Research Article

The Development of an "Absyak" Application for ESP Learning: Insights from Indonesia

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There has been a dearth of studies exploring the development of online learning platforms in Indonesian ESP classes in recent years. To fill such a lacuna, the present study was designed to develop an online learning application for pharmacy students in their ESP learning in an Indonesian higher education setting. Encapsulated by Gall, Borg, and Gall's (2003) Research and Development (R&D) model, the study's findings showcase that (1) the application, named "Absyak," has been successfully developed at the design stage based on the needs analysis; (2) the variables of material, media, and student responses on learning have been validated and corrected according to the suggestions of two validators as media experts and three validators as material experts; (3) responses from 30 students showed that the indicators for each variable were valid, reliable, and very feasible to implement; and (4) the implementation phase with 60 students indicated that the developed material effectively enhanced the pharmacy students' English speaking skill. Implications from this study are offered at the end of this article.

1. Introduction

In the last decades, the teaching of English for Specific Purposes (ESP) has received mushrooming attention from language scholars, be it in the context of English as a Foreign Language (EFL) or English as a Second Language (ESL) [1, 2]. Since the emergence of English as a global lingua franca, ESP has established itself as a distinguishing feature of learning English as an additional language, and its significance has grown. For example, the increasing demand for English as a medium of communication combined with the introduction of mass education programs in an environment where English is the first or even the only language contributed to the rapid expansion of ESP in English for Academic Purposes (EAP), which was originally part of ESP category itself [3].

The sole purpose of making an effort and making a conscious decision to learn is to improve the quality of learning itself. Many learning models have been set out, ranging from face-to-face meetings with students at the beginning of the learning process to the point where online learning is exclusively enacted. With the rapid advancement of information and communication technology, traditional classroom teaching is now replaced by self-directed learning. It is also geared due to the increasing popularity of e-learning in education, made possible with the ease with which students can now access the internet. In the era of digitalization, technological advances will undoubtedly accelerate the pace of growth, enabling students to study more effectively and efficiently than ever before. To obtain learning resources, one way is to use the internet as one of the available options. The use of e-learning in this context, which is based on blending learning, does not only apply to distance classes, but also has the potential to be developed into a useful tool for traditional education systems as well [4].

The learning objectives for ESP are geared toward topics and texts that are relevant to students' field of study or work. It is well known that ESP is concerned with linking the English teaching and learning process with the students' communicative needs. If we understand why learners need English, the content of the language can be adapted to meet their needs, and the teaching process will be centered on these requirements [5]. As multiple different perspectives on defining needs exist, assessing learners and their needs can be a difficult task to complete. Needs should be stated in goals and objectives, which can then serve as the basis for the development of tests, materials, teaching activities, and evaluation strategies, among others. The two are interrelated in needs analysis, which focuses on proficiency goals (which refers to mastering the four language skills: reading, writing, listening, and speaking), and material evaluation goes hand in hand in needs analysis determining the needs of a defined group of people and evaluation of helpful materials. Teachers determine the extent to which materials, tests, or the entire program meets these needs [3].

Previously, Poedjiastutie and Oliver [6] argue that as a form of student service to learn English and in improving language skills where students need English for certain purposes, ESP is a solution that can be used and applied in the classroom. In terms of the objectives, ESP is more focused on preparing students in certain contexts, for example, students in the fields of pharmacy, health, or even medicine. Because ESP is intended as an introduction to certain courses in its implementation, students are expected to have the ability to read reference books or literacy skills in English. Furthermore, in learning English, the ability to speak as one of the learning objectives of ESP for pharmacy students is essential. The ability to speak English plays an important role in learning English where students are expected to practice what they have learned from the classes and generate a large amount of information that can be used in the future. Speaking also helps in the development of certain types of skills in learners. By so doing, teaching speaking is intended to yieldcommunicative skills among learners, make them aware of what they need in practice, and help them interact and communicate more effectively with others [7].

Although previous studies on ESP learning have been widely enacted [2, 8, 9], little is known about the development of learning applications for ESP students. It is important to note that learning application is part of Technology-Enhanced Language Learning (TELL) idea. It functions as students' personalized learning environment that could help improve their autonomous learning [10].

Our initial interview and observation were conducted with a group of EFL students,in a Health College in East Java Province of Indonesia, asking the factors that canhelp improve their skills and confidence in speaking English. The interview and observation revealed that the development of confidence and the opportunity to speak was among the most common responses. Mostly, students lack confidence in speaking English due to limited ability in vocabulary and the absence of appropriate media during lectures as the learning materials to improve their speaking skills. These initial responses together with studies on how to improve the development of confidence, fluency, and speaking accuracy were used as the basis for course design and the basis of developing this research. Therefore, considering the high demand for pharmacists who can speak English as a communication skill and the current rapid development of technology, we are interested in developing e-learning media for pharmacy students in order to help them in the ESP learning. To maximize the benefits of the course, this research was designed with the principles and activities of regular speaking for the development of "Absyak" application to improve speaking skills of Indonesian pharmacy students. "Absyak" application is a design for developing an e-learning model based on the Learning Management System (LMS).

1.1. Theoretical Frameworks

1.1.1. Technology-Enhanced Language Learning.
A growing body of research has discussed issues surrounding Technology-Enhanced Language Learning (TELL). Recent research in this area has contributed significantly to the use of learning applications in English classes such as augmented/virtual reality [11], wearable computing [12], mobile applications [13], cloud-computing applications [14], social media [15], and big data processing [16]. More recently, the development of several other learning media such as flipped classrooms [17] and gamification [18] added the urgency of putting TELL as a leading issue in second language learning research. Previous research by Chen [19] explored the use of TELL in alleviating EFL students' public speaking anxiety. In his research, Chen revealed that the traditional classes create speaking anxiety among EFL students. The study unpacked that Artificial Intelligence (AI), Automatic Speech Analysis, and Virtual Reality (VR) could improve students' personalized learning experiences, thus leading to minimized-speaking anxiety during the class. In the same vein, Chang and Hung's [20] meta-analysis study showcased that technology could enhance second language acquisition among learners. In the present study, we developed a new online learning application under the TELL framework to support Indonesian pharmacy students' English learning activities.

1.1.2. English for Specific Purposes in Indonesia.
A recent study on the teaching of English for Specific Purposes (ESP) in Indonesia informs that teachers who teach this approach face myriad challenges, such as lacking knowledge of students' field of study, lacking ESP training, lacking proper needs analysis, large classes, and various learners' English competencies [21]. In fact, ESP is taught by general English teachers in Indonesia. Other studies also confirm that general English teachers who teach ESP tend to encounter challenges in their professional careers [22–24].

1.1.3. "Absyak" as a Learning Application. "Absyak" application is an e-learning or Moodle-based Course Management System (CMS). Through "Absyak" application, the e-learning process is designed as a set of processes and applications related to learning and training through computer-based learning, onlwhich will help them recine, virtual classes, and other digital collaborative learning for college students.The e-learning focus is on online English courses. It applies the most modern technologies, focusing on developing communication skills by encouraging students to practice speaking with an English instructor every day, following topics related to life and work. With the implementation of online learning through "Absyak" application, it will offer a different way of learning, where students can practicewhich will help them rec with the English lecturers even though they do not understand the theory in depth, followed by exchanges and discussions with classmates and lecturers , which will help them recognize their mistakes and then the teacher will evaluate their performance in class. After that, the lecturer will summarize the lesson, and finally, students will take a periodic exam to find out their current level of English.

"Absyak" application is a new technological innovation that is appropriate to be used in the education world. The potential of e-learning through "Absyak" has provided support with real strategies and infrastructure through ICT and e-learning frameworks. Within this framework, students are allowed to improve their studies by accessing knowledge from every part of the world through digital learning [25]. A myriad number of studies on ESP learning have been carried out recently. To begin with, the principles and methodological approaches to ESP materials, development, and exploration of the details of ESP material production were investigated [2]. In this research, the researchers emphasize that several principles must be followed by a learning media developer. First, the design of the ESP must be appropriate to the students' discipline. Second, in teaching ESP, more authentic learning media should be used. Similarly, another study was also conducted on ESP learning which plays an important role in students' learning progress because they use more technical terms than English students other than ESP. Situated in an Indonesian setting, research on the development of task-based learning media in ESP was conducted by Mulyadi et al. [26]. The study examined the impact of TBLT on ESP learners' listening comprehension and speaking performance using a quasiexperiment with nonequivalent (pretest and posttest) control-group design. Findings from the study revealed that the technology significantly developed the learners' listening comprehension and speaking performance.

1.1.4. Situating Previous Studies on Online Learning Applications. There has been a great interest in researching online learning media in English language teaching recently. We tried to document the most recent studies on the use of online learning media in ESP classes. First, basing their study in Taiwan, Su et al. [27] carried out action research in order to explore the impact of online writing platform on 49 students'

writing skill. Findings from the study documented that the students' writing skill developed significantly after learning using the online writing platform. The study also revealed that the students preferred learning using online writing to the traditional writing. Second, Xu et al. [28] studied the integration of Learning Management System with Personal Learning Environment to train ESP teachers in China. Under an exploratory research paradigm, the study showcased an advancement in the teachers' ESP teaching skills. Results from this study are applicable for ESP teaching, particularly in the English as a foreign language context.

Although the recent studies have attempted to explain the benefits of using technology in language learning, little is known as to how the development of an online learning application helps ESP students in their classes. Particularly, very scant attention is addressed to the materials development aspect in ESP learning. To fill this lacuna, our study focuses on developing an online learning platform, namely, Absyak application. The exploration starts with a field observation for a need analysis. It is then followed by the development processes, tryout enactment, and product testing.

2. Method

2.1. Research Context. This study was done in a pharmacy department of a Health College based in East Java Province, Indonesia. Thirty students in the department were recruited to share their perspectives and responses to the developed product. In the department, English is learned for specific purposes, that is, English for Pharmacy. Such a course is designed to help pharmacy students identify common English terms in their professional learning as pharmacists. English for Pharmacy is given two credits in the semester.

2.2. Design of the Study. The present study was carried out in an attempt to develop a learning application using Research and Development (R&D) approach [29]. R&D is generally employed to develop educational products and implement them in teaching and learning processes. Our study followed four common steps in the R&D approach; these are (1) conducting a need analysis, (2) developing the product, (3) enacting a tryout, and (4) examining the product's effectiveness.

This study employed both quantitative and qualitative data. The quantitative data were in the form of the percentage of questionnaire responses and the qualitative data were in the form of interviews with lecturers and students during field observation. At the outset, we began a preliminary study to document responses and perspectives for product development. Such a study was done by analyzing recent previous theories and conducting field observation. These steps aim at uncovering how lecturers and students envision ESP learning in their contexts.

2.3. Data Collection and Analysis. We disseminated a questionnaire to the pharmacy students with regard to their ESP learning in the class. Data from interview sessions with lecturers and 30 students were also documented. We also

analyzed lesson planning used in the ESP class. Our analysis showcases the inadequacies of learning applications that can help pharmacy students in their ESP classes. The data were analyzed using a descriptive quantitative approach.

The students were also asked to provide responses in the tryout phase. Their responses are documented using the criteria in Table 1.

Besides, Table 2 showcases the suitability criteria embedded in the developed product.

In addition, expert validation was also obtained by disseminating material and media validation (see Tables 3 and 4). It is essential to document the expert justification on the developed product as feedback from experts can be used as an additional consideration to revise the developed product.

In the implementation stage, the students were asked to respond to the aspects of the developed media. It was done to assess the effectiveness of the product in assisting the students in their ESP learning. Table 5 details the student response questionnaire.

3. Findings and Discussion

Findings from this study are detailed in four themes: (1) design of the learning application, (2) expert validation, (3) product tryout, and (4) product implementation.

3.1. Design of the Learning Application. During this step, we designed the "Absyak" application based on a previously developed needs analysis. We used the Moodle software to create "Absyak" application. So, "Absyak" Application can be used online. We validated the "Absyak" application to the validator after it is created; therefore, there is an improvement in terms of media content and features. Media on "Absyak" application was verified by media validators based on simplicity, integration, emphasis, balance, and color. Media on "Absyak" application has been approved by content validators in terms of content fidelity and language. The average value of the media feature validation of the two media validators is 3.90. With this validation value, the application that we have designed is already valid in terms of media features [30]. Additionally, we evaluate application with a content validator. The average validation score for content and language fidelity of the two content validators was 3.80. It was found that the "Absyak" application that we designed was also valid in terms of content validation and language proficiency.

In addition, we designed a website together with the help of IT practitioners as part of the development of the initial form of the developed product which is available and can be accessed through the link http://absyak-learning.com/ (Figure 1).

On the first page of the "Absyak" application website, there are several items, including a section containing information about users and passwords that can be used to gain access to "Absyak" application.

Table 1: Student response criteria.

Score	Criteria
4	Strongly agree
3	Agree
2	Disagree
1	Strongly disagree

Table 2: Percentage scale.

Achievement percentage (%)	Interpretation
76–100	Appropriate
56–75	Slightly appropriate
40–55	Slightly inappropriate
0–39	Inappropriate

3.2. Expert Validation. Referring to the results of the ESP learning media design for pharmacy students through "Absyak" application, the validation was carried out by five experts, consisting of two media experts and three material experts. Validation was carried out to determine the relevance of the material and product design whose feasibility can be known before testing is carried out on students. Based on Table 6, it can be seen that the results of media validation and material questionnaire materials, media, and student responses to learning are designed in the "Very Eligible" category.

In sum, the validators' assessment of the developed product is of "Absolutely Appropriate." The results of product assessments that reach a value of 81%–100% can be implemented directly without further revisions. In general, based on the results of media and material validations, it is known that the designed learning media is in the "Appropriate" category or is said to be "Appropriate" as an ESP learning material. Based on the validation results, the application that has been developed can be utilized in the implementation stage. Such experts' validations function as a gatekeeper for quality standard assurance in developmental research.

At the outset, comments and suggestions from the validators to improve the product quality were received and used accordingly. The "Absyak" application is designed as an interactive learning model by combining several components such as animated videos, interactive videos, pictures, audio, interactive quizzes, and writings that can make it easier for students in the learning process in theirpharmacy course to develop their speaking skills. The development of interactive learning media models can create two-way interactions, especially between users and the media, so that it alleviates students' anxiety in learning. In another word, learning using interactive multimedia can improve students' conceptual understanding and the use of interactive media can increase students' understanding, interest, and ability to speak.

The findings showed satisfactory results. The needs analysis carried out as pilot research provides suitable information for making decisions on the material developed in the current research [3]. Current R&D study has provided

TABLE 3: Material validation.

Aspects	Indicators
Content appropriateness	The material relevance to students Clarity of the material presented Material coherences The suitability of students' cognitive development and level of difficulty Practice questions according to competency The suitability of the material and student needs Material completeness The suitability of giving sample material
Language	Informative and communicative language Cognitive level compatibility with language
Visualization	Image suitability to the material Video suitability to the material

TABLE 4: Media validation.

Aspects	Indicators
Components of "Absyak" application	The attractiveness of opening display on ESP learning for pharmacy through "Absyak" application The suitability of the title with the interactive media content Clarity of instructions on ESP learning for pharmacy through "Absyak" application Completeness of interactive media identity in ESP learning for pharmacy through "Absyak" application The attractiveness of interactive media design in ESP learning for pharmacy through "Absyak" application
Display organizing	Ease of use of buttons on ESP learning for pharmacy through "Absyak" application The font and size are easy to read Attractive color display design The layout is appropriate and attractive
Interactivity	Interesting and easy-to-understand language Its use involves students
Overall rating	ESP learning for pharmacy through "Absyak" application attracts students' attention ESP learning for pharmacy through "Absyak" application as a learning resource ESP learning for pharmacy through "Absyak" application is tailored to the needs of students ESP learning for pharmacy through "Absyak" application supports the achievement of competency

TABLE 5: Student response questionnaire.

Aspects	Indicators
Components of "Absyak" application	Media display on ESP learning for pharmacy through "Absyak" application The suitability of the content of the material in ESP learning for pharmacy through "Absyak" application The animation presented in the ESP learning for pharmacy through "Absyak" application Clarity of image objects in ESP learning for pharmacy through "Absyak" application
Display organizing	The font and size are easy to read Attractive color display design The layout is appropriate and attractive Interesting song arrangement
Interactivity	Interesting and easy-to-understand language Its use involves students
Overall rating	ESP learning for pharmacy through "Absyak" application attracts students' attention ESP learning for pharmacy through "Absyak" application as a learning resource ESP learning for pharmacy through "Absyak" application is tailored to the needs of students ESP learning for pharmacy through "Absyak" application supports the achievement of competency

ready-to-use products. In addition, this research also provides literature enrichment that fills the gap in the need for ESP learning media which should be an interactive learning resource, not just a learning medium and can be followed by students in the current Industrial Revolution 4.0 trend [31]. Interaction must exist in the learning process because
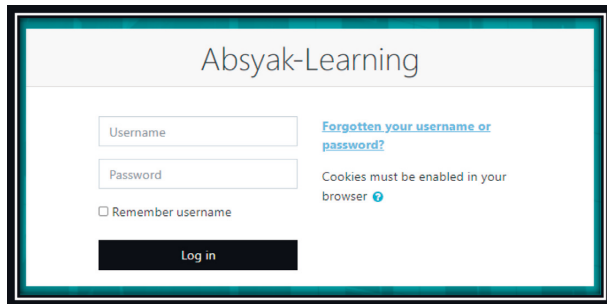
Figure 1: The homepage of "Absyak" application.

Table 6: Expert validation.

Variables	Average (%)	Criteria
Material	92.00	Absolutely appropriate
Media	95.36	Absolutely appropriate
Student responses	95.27	Absolutely appropriate

learning occurs when a learner notices a gap when he or she interacts which directs the learner's attention to new knowledge [32]. Therefore, findings from this study provide insights into the development of language learning materials in the future.

The development of "Absyak" application in this research is based on the English language learning principles. Inputs, processes, and outputs as well as outcomes are considered, so that the processes and goals in learning English can be significantly achieved [32]. The findings show that students have positive attitudes towards the use of "Absyak" application because it allows them to be more motivated and more involved in the learning process. This can encourage students to be more responsible and willing to be involved in their learning. It was explained that the motivation of students is a key factor influencing the level and success of learning a second/foreign language. In this research, we found that not only does motivation lead to increased learning, but independent learning in "Absyak" application can motivate students in the learning process.

3.3. Product Tryout.

ESP learning media for pharmacy through "Absyak" application was developed and then tested on students. We selected students majoring in a pharmacy according to the objectives of the research target with various cognitive abilities in speaking skill to test our products. Furthermore, the "Absyak" application that has been developed was tested on 30 students majoring in pharmacy at a Health College in East Java and through survey. The survey was then used to assess student performance in the e-learning process through "Absyak" application.

The results of the validity test show that the material variable has a Pearson correlation value between 0.489 and 0.738. The media variable has a Pearson correlation value between 0.448

and 0.796. The student response variable has a Pearson correlation value between 0.421 and 0.873. This means that all indicators on the material, media, and student responses are valid because all Pearson correlation values are more than 0.3. For reliability testing, Cronbach's alpha values are 0.898, 0.900, and 0.918, respectively. This means that the variables are reliable because all Cronbach's alpha values are more than 0.7. Thus, the results of the presurvey on 30 students concluded that the indicators for each variable were valid and reliable.

Based on Table 7, it can be seen that the average assessment results of 30 students revealed the achievement criteria of "Absolutely Appropriate." The results of product assessments that reach a value of 81%–100% can be implemented directly without further revisions, so that the learning media can be employed to the implementation stage. Thus, the learning media developed were suitable for use in the learning process.

These results also show that students respond positively to the ESP for the pharmacy learning process through "Absyak" application. When tested, the learning media functioned well. Our study is different from previous research that was carried out in developing Moodle as e-learning Deleted [33], in that we focused on course development and exploratory digital interaction media in video and Self-Determine Learning (SDL) for pharmacy students to improve their English speaking skills.

3.4. Product Implementation.

In the implementation phase of "Absyak" application, as many as 60 students in the pharmacy department were invited to find out the effectiveness of the "Absyak" application through a survey. The sampling was carried out on all pharmacy students at the college. The student recruitment was based on their participation in the English for Pharmacy course through "Absyak" application for almost 1 semester in the 2021/2022 academic year. The purpose of the learning activity is to determine whether "Absyak" application is effective in improving the students' English speaking skill.

Based on Table 8, it can be seen that the highest number is in the very effective category for each variable, namely, material, media, and student responses. In the material variable, 36 students, or 60%, answered that the ESP learning material for pharmacy through "Absyak" application was very effective. While on the media variable, 36 students or 60% answered that the "Absyak" application was very effective. Also, the student response variable was that 37 students or 61.67% answered that the "Absyak" application was very effective in improving the pharmacy students' English speaking skills . Respondents also stated that the learning media in "Absyak" application "Very Effective" was used when compared to learning media that were often used by lecturers. The finding corresponds to Qudratovich's [34] study that learning using digital student worksheets with visualization assisted by macromedia flash is more effective than conventional learning. Thus, it can be concluded that ESP learning for pharmacy students through "Absyak" application is very effective in improving their English speaking skills [35–38].

TABLE 7: Tryout result.

Variable	Average (%)	Criteria
Material	92.22	Absolutely appropriate
Media	92.32	Absolutely appropriate
Student responses	92.79	Absolutely appropriate

TABLE 8: Student responses.

Variable	Category	Frequency	Percentage (%)
Materials	Not effective	2	3.33
	Less effective	3	5
	Fairly effective	19	31.67
	Very effective	36	60
Media	Not effective	2	3.33
	Less effective	0	0
	Fairly effective	22	36.67
	Very effective	36	60
Student responses	Not effective	2	3.33
	Less effective	0	0
	Fairly effective	21	35
	Very effective	37	61.67

4. Conclusions and Implications

The study revealed several salient points. First, the learning materials in the ESP for pharmacy learning through "Absyak" application have been successfully developed at the design stage according to the needs analysis. Second, the variables of material, media, and student responses to learning have been validated and corrected according to the suggestions of two validators as media experts and three validators as material experts. Third, the results of the presurvey on 30 students showed that the indicators for each variable were valid, reliable, and very feasible to implement. Lastly, the implementation phase with 60 students showed that ESP for pharmacy learning materials through "Absyak" application was "very effective" to be developed in improving English speaking skill. For further research, because the present study is limited to internet-based and desktop-friendly learning, it is necessary to have mobile learning as the need for this type of learning is currently increasing. In addition, research on the development of mobile-based media will be of much use to users such as students and teachers/lecturers. If the media is used by an educational institution, it must be reidentified related to needs analysis, learning environment, student characteristics, school facilities, and others.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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