Analysis of Project-based Speaking Worksheet Integrated with ICT on the Needs of Business Administration Students

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ABSTRACT

This article presents a needs analysis conducted among 103 third-semester Business Administration students at the State Polytechnic of Ujung Pandang. The aim was to identify their necessities, lack and wants regarding English language learning to design practical English-speaking worksheets using a Project-Based Learning (PBL) model integrated with Information and Communication Technology (ICT). The data were obtained from a questionnaire as a primary source. The findings revealed that students encountered significant problems in speaking aspects, as demonstrated by the majority of students' responses falling into the ‘poor’ category, including vocabulary (69.9%), pronunciation (62%), fluency (45.6%), and grammar (49.5%). Additionally, students strongly desired innovative learning materials and worksheets to engage them more effectively in the learning process. Specifically, they emphasized the importance of incorporating visually appealing graphics and interactive audio-visual elements to make the learning experience more engaging and enjoyable. This need analysis is a starting point for further development of the English speaking worksheet.

KEYWORDS

Need Analysis, English Materials Development, Project-based Learning, Business Administration Students

1. Introduction

In today’s fast-paced world, being able to communicate effectively in English is more crucial than ever, especially for students majoring in Business Administration. The ability to express ideas fluently in English not only boosts academic success but also plays a pivotal role in shaping future professional careers. Thomas et al. (2016) emphasized that students need to master English not only for communication purposes covering specific fields but also for more extensive work skills and competencies. Speaking skills are a vital component of the curriculum in foreign language teaching (Bashori et al., 2022). Therefore, students need to have meaningful learning experiences with innovative teaching approaches. Hence, institutions must implement teaching that ensures students develop proficient English and good communication skills (Ting et al., 2017).

Several issues arise in English language teaching, especially regarding the teaching of speaking skills. Apart from linguistic aspects, which include vocabulary, pronunciation, and grammar (Alam & Ashrafuzzaman, 2018; Alrasheedi, 2020; Anas & Akhmad, 2018; Astuty, 2023; Bashir et al., 2021), other non-linguistic aspects also have a significant influence on the emergence of problems in teaching speaking skills. One of these aspects is the course content that does not support speaking activities, giving learners few opportunities to practice speaking English (Akbari, 2016; Chand, 2021; Sokip, 2020; Wahyuningsih & Afandi, 2020). Therefore, learners should be encouraged to communicate in English in various environments by utilizing various platforms and practicing authentic strategies (Alrasheedi, 2020).

Some studies have recommended the integration of Information Communication and Technology (ICT) into English language teaching practices (Anas et al., 2022; Dung, 2021; Khanh, 2021; Krajcik & Shin, 2014; Nguyen, 2022; Suryani & Argawati, 2023;
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Wahyuningsih & Afandi, 2020). Technology-integrated English language teaching can enrich the cultural understanding of teaching participants and provide broader knowledge and experience (Riady et al., 2022; Wahyuningsih & Afandi, 2020). This integration can be through digital media and platforms, internet-based teaching materials, or electronic worksheets.

A worksheet is a tool that can help students to participate in the learning process. Worksheets in English classes in the Business Administration department could be more optimal regarding the application of Project-based Learning and the use of technology. A prototype in the form of a technology-based worksheet is needed in the Speaking learning process that emphasizes the Project-based Learning approach. However, as English is taught in the context of English for Specific Purposes, a need analysis is needed to link students’ needs and the worksheet developed. While the combination of PBL and ICT has attracted attention in educational research, its application to enhance English speaking skills within Business Administration remains relatively unexplored. This study addresses this gap by conducting a thorough need analysis, digging into the linguistic challenges faced by students in this field. The goal is to identify and understand these challenges, paving the way for the development of an English-speaking worksheet that not only aligns with the principles of PBL but also caters to the unique language demands of Business Administration students. This article elaborates the answers to the research questions; (1) How do Business Administration students perceive their English speaking skills?; (2) What are Business Administration students’ necessities, lacks, and wants on Project-based Speaking Worksheet Integrated with ICT?

2. Literature Review
2.1 Need Analysis
Since the needs of students studying English are diverse, Need Analysis (NA) in ELT is unavoidable. A Need Analysis is used to acquire a better understanding of what and how language skills should be taught. Richards (2001) formulated a comprehensive perspective on needs which refers to want, desire, demand, expectation, motivation, lack, constrain, and requirement. Its goal is to define essential learning goals and needs while designing and delivering a course or learning activity. The needs are related to the students’ qualities, concerns, and possible limits. According to Kaharuddin & Arafah (2017), the majority of teachers tend to rely on their intuition and perception rather than addressing the specific needs of their students. This inclination may arise due to the absence of a clear guideline regarding the content and methodology for teaching English as a general subject. Complicating matters, the target university, being a private institution, enrolls students with varying levels of English proficiency. Consequently, conducting a Need Analysis is deemed the optimal approach for obtaining insights from students, ensuring that their expectations for learning English at the target university are met.

Hutchinson and Waters (1987) introduced the learning-centered approach needs analysis model. This model breaks down needs analysis into two key aspects: target needs and learning needs. Target needs are to cover the necessities, lacks, and wants. "Necessities" are determined by what the target situation demands, representing the must-haves for effective language use. "Lacks" highlight the gap between these necessities and what the learner already knows, indicating their current proficiency level. "Wants" describe learners’ subjective needs, not necessarily aligning with the objective needs perceived by teachers and course designers. On the other hand, learning needs are to delve into how learners approach language learning, encompassing their motivation, preferred learning methods, available resources, course scheduling, and personal details. Conducting a needs analysis holds significant importance in shaping the content of courses, especially concerning language components. Besides helping set language goals, understanding these needs is also useful in deciding what to include in the course (Nation & Macalister, 2010).

3. Methodology
3.1 Design
The study emphasized the needs analysis using a descriptive quantitative method as a part of the initial research in conducting a study on Research and Development. The data were obtained by using a questionnaire as the main instrument, which was distributed online via Google Forms. The questionnaire was arranged based on the need analysis model by Nation & Macalister (2010), covering necessities, lacks, and wants. The questionnaire’s validity and reliability were previously tested before distributing it to the participants.

3.2 Participants
The participants of the research were 103 third-semester students from five different classes. All of the students were chosen purposively as they were Business Administration majors in the academic year of 2023/2024 who had passed the General English Course when this research was conducted.

3.3 Procedures for Collecting and Analyzing Data
The questionnaire was distributed to 103 students and collected. Descriptive statistical analysis techniques were employed to process the data from the questionnaire. The collected data were identified based on the aspects of target needs (necessities, lacks, and wants), quantified by using a percentage formula and described in the table and graph.
4. Findings

4.1 Present Situation
In this section, students are asked to provide their perceptions of the current situation regarding the English language learning they experience. Student responses can be seen in the following table.

Table 1: Students' Perception of the Current English Learning

<table>
<thead>
<tr>
<th>Statements</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The materials provided by the lecturer in the English course are already interesting</td>
<td>13</td>
<td>14</td>
<td>22</td>
<td>52</td>
<td>2</td>
</tr>
<tr>
<td>The materials provided by the lecturer in the English course are already digitally based</td>
<td>16</td>
<td>29</td>
<td>41</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td>My lecturer implements Project-based Learning in English lectures</td>
<td>14</td>
<td>7</td>
<td>35</td>
<td>38</td>
<td>9</td>
</tr>
<tr>
<td>The speaking exercises and activities currently conducted in English lectures make me enthusiastic about learning</td>
<td>12</td>
<td>10</td>
<td>24</td>
<td>30</td>
<td>27</td>
</tr>
<tr>
<td>The speaking exercises and activities conducted during English lectures, in my opinion, are sufficient to improve my speaking skills in English.</td>
<td>18</td>
<td>10</td>
<td>26</td>
<td>38</td>
<td>11</td>
</tr>
<tr>
<td>The use of technology helps me in English lectures</td>
<td>67</td>
<td>22</td>
<td>10</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>The use of audio-visual media (such as videos) helps me in English lectures</td>
<td>29</td>
<td>43</td>
<td>25</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

The current condition of English materials provided by the lecturer in the English Speaking course is not considered interesting by the students, as 52 (50.5%) students disagree with the statement that the materials provided are interesting. It seems that the materials provided are digitally-based since 45 students answered agree (29) and strongly agree (16) to the second statement. However, the speaking exercises and activities in their learning do not make them enthusiastic and are still insufficient to improve their speaking; meanwhile, the students mostly agreed that the use of technology and audio-visual media helps them in learning English. This may suggest the need for the development of teaching materials in the form of worksheets to facilitate students' learning, particularly in the enhancement of their speaking skills in English.

4.2 Business Administration Students' Necessities
In the context of developing a worksheet as teaching material for the Speaking English course, understanding the "Necessities" or essential needs of students in improving their speaking skills in English is crucial. Students' perceptions are measured based on their opinions on the importance of the Speaking course taught in the Department of Business Administration, as well as their English speaking abilities, particularly in supporting their future careers. In general, the data indicates that the majority of students consider speaking skills in English to be an important ability to possess. More detailed data can be seen in the following graph.

Figure 1: Students' Perception of the Importance of English
Out of 103 students who participated as respondents in the needs analysis phase, the majority strongly agree with the statement that English speaking skills are very important (89 respondents), especially concerning their future careers. A similar perception is also reflected in the importance of the Speaking course being taught in the Department of Business Administration, with 88 respondents strongly agreeing with that statement.

Students’ perceptions regarding the importance of having English language proficiency can serve as a basis for guiding improvements in the teaching of Speaking English courses. Students who recognize the relevance of English in their careers will be more motivated to learn and enhance their speaking skills. However, to maximize learning potential, innovative teaching approaches are needed.

4.3 Business Administration Students’ Lacks

The graph presents an illustration of the self-perceived speaking proficiency level of 103 third-semester students of the Business Administration department. A particular emphasis is placed on four essential aspects: pronunciation, grammar, fluency, and vocabulary. Respondents were asked to evaluate their proficiency on a 5-point scale, ranging from excellent to very poor.

In terms of pronunciation, a significant number of students, precisely 63 out of 103 (62%), expressed dissatisfaction, rating their pronunciation skills as “poor.” This suggests a prevalent challenge in articulating sounds and accents effectively. This indicates that a considerable proportion of students are dissatisfied with their pronunciation. Because of this, it appears that there is a widespread difficulty in correctly articulating sounds and accents.

The same thing happened when the students were evaluated on their grammatical skills; 51 of them said that they thought their talents were “poor” (49.5%). Among the students that were polled, this result indicates that there is a collective need for development in terms of grammatical precision and structure.

There was also a lot of emphasis paid to the topic of fluency, with 47 students characterizing their fluency as “poor” (45.6%). It is possible that this has the potential to indicate difficulties in sustaining communication that is both fluid and natural, which is needed for successful verbal expression.

Particularly noteworthy is the fact that the vocabulary component garnered the largest amount of “poor” scores, with 72 students (69.9%) expressing worries about their word choice and lexical range. The findings of this investigation shed light on a specific area of weakness that may have an influence on the overall efficacy of communication.

In conclusion, the findings of the questionnaire indicate that there is a continuous pattern of lower levels of self-perceived competence across all four dimensions of students’ speaking abilities. The findings indicate that there is a requirement for providing focused interventions and assistance in the areas of pronunciation, grammar, fluency, and vocabulary in order to improve the overall speaking abilities of the students in the Business Administration department. This highlights a greater need in the vocabulary aspect, where students require vocabulary development to achieve the goals of Speaking learning.
In addition to measuring students' perceptions of their shortcomings, this section also examines how students assess the challenges that arise when they speak in English. These constraints are detailed in the following graph:

**Figure 3: Students' Problems in Speaking**

In general, each statement given as the predictive problem in speaking was answered dominantly by the “often” and “always” categories. This shows that students frequently face problems related to speaking using English. The most frequent challenge that arises is the students’ lack of vocabulary in English. Students also feel embarrassed when speaking. In addition, a lack of proficiency in pronouncing words is also a constraint consistently faced by students.

### 4.4 Business Administration Students’ Wants

Students’ needs are crucial in considering the preparation of learning materials so that the developed materials become more relevant and effective in their application. By integrating students’ preferences into the teaching materials, their motivation will increase. This will also have an impact on students’ engagement in learning.

In the next section, students provide their perspectives on the developed instructional materials. This includes the use of media that can aid their learning, as well as their preferences for teaching materials in the English Speaking course.

**Figure 4: Students’ Perception of the Media Used in Supporting Their English Learning**

The graph presents students’ perceptions of the media used in supporting their English learning. Dominantly, students strongly agreed that audio-visual media can support their learning. Besides, 32 students opted for ‘strongly agree’ for quizzes through
digital platforms, and 76 students chose ‘agree’ for games, showing that students need these activities when it comes to English learning. The percentage of activities that students need in English Speaking class can be seen in the following table.

Table 2: Students’ Preference for the Activities in English Speaking Class

<table>
<thead>
<tr>
<th>Speaking Activities</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role-play</td>
<td>12</td>
<td>13</td>
<td>74</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Storytelling</td>
<td>10</td>
<td>14</td>
<td>70</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Creating video</td>
<td>22</td>
<td>73</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Group discussion</td>
<td>11</td>
<td>7</td>
<td>30</td>
<td>40</td>
<td>15</td>
</tr>
<tr>
<td>Games</td>
<td>22</td>
<td>76</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Quiz through digital platform</td>
<td>32</td>
<td>63</td>
<td>4</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Debate</td>
<td>5</td>
<td>7</td>
<td>41</td>
<td>23</td>
<td>27</td>
</tr>
<tr>
<td>Dialogue</td>
<td>19</td>
<td>65</td>
<td>16</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Drama</td>
<td>7</td>
<td>16</td>
<td>17</td>
<td>61</td>
<td>2</td>
</tr>
<tr>
<td>Project</td>
<td>11</td>
<td>16</td>
<td>35</td>
<td>14</td>
<td>27</td>
</tr>
</tbody>
</table>

Students were also asked about their preference for the developed English materials. Interestingly, all students opted for the aspect of the attractive interface to be included in materials for English learning. Then, students perceived that the developed materials should provide animated images and interactive features. Students’ answers implied the need for interesting and interactive features, including the layout and activities presented in the learning materials.

Table 3: Students’ Preference on the Developed Materials

<table>
<thead>
<tr>
<th>Aspect of Worksheet</th>
<th>Total Students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of answer keys at the end of material</td>
<td>30</td>
<td>29.13</td>
</tr>
<tr>
<td>Displaying animated images</td>
<td>97</td>
<td>94.17</td>
</tr>
<tr>
<td>Displaying video/audio</td>
<td>70</td>
<td>67.96</td>
</tr>
<tr>
<td>Attractive interface</td>
<td>103</td>
<td>100.00</td>
</tr>
<tr>
<td>Concise and compact content</td>
<td>68</td>
<td>66.02</td>
</tr>
<tr>
<td>Providing diverse exercises and practice</td>
<td>65</td>
<td>63.11</td>
</tr>
<tr>
<td>Displaying interactive features</td>
<td>89</td>
<td>86.41</td>
</tr>
</tbody>
</table>

5. Discussion
The outcomes of this study reveal the Business Administration students’ needs at the State Polytechnic of Ujung Pandang in terms of necessities, lacks, and wants that are beneficial for developing English learning materials, especially English speaking worksheets that present students’ needs accordingly.

5.1 Business Administration students perceived English speaking skills
The following analysis of the data offers extremely helpful insights into the students’ self-perceived speaking proficiency in a variety of speaking-related aspects. Several aspects are being taken into consideration, including fluency, vocabulary, grammar, and pronunciation. The majority of students characterized their level of skill in these areas as being inadequate, which contributed to the emergence of a dominating tendency. The fact that just a tiny percentage of respondents admitted that they were excellent in every facet of their speaking abilities is an interesting finding. The findings are consistent with the findings of a similar questionnaire that investigated specific obstacles that students have when speaking. The questionnaire highlighted those students who had significant difficulty, notably in pronunciation and vocabulary (Alam & Ashrafuzzaman, 2018; Alrasheedi, 2020; Anas & Akhmad, 2018; Astuty, 2023; Bashir et al., 2021)

The results that were made are in agreement with the findings of (Bashori et al., 2022), who observed that a restricted vocabulary is a prevalent issue among those who are learning a foreign language. This is a feature that is frequently connected with a decreased competency in spoken language. It is now clear that vocabulary and speaking ability are inextricably linked, which highlights the significant part that vocabulary plays in the process of efficient verbal communication. In addition, the research offers light on the difficulties that a large number of students have with pronunciation, which Bashori et al. (2022) describe as a key feature that is required for students to pronounce words precisely and clearly.
In conclusion, the in-depth investigation of the perspectives of English speaking skills held by students majoring in Business Administration indicates a pervasive feeling of inadequacy, particularly with regard to pronunciation, vocabulary, and general spoken competency. These findings highlight the need to tackle specific language obstacles, such as low vocabulary and difficulty with pronunciation, in order to improve the overall speaking capacities of students enrolled in the Business Administration programme.

5.2 Business Administration students’ necessities, lacks, and wants
Since students believe that speaking skills are crucial, especially in the business administration department, it is essential to create a helpful worksheet for their speaking classes. Even though they face challenges like limited vocabulary and pronunciation issues, they express a need for a tool that includes videos, interactive features, and a user-friendly design.

Despite these challenges, students want a resource that uses both visuals and sounds, allowing them to interact with the content easily. They also prefer a tool that looks interesting and keeps them engaged. This shows their understanding that a mix of different things, like videos and interactive features, can make learning more enjoyable and effective.

Alrasheedi (2020) suggested that learners should be prompted to communicate in English across various environments, and incorporating audio-visual media is crucial to achieving this goal. Lecturers can inspire students to leverage different social media platforms and engage with English-language content such as videos, podcasts, and films (Alrasheedi, 2020). This multimedia approach not only expands their vocabularies but also aligns with the students’ actual need for audio-visual media to enhance their speaking skills. Therefore, the teaching method, strategy and materials need to be adjusted to tackle the problem faced so that the goal of speaking can be achieved.

Concerning the preferred materials, students expressed a belief that the developed worksheet should incorporate activities such as creating videos, playing games, incorporating quizzes through digital platforms, and engaging in dialogues. Notably, these activities seamlessly align with the integration of technology. In the context of videos and quizzes, technology plays a crucial role, enhancing the learning experience and making it more engaging. Similarly, games and dialogues can be adapted to ensure the continued integration of Information and Communication Technology (ICT) into the learning process.

The emphasis on creating videos points to the recognition of the multimedia format as an effective tool for learning, enabling visual and auditory engagement. This aligns with the contemporary trend of utilizing digital platforms to enhance educational content. Likewise, incorporating quizzes through digital platforms not only provides an interactive learning experience but also allows for immediate feedback, promoting a dynamic and effective learning environment. Games, as suggested by students, present an opportunity to infuse an element of playfulness into the learning process, making it more enjoyable and conducive to skill development. Additionally, dialogues, when integrated with technology, offer a platform for interactive and communicative language practice. In essence, the students’ preferences for video creation, games, quizzes, and dialogues not only highlight their inclination towards interactive and dynamic learning but also underscore the significance of leveraging technology in these activities. This insight serves as a valuable guide for educators in crafting a worksheet that aligns with students’ expectations and harnesses the potential of technology to enhance the English speaking learning experience.

5.3 Integrating ICT Demands into the Development of Project-based Speaking Worksheet
Due to digitalization, learners exhibit rapid changes in learning behavior, where they tend to get bored with traditional learning methods such as reading printed books, completing the same worksheets, and discussing the same topics. Learners nowadays have access to technology such as tablets, smartphones, and laptops, which presents an opportunity for educators to leverage in teaching.

Project-Based Learning (PBL) has emerged as a dynamic and student-focused teaching approach. PBL’s emphasis on real-world applications and collaborative problem-solving fits seamlessly with the practical demands of the business world. PBL refers to an inquiry-based instructional method that involves learners in constructing knowledge by requiring them to complete projects and develop real-life products (Krajcik & Shin, 2014). It is one of the approaches that can be employed in teaching Speaking to enhance both the speaking skills of learners (Hidayati et al., 2023; Suryani & Argawati, 2023; Winash et al., 2019) and the engagement and motivation of learners (Almulla, 2020; Park & Lee, 2019). The Project-based Learning model is a priority in the current Independent Learning Curriculum. To achieve optimal project-based learning, the integration of technology is necessary.

The use of technology as a learning tool is an innovative way to enhance the quality of education in Indonesia, enabling it to compete on the international stage. Additionally, integrating Information and Communication Technology (ICT) enhances the learning experience, providing students with a diverse platform to refine their language skills in authentic business contexts. However, incorporating ICT into English for Specific Purposes (ESP) instruction is another problem that vocational schools face while teaching English. For the purpose of ESP learning, several prototypes and models that are based on ICT have been developed. On the other hand, the Indonesian vocational education system has not yet completely included ESP learning paradigms that are based on information and communication technology. It is not even close to being converted into a policy for the curriculum of vocational education classes (Fadilia et al., 2022). Meanwhile, some studies have recommended the integration of Information
Communication and Technology (ICT) into English language teaching practices (Anas et al., 2022; Dung, 2021; Khanh, 2021; Krajcik & Shin, 2014; Nguyen, 2022; Suryani & Argawati, 2023; Wahyuningsih & Afandi, 2020). Technology-integrated language teaching can enrich the cultural understanding of teaching participants and provide broader knowledge and experience (Riady et al., 2022; Wahyuningsih & Afandi, 2020). In addition, Krajcik & Shin (2014) identified that one of the six characteristics of effective project-based learning is using technology to support learning. This integration can be through digital media and platforms, internet-based teaching materials, or electronic worksheets.

6. Conclusion
The main aim of this study was to identify and understand the obstacles encountered by Business Administration students in regard to their proficiency in speaking English. Furthermore, the research intended to provide the groundwork for creating a customized English-speaking worksheet that combines Project-Based Learning (PBL) with Information and Communication Technology (ICT), specifically designed to meet the linguistic needs of these students.

The study revealed some important findings. Initially, Business Administration students demonstrated a strong recognition of the significance of English proficiency for their prospective careers. Furthermore, a significant inadequacy was seen in their vocabulary mastery. In addition, students had a pronounced tendency towards learning activities that effectively used technology. Moreover, their preference towards interactive and captivating resources emphasized the necessity for an engaging approach to language learning. The requirement for developing an English Speaking worksheet designed for business administration students becomes clear as a consequence of the need analysis. This worksheet should utilise the Project-Based Learning technique strategically, supplemented by technological integration. By doing so, educators may successfully adapt to learners’ changing needs and preferences, providing a dynamic and technology-enhanced learning environment.

Although this research offers significant insights, it still has several limitations. The study’s scope was limited to a particular cohort of students and may not comprehensively encompass the range of language learning requirements across different business fields. Additionally, external factors such as individual differences in learning styles and preferences were not extensively explored. Further research might develop English learning materials and examine the efficacy of technology-integrated language teaching tools and platforms for Business Administration students.

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References


