which provide adaptable, user-friendly settings where students can access material whenever they want (Lin & Warschauer, 2015). These tools frequently include interactive aspects such as quizzes, video lectures, and real-time feedback, making language acquisition more dynamic. These platforms provide students with access to many authentic language materials, which are essential for developing language abilities in real-world circumstances (Chapelle & Sauro, 2017).

Constructivist learning theories, which emphasize active learning and engagement, also lend support to the usage of web-based language tools. These platforms allow learners to immerse themselves in the target language and culture, which aids in the internalization of language rules and structures. Furthermore, web-based platforms promote independent learning, allowing students to take control of their progress, which is especially significant in language acquisition where constant practice and engagement are essential.

In addition, simulation-based learning platforms are an effective tool for students to prepare for language proficiency examinations like the TOEIC. These platforms offer mock exams that closely resemble the format, substance, and timing of actual tests, allowing students to become accustomed to testing settings (Wang & Zhao, 2019). By imitating the actual test setting, students can practice time management, a critical ability in standardized language tests such as the TOEIC, where speed and precision are required for success (Pappas, 2018). The fact that students get quick feedback after finishing practice tests is another important benefit of simulation-based learning. Since it allows students to rapidly identify their strengths and weaknesses,

instant feedback is crucial for effective learning and facilitates focused study sessions (Hattie & Timperley, 2017). Research indicates that students who prepare for exams using simulation-based platforms do better academically and have lower levels of anxiety than those who employ conventional study techniques (Fang & Chang, 2020). By mimicking the exam environment, these platforms not only increase subject familiarity but also reduce test-day anxiety and increase confidence in general.

Several studies have demonstrated the effectiveness of web-based TOEIC practice programs in boosting student performance. For example, Chandra, Dwiyani, and Huda (2017) discovered that students who used web-based TOEIC simulation tools scored much higher on the actual exam than those who relied entirely on textbooks and traditional preparation materials. The researchers discovered that students profited the most from features including scheduled practice sessions, timed exercises, and detailed feedback, all of which helped them better manage their study time and focus on areas for growth.

Similarly, Lee and Kim (2021) investigated the effects of an interactive TOEIC simulation platform on student test preparedness. According to the findings, students who routinely used the platform to take practice exams performed better on the TOEIC test. Furthermore, the study found that timed reading and listening sections were the most popular aspects, as they helped students build endurance for the 120-minute exam. Immediate scoring was also cited as an important learning tool, allowing students to track their progress and alter their preparation tactics accordingly.

2.2 TOEIC

The Test of English for International Communication (TOEIC) is a widely accepted assessment tool for assessing English language competency, especially in professional and industrial settings. Since its inception, TOEIC has been used by over 14,000 businesses worldwide and is used in over 160 countries to evaluate non-native English speakers' language skills during routine business contacts (ETS, 2022). Its importance arises from the growing demand in international businesses, particularly in the hospitality, commercial, and technology sectors, for workers to exhibit good English language proficiency. Because it is occasionally required for job applications, promotions, and even academic possibilities, the TOEIC is positioned as a critical element in both professional and academic advancement (Chia & Chia, 2020).

The TOEIC Listening and Reading test, which focuses on receptive language abilities, is a crucial part of this assessment. As shown in Fig. 1, test-takers encounter a broad range of spoken English during the 45-minute listening portion, from question-response exchanges to more intricate dialogues and monologues. The range of listening resources is designed to mimic real-world work environments where employees might need to follow instructions, participate in meetings, or interact with clients (Zhang, 2018). Despite the test's broad acceptability, there have been concerns raised about the listening materials' validity. Some scholars argue that the scripted nature of the talks does not adequately represent the unpredictability of communication in the actual world (Lougheed, 2016). Nevertheless, in a controlled testing environment, the TOEIC provides reliable assessments of English proficiency.

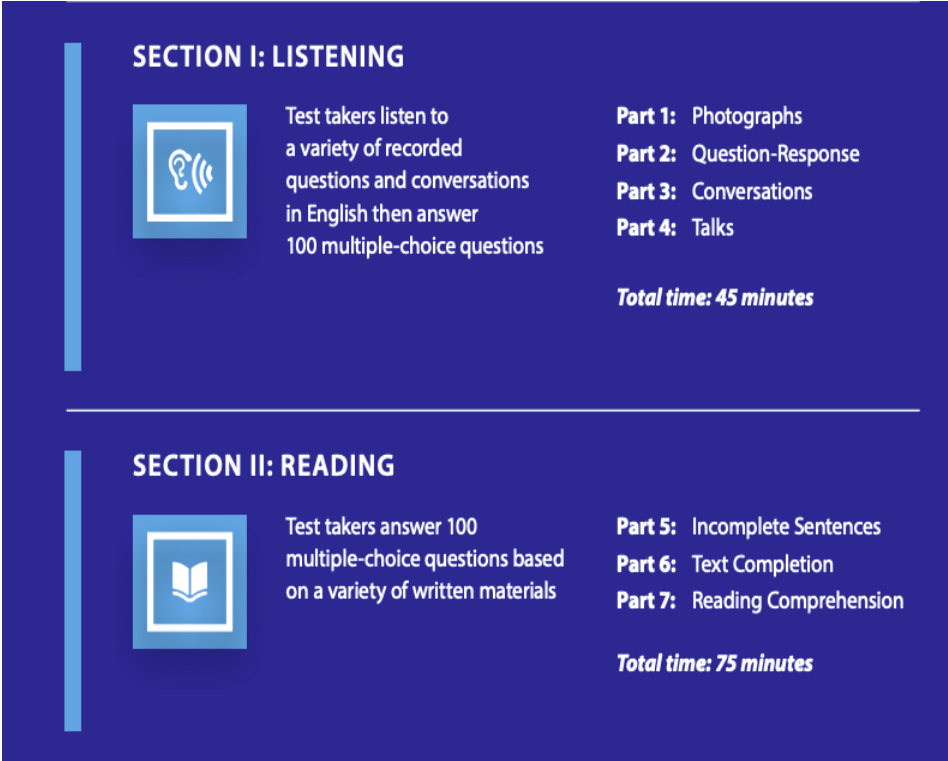


Fig. 1. TOEIC Format and Content
Source: ETS (2022)

The 75-minute reading portion evaluates a candidate’s comprehension of written English, a crucial competence in fields where reading reports, emails, and manuals is a regular task. With a total of 100 questions, the component is broken up into three sections: reading comprehension, text error identification, and sentence completion. According to recent studies, a lot of test-takers have trouble managing their time in this portion since there are so many questions to answer in a short amount of time, which might result in hurried or incomplete replies (Kim, 2019). Furthermore, questions have been raised regarding whether the exam evaluates communicative skills or just grammar memorization due to the emphasis on grammar and syntax in the sentence completion and error identification sections (Mahmud, 2021). Despite these concerns, TOEIC’s structured approach to testing reading skills continues to be a reliable indicator of proficiency for many organizations and institutions.

Digital TOEIC preparation tools have been developed recently as a result of technological improvements. These programs try to replicate the test experience more closely and offer more cheap options for preparation than traditional approaches. Research has demonstrated that by acquainting test-takers with the style and time limits of the exam, organized, scheduled practice—particularly via web-based platforms—can considerably enhance their performance (Chang & Park, 2017). However, availability and cost are frequently barriers to using these tools, especially in

underdeveloped nations where students do not have the money to pay for premium content. Consequently, there is a rising need for more easily available and reasonably priced internet resources that may provide thorough TOEIC preparation (Shin, 2020). To provide equitable opportunity for test takers, particularly those from underprivileged backgrounds, this gap must be closed.

3. Research Method

In order to better understand the needs and challenges faced by Politeknik Negeri Sriwijaya students in their efforts to raise their TOEIC scores, as well as to look into the necessity and key components of a web-based TOEIC simulation platform, this study used a qualitative research approach. Because it enables a comprehensive analysis of students' experiences, perceptions, and opinions regarding the TOEIC learning resources now in use as well as their expectations for an online platform that can improve their preparation, the qualitative technique is suitable for this study (Creswell, 2014). This strategy is appropriate since it enables the researchers to fully examine students' opinions and sentiments, which is essential for comprehending the arbitrary elements that affect TOEIC preparation (Denzin & Lincoln, 2018). The study can give a complete picture of students' needs and the limitations of current tools by using questionnaires and interviews. Qualitative research is appropriate for exploring complex phenomena like language learning and test preparation because it allows for flexibility in examining new themes that may develop during data collecting.

Participants

Fifty students from Politeknik Negeri Sriwijaya representing a variety of majors made up the research sample. This sample was chosen from among the greater number of Politeknik Negeri Sriwijaya students who had to take the TOEIC exam in order to complete their coursework. Students preparing for the TOEIC were chosen using a purposive sampling technique since they would offer pertinent information about the usefulness of the TOEIC learning resources currently in use as well as the possible benefits of a web-based simulation platform (Palinkas et al. 2015). A sample size of fifty students was thought to be sufficient for recording a range of viewpoints while remaining controllable throughout the data collection and processing process.

Data Collection Methods

The data was gathered using three basic qualitative methods: interviews and questionnaire distribution. These strategies were chosen to triangulate data sources, increasing the reliability and validity of the results.

Interviews

Semi-structured interviews were done with a subset of ten students from the larger sample. This method provided for a thorough examination of students' experiences with the available TOEIC learning materials, as well as their perceived problems in test preparation. Semi-structured interviews provide more flexibility in leading the conversation while yet allowing participants to express themselves freely (Kvale and Brinkmann, 2015). The interviews included questions about the effectiveness of present tools, obstacles in accessing practice materials, and what they expect from a web-based TOEIC simulation platform.

Questionnaire Distribution

The entire sample of fifty students was given a questionnaire to complete in order to gather more data regarding their experiences preparing for the TOEIC. To gather both quantitative and qualitative data, the questionnaire had a combination of closed-ended and open-ended questions. While open-ended questions gave students the opportunity to elaborate on their preferred online simulation tool, closed-ended questions concentrated on the frequency and kind of TOEIC preparation resources used.

Data analysis

Thematic analysis was utilized to evaluate the data, which was a widely used method in qualitative research for detecting, interpreting, and reporting patterns or themes within data (Braun & Clarke, 2006). Thematic analysis enables the researchers to code and organize data from interviews and questionnaires, into relevant themes about the effectiveness of current TOEIC learning tools, demands for a web-based platform, and the main features required for such a platform.

4. Result and Discussion

Effectiveness of Currently Available TOEIC Learning Tools in Preparing Students for the Exam

The effectiveness of the current TOEIC learning resources is seriously called into question by the insights that students have gained from questionnaires and interviews. Many students stated that traditional textbooks and online question banks were their main resources for TOEIC preparation. Although these resources provide some basic information, they usually don't offer the thorough and organized practice needed for effective test preparation. The fact that these resources were outdated and might not fully represent the structure and subject matter of the TOEIC exam today was one significant disadvantage.

Furthermore, students expressed dissatisfaction with the restricted availability of free resources, as many online question banks and practice tools cost payment. This circumstance presents difficulties for students lacking the financial resources to access premium information. The scarcity of cheap, high-quality practice materials exacerbates the difficulties students have in fully preparing for the exam.

Additionally, the lack of a structured, timed practice setting hinders students' preparation efforts. Traditional ways of studying through books and individual online exercises cannot simulate exam situations, which might result in poor time management skills on the actual test. As Lee and Kim (2021) point out, being unable to rehearse under timed settings can have a negative impact on students' performance since they may struggle to spend their time properly during exams. As a result, many reported feeling unprepared and scared when faced with the actual TOEIC exam.

Based on the data gathered, the currently available TOEIC learning tools are insufficient for preparing students for the exam due to their limited scope, obsolete content, and lack of a simulation-based practice setting. To improve TOEIC preparation at Politeknik Negeri Sriwijaya, there is a clear need for more effective, accessible, and current learning tools that may give structured and timed practice. Addressing these gaps will be critical to boosting students' TOEIC exam scores and, eventually, their

English language competency.

Demand for a Web-Based TOEIC Simulation Application Among Sriwijaya State Polytechnic Students

The analysis of student interviews and surveys at Sriwijaya State Polytechnic (Polsri) indicated a notable need for a web-based program that simulates the TOEIC. The input gathered brought to light several important requirements that students had for their TOEIC exam preparation as shown in Table 1.

Table 1. Requirements for a web-based “TOEIC Prediction” application

No.	Requirements for “TOEIC Prediction” application	Description
1.	Accessibility and affordability	ensuring that there are no financial obstacles preventing students from simply accessing the application
2.	Structured Practice	giving students practice resources that closely mimic the structure of the real TOEIC test so they may study efficiently.
3.	Comprehensive Feedback	providing prompt, thorough performance evaluations so that students can monitor their development and pinpoint areas in need of improvement

Based on Table 1, there are three requirements found for the “TOEIC Prediction” application, including 1) accessibility and affordability, 2) structured practice, and 3) comprehensive feedback. Regarding the first requirement, many students complained that the resources available for preparing for the TOEIC are currently scarce and frequently expensive. According to Chandra, Dwiyani, and Huda (2017), students’ preparation efforts are hampered by the absence of easily accessible and reasonably priced materials. To ensure equitable learning opportunities, the majority of participants indicated that they would prefer a web-based application that provided free or inexpensive access to practice resources.

The second requirement for a proper “TOEIC Prediction” application is structured practice. Students acknowledged the value of having practice materials that are similar to the actual TOEIC format. According to the responses, there is a need for an application that offers structured practice exams with timed sections, allowing students to become acquainted with the testing environment. In addition, virtual testing environments can boost student performance while also reducing anxiety during actual exams.

The last requirement is comprehensive feedback. Participants stressed the importance of receiving immediate and detailed feedback on their performances. This would allow students to assess their strengths and weaknesses in certain sections of the TOEIC exam. This feature is not available when students do practice using traditional textbooks. Therefore, the findings show a strong desire for a web-based TOEIC

simulation tool that is adapted to the specific demands of Polsri students. The desire for accessibility, time-based practice, thorough feedback, and interactive elements emphasizes the importance of designing an application that not only fits educational standards but also effectively engages students. Therefore, a well-designed TOEIC simulation program could considerably improve students’ preparation experiences, eventually leading to better TOEIC exam results and more chances for future work and education.

Essential Features for an Effective Web-Based “TOEIC Prediction” Application

The examination of students’ requirements and preferences for a web-based TOEIC practice platform produced some crucial features and specifications that would greatly improve the application’s efficacy. The results show that these characteristics not only support students’ learning goals but also make preparation easier and more effective.

Table 2. Essential Features of “TOEIC Prediction Application

No.	Essential Features of “TOEIC Prediction Application	Description
1.	General information about TOEIC and scoring	gives users a comprehensive grasp of the scoring criteria and exam structure
2.	Time-Based Reading and Listening Practice	mimics the actual TOEIC test atmosphere by offering scheduled practice sessions intended to improve students' time management abilities. The reading portion takes 75 minutes to complete and has 100 questions, while the listening portion takes 45 minutes and has 100 questions
3.	Import Questions by Excel	gives users the ability to submit custom practice question sets, allowing them more flexible learning alternatives
4.	Immediate Scoring and Detailed Reporting	provides thorough performance analysis and immediate feedback, assisting students in tracking their progress and identifying areas for growth

General TOEIC and scoring information is the first feature. Students expressed a strong desire for comprehensive information regarding the TOEIC exam, including its structure, evaluation criteria, and the implications of test results for their futures in education and the workforce. It is feasible to reduce anxiety and improve TOEIC preparation by outlining the exam procedure and providing resources and clear explanations (Knoefler et al., 2019). Including instructional materials about the test's format and scoring procedures can help students better comprehend what is expected of them.

Time-based reading and listening exercise is the second feature. Time-based practice sessions for the reading and listening portions were deemed a crucial component by the participants. Replicating this environment during practice sessions might help students enhance their time management abilities and lessen test anxiety, as time constraints are a significant factor in the TOEIC exam (Pappas, 2018). Students can improve their exam preparation by participating in timed activities that replicate the TOEIC exam environment.

Participants anticipate that the application will allow them to import questions using Excel for the third functionality. This feature suggests that more customized and adaptable learning options might be available if practice questions could be imported using Excel. This feature would allow students and instructors to tailor their practice sessions to specific topics or areas that require improvement.

For users, the final feature's instant rating and thorough reporting are essential. Students emphasized the importance of getting thorough performance reports and prompt feedback following practice exams. Since it enables students to promptly recognize their strengths and weaknesses, immediate feedback is essential for successful learning (Hattie and Timperley, 2017). Performance data from different exam sections, comparisons to previous attempts, and suggestions for additional study should all be included in thorough reports. This feature encourages continuous improvement in addition to making self-evaluation easier.

The findings show a clear consensus among students on the fundamental features and requirements for an effective web-based TOEIC practice environment. Incorporating general facts about the TOEIC exam will provide a solid foundation for decreasing anxiety and improving performance. Furthermore, timed practice sessions will simulate actual test settings, allowing students to establish effective time management tactics for the exam. The option to input questions from Excel creates a personalized learning experience that caters to each student's specific needs, whereas immediate grading and thorough feedback encourage iterative learning and continual development. By addressing these features, the suggested “TOEIC Prediction” platform can greatly improve student preparedness, resulting in superior TOEIC exam results.

5. Conclusion

The purpose of this study was to determine the requirements and key features for a web-based TOEIC practice platform for Sriwijaya State Polytechnic students. Based on qualitative research involving interviews and questionnaires, the findings show that current TOEIC preparation resources are insufficient due to limited accessibility, a lack of structured practice environments, and the absence of comprehensive feedback systems. These resource shortages highlight the need for a TOEIC simulation platform that is more accessible, flexible, and structured to meet students' preparation needs.

The study determined that three essential elements—affordability and accessibility, organized practice, and thorough feedback—should be incorporated into the suggested TOEIC simulation program. Students emphasized the necessity for a platform that provides for customized preparation through question import options in addition to simulating the real TOEIC exam environment with timed parts. It was

determined that prompt grading and comprehensive performance reports were essential for tracking advancement and pinpointing areas in need of development.

In conclusion, developing a web-based TOEIC practice platform that incorporates these crucial components would significantly enhance students' performance and readiness for the TOEIC exam. In addition to helping Sriwijaya State Polytechnic meet its strategic objectives of increasing students' English proficiency, this platform would be an essential tool for them to compete in both domestic and international job and educational markets. The findings of this study provide a solid foundation for developing a practical and effective TOEIC practice tool, which will eventually help students prepare for the exam.

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