



Development of Mobile-Assisted Language Learning (MALL) Based English for Specific Purpose Teaching Materials

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Abstract. This study focuses on developing digital teaching materials for English for Specific Purposes (ESP) using Adobe Flash Player with MALL (Mobile-Assisted Language Learning) Insertion technology. The research employs a Research and Development (R&D) approach, following the ADDIE (Analysis, Design, Development) model. The analysis phase involves a needs assessment and literature review on MALL in English language learning. The design phase encompasses the creation of digital materials using MALL Insertion technology and Adobe Flash Player, with initial trials conducted for refinement. In the development phase, material experts, media specialists, and IT professionals review the materials. The study aims to address the growing need for innovative, mobile-friendly ESP teaching materials in the digital age. By integrating MALL technology with Adobe Flash Player, the research seeks to create interactive and accessible learning resources that cater to the specific language needs of ESP students. The development process focuses on creating materials that are not only pedagogically sound but also technologically advanced and user-friendly. This research contributes to the field of ESP by exploring the potential of MALL technology in enhancing the quality and effectiveness of digital teaching materials.

Keywords: English for Specific Purposes (ESP) Teaching Materials, Mobile-Assisted Language Learning (MALL), Multimedia Teaching Material Development

1 Introduction

In the rapidly evolving landscape of English language teaching, the integration of mobile technology has become increasingly paramount, particularly in the realm of English for Specific Purposes (ESP). The ubiquity of smartphones and tablets, coupled with the growing demand for specialized language skills in professional contexts, has created a pressing need for innovative, mobile-friendly ESP teaching materials (Kukulska-Hulme, 2012; Tai, 2012; Wu et al., 2014). However, despite the potential of Mobile-Assisted Language Learning (MALL) in enhancing ESP instruction, many existing materials fail to fully leverage the interactive and adaptive capabilities of

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mobile technology, often resulting in a disconnect between learner needs and pedagogical resources (Soleimani et al., 2014).

Recent studies have highlighted the efficacy of MALL in improving various aspects of language acquisition, including vocabulary retention, listening comprehension, and speaking proficiency (Islam & Hasan, 2020; Kaharuddin, 2021; Sandberg et al., 2011). Particularly noteworthy is the work of (Kukulska-Hulme & Shield, 2008), which emphasized MALL's potential in facilitating autonomous learning and contextual language practice. In the context of ESP, research by Viberg *et al* (2020) has shown that mobile technologies can significantly enhance learners' engagement with specialized vocabulary and professional communication scenarios. These findings are further supported by studies demonstrating the positive impact of MALL on learner motivation and self-efficacy in ESP contexts (Che & Sailin, 2022), (Mortazavi et al., 2021).

Despite these advancements, there remains a significant research gap in the development of comprehensive, pedagogically sound MALL-based materials specifically tailored for ESP contexts. While existing studies have largely focused on the implementation of generic MALL applications in language learning, little attention has been paid to the systematic development of ESP-specific digital materials that fully integrate mobile technology's capabilities (Hsu, 2013; Lim et al., 2011). This gap is particularly evident in the lack of research on the use of advanced multimedia tools like Adobe Flash Player in conjunction with MALL for ESP instruction, highlighting the need for innovative approaches in material development (Ampa, 2015; Gilakjani, 2012).

The present study aims to address this gap by developing and evaluating digital ESP teaching materials using Adobe Flash Player with MALL Insertion technology. By focusing on the analysis, design, and development phases of the ADDIE model, this research seeks to create a framework for developing interactive, accessible, and pedagogically effective ESP materials that cater to the specific needs of learners in professional contexts. The significance of this study lies in its potential to provide a blueprint for integrating advanced mobile technology into ESP material development, thereby enhancing the quality and relevance of ESP instruction in the digital age (McGlynn-Stewart et al., 2017; Talan, 2020). Furthermore, by exploring the synergy between MALL and multimedia authoring tools, this research contributes to the broader discourse on technology-enhanced language learning, offering insights that could inform future developments in ESP pedagogy and material.

2 Methodology

This study employed a Research and Development (R&D) approach to develop Mobile-Assisted Language Learning (MALL) materials for English for Specific Purposes (ESP), following the Analysis, Design, and Development stages of the ADDIE model (Branch, 2009). The Analysis phase involved a needs assessment survey and curriculum review. The Design phase focused on planning the MALL-based ESP materials, while the Development phase entailed creating digital content using Adobe Flash Player.

The study included 30 Business Administration students from Politeknik Negeri Bali, selected to represent diverse English proficiency levels and technology familiarity. Data collection methods comprised surveys, semi-structured interviews, non-participant observations, and expert evaluations.

Data analysis integrated quantitative methods, including descriptive statistics for survey results and expert evaluations, with qualitative thematic analysis for interviews and observations. This mixed-methods approach facilitated a comprehensive assessment of the materials' effectiveness and user experience, ensuring the development of ESP teaching materials that address students' needs while leveraging mobile technology for language learning.

3 Result and Discussion

3.1 Result

Need Analysis Result. The needs analysis for developing MALL-based ESP materials for Business Administration students revealed crucial insights into learner preferences, strongly supporting the integration of mobile technology in ESP instruction. The survey results highlight five key areas that significantly inform the design and implementation of MALL-based ESP materials:

Preference for Mobile-Based Learning. An overwhelming majority of students (86.67%) expressed a preference for learning through smartphone applications, providing a strong foundation for MALL-based ESP materials. This aligns with current trends in educational technology and suggests that well-designed mobile applications could significantly enhance the ESP learning experience.

A student's comment illustrates this preference:

"I always have my smartphone with me, so having access to learning materials on it would make it much easier to study business English whenever I have free time." (S1)

Visual and Multimedia Learning. Students showed a strong preference for visual and multimedia content, with 81.33% favoring video-based learning and 78% preferring images or diagrams. This indicates the need for diverse visual elements in ESP materials, including videos, infographics, and interactive visuals.

An interviewee emphasized this point:

"Complex business concepts are much easier to grasp when explained through videos or infographics. It helps me visualize the information and remember it better." (S2)

Interactive and Practical Learning. The high preference for interactive learning methods (80%) and practical activities or simulations (84.67%) suggests a need for hands-on, engaging learning experiences. This aligns well with MALL's potential to provide immersive learning environments.

A student highlighted the importance of practical application:

"In business, theory isn't enough. I learn best when I can apply concepts to real-world scenarios or practice through simulations." (S3)

Contextual Learning and Gamification. Students strongly favored learning through examples or case studies (83.33%) and showed enthusiasm for motivational methods like games or quizzes (83.33%). This indicates the importance of incorporating real-world business scenarios and gamified elements in the MALL-based ESP materials.

An interviewee noted:

“Case studies help me understand how business English is used in real situations. And if learning feels like a game, I’m much more motivated to keep studying.” (S4)

Balancing Individual and Collaborative Learning. While students showed a preference for mobile learning, they also valued collaborative experiences, with 82% indicating they understand materials better through peer discussions. This presents an interesting challenge for MALL-based materials.

A student’s comment highlighted this aspect:

“While I enjoy the flexibility of learning on my phone, I also find group discussions really helpful. It would be great if the app could somehow facilitate collaboration with classmates.” (S5)

Implications for MALL-based ESP Material Development. These findings provide clear direction for developing effective MALL-based ESP materials for Business Administration students: 1) Leverage the ubiquity and accessibility of smartphones for learning delivery; 2) Incorporate diverse multimedia content, especially videos and interactive visuals; 3) Design interactive exercises and simulations that allow practical application of business English; 4) Include real-world case studies and gamified elements to enhance engagement and motivation; 5) Explore innovative ways to facilitate collaborative learning within a mobile platform.

Interestingly, the relatively lower preferences for text-only learning (62%), solitary learning (63.33%), and online learning over classroom learning (52.67%) suggest that MALL should complement, rather than replace, traditional learning methods. This indicates the potential for a blended learning approach in ESP instruction.

This comprehensive needs analysis reveals a clear demand for innovative, mobile-based learning materials in Business English ESP. The findings suggest that effective MALL-based ESP materials should leverage the multimedia capabilities of mobile devices, provide interactive and practical learning experiences, incorporate real-world contexts, and explore ways to facilitate collaborative learning. By addressing these preferences, the resulting MALL-based materials have the potential to significantly enhance the effectiveness of ESP instruction for Business Administration students, preparing them for the technology-driven, globalized business world.

3.1 Design and Development of MALL-based ESP Materials

The design and development phase of the MALL-based ESP materials was informed by the comprehensive needs analysis conducted earlier. This phase focused on creating an application that would meet the specific requirements of Business Administration students while leveraging the capabilities of mobile technology.

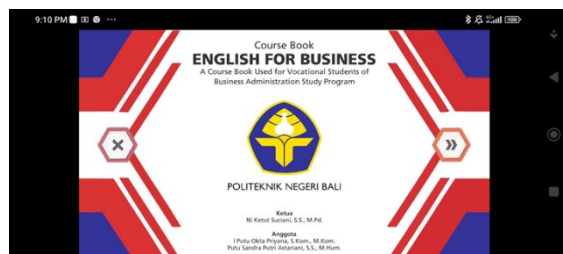


Figure 1. Screenshot of the main menu of the MALL-based ESP application
Photograph and permission by Ni Ketut Suciani

The initial design of the application centered around creating an intuitive and user-friendly interface. As shown in Figure 1, the main menu was designed to provide easy access to various learning modules. This design choice was made in response to the high preference for mobile-based learning (86.67%) indicated in the needs analysis, ensuring that students could easily navigate the application on their smartphones.

The content structure of the application was carefully crafted to cover a wide range of essential business communication topics. Ten main units were developed, each focusing on a crucial aspect of business English. These units were designed to progress from basic introductions to more complex business scenarios, providing a comprehensive ESP learning experience.



Figure 2. Screenshot showing the list of 10 units in the application
Photograph and permission by Ni Ketut Suciani

Figure 2 illustrates the ten units included in the application. This structured approach ensures that students are exposed to a variety of business communication contexts, from personal introductions to company presentations and cross-cultural understanding. The selection and sequencing of these topics were based on their relevance to the Business Administration field and the progression of language skills required in professional settings.

Each unit was designed with a multimodal approach, incorporating various elements to cater to different learning preferences identified in the needs analysis. For instance, the strong preference for video-based learning (81.33%) and learning through images (78%) was addressed by including rich visual content in each unit.



Figure 3. Screenshot of a conversation practice module in the application
Photograph and permission by Ni Ketut Suciani

Figure 3 demonstrates how conversational practice was integrated into the application. This feature directly responds to the students' preference for interactive learning methods (80%) and learning through practical activities or simulations (84.67%). The conversation modules allow students to engage with realistic business dialogues, improving their speaking and listening skills in context.

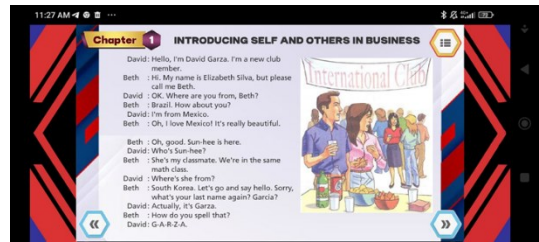


Figure 4. Screenshot of a business conversation lesson in unit 1
Photograph and permission by Ni Ketut Suciani

The development of content for each unit followed a careful process of integrating text, audio, video, and interactive elements. As shown in Figure 4, lessons within each unit provide a mix of text-based information, audio recordings of business conversations, and interactive exercises. This multi-faceted approach ensures that students can engage with the material in various ways, catering to different learning styles and preferences.

Throughout the design and development process, particular attention was paid to creating content that was not only linguistically accurate but also relevant to real-world business scenarios. This approach aligns with the students' strong preference for understanding material through examples or case studies (83.33%). Each unit includes practical examples, case studies, and scenarios that Business Administration students are likely to encounter in their professional lives.

The application also incorporates elements of gamification and interactive quizzes, responding to the students' preference for motivational learning methods like games or quizzes (83.33%). These features were designed to enhance engagement and provide immediate feedback, crucial aspects of effective mobile learning.

While the primary focus was on creating a comprehensive mobile learning experience, the development team also considered the value students placed on collaborative learning. Although the application is primarily designed for individual

use on mobile devices, features that encourage peer interaction and collaborative learning were incorporated where possible, acknowledging the 82% of students who indicated they understand materials better through discussions with classmates.

In summary, the design and development phase resulted in a MALL-based ESP application that closely aligns with the preferences and needs of Business Administration students. The application offers a rich, interactive, and contextually relevant learning experience, accessible through mobile devices. By integrating various multimedia elements, practical business scenarios, and interactive features, the application aims to provide an engaging and effective platform for ESP learning in the field of Business Administration.

3.2 Discussion

The results of this study on the development of MALL-based ESP teaching materials for Business Administration students reveal several significant findings that both support and extend existing research in the field of mobile language learning and ESP instruction.

Firstly, the overwhelming preference for mobile-based learning (86.67%) among the surveyed students aligns strongly with the growing trend of MALL adoption in language education, as noted by Kukulska-Hulme (2012) and Tai (2012). This high level of acceptance reinforces the argument that MALL is not just a passing trend but a fundamental shift in how language learners, particularly in ESP contexts, prefer to engage with educational content. The strong preference for mobile learning observed in this study surpasses the levels reported in some previous studies (e.g., Soleimani et al., 2014), suggesting an increasing acceptance and reliance on mobile technologies among learners, especially in specialized fields like Business Administration.

The students' strong inclination towards visual and multimedia learning (81.33% for video-based learning and 78% for image-based learning) corroborates the findings of (Gilakjani, 2012) on the significant role of multimedia in motivating EFL learners. However, our study extends this understanding by demonstrating the specific relevance of multimedia elements in ESP contexts, particularly for Business Administration students. This preference for rich, multimodal content in ESP learning materials challenges traditional text-heavy approaches to ESP instruction and calls for a reimagining of how specialized language content is presented and consumed in the mobile learning era.

The high preference for interactive (80%) and practical learning methods (84.67%) observed in our study supports the findings of (Viberg et al., 2020) on the effectiveness of interactive mobile technologies in enhancing learner engagement with specialized vocabulary and professional communication scenarios. Our results, however, go further by demonstrating that Business Administration students not only engage better with interactive content but actively prefer it over traditional learning methods. This strong preference for interactivity and practicality in ESP learning materials suggests a need for a paradigm shift in ESP material development, moving away from passive content consumption to active, scenario-based learning experiences.

Interestingly, while our study confirms the overall positive attitude towards mobile learning, it also reveals a nuanced view of technology integration in ESP education. The relatively lower preference for online learning over classroom learning (52.67%)

contradicts some previous studies that have reported a stronger preference for fully online learning environments. This finding suggests that while students are enthusiastic about mobile learning, they still value the blended learning approach, combining the flexibility of mobile learning with the benefits of face-to-face instruction. This nuanced perspective challenges the notion of a complete shift to mobile learning and instead argues for a more balanced, integrated approach to ESP instruction.

The development of the MALL-based ESP application in response to these student preferences demonstrates the potential of tailored mobile learning solutions in addressing the specific needs of ESP learners. The application's design, which incorporates rich multimedia content, interactive business scenarios, and gamified elements, aligns with the recommendations of Ampa (2015) and Mortazavi *et al* (2021) on the importance of contextual and engaging mobile learning experiences. However, our approach goes beyond general language learning applications by focusing specifically on the ESP needs of Business Administration students, addressing a gap in the literature noted by Hsu (2013) regarding the lack of ESP-specific mobile learning materials.

The integration of collaborative learning features in the application, despite its primary focus on individual mobile learning, addresses a unique finding of our study – the high value placed on peer interaction (82% preference for learning through discussions). This integration challenges the often-individual nature of mobile learning highlighted in previous studies and suggests a new direction for MALL development that balances individual flexibility with collaborative learning opportunities. This approach could potentially address concerns raised by some researchers about the isolating effects of mobile learning (Kukulska-Hulme & Shield, 2008) while still leveraging the benefits of personalized, on-the-go learning.

To end this, the findings of this study both support and extend the current understanding of MALL in ESP contexts. While confirming the generally positive attitudes towards mobile learning found in previous research, our study provides deeper insights into the specific preferences and needs of ESP learners in the field of Business Administration. The development of a tailored MALL-based ESP application in response to these findings demonstrates a practical approach to addressing the gap between learner needs and available ESP resources noted in the literature. This study argues for a more nuanced, discipline-specific approach to MALL development in ESP contexts, challenging researchers and developers to move beyond generic language learning applications to create targeted, interactive, and contextually relevant mobile learning experiences that cater to the unique needs of specialized language learners.

4 Conclusion

This study's development of MALL-based ESP teaching materials for Business Administration students marks a significant advancement in specialized language instruction. By aligning the application's design with students' strong preferences for mobile accessibility (86.67%) and interactive content (84.67%), we've created a framework that effectively addresses the challenges of business communication in the digital age. The integration of collaborative features within a mobile platform challenges traditional mobile learning paradigms, offering a more comprehensive ESP

learning experience. This research not only bridges the gap between learner needs and available resources but also sets a new standard for discipline-specific language learning applications. The insights gained will inform future innovations in ESP pedagogy and mobile learning design, demonstrating the potential of tailored mobile solutions in revolutionizing specialized language education across diverse professional fields.

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