Developing Desktop-Based English for Accounting Teaching Materials to Support Computer-Assisted Language Learning (CALL)

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Abstract. This study aims to develop desktop-based English for Accounting teaching materials that can support the implementation of Computer-Assisted Language Learning (CALL) for students in the Applied Bachelor's Degree Program in Managerial Accounting. The desktop teaching materials are developed by integrating managerial accounting content with IT-assisted English language learning. The research method used is the ADDIE development model, which includes the stages of analysis, design, development, implementation, and evaluation. The subjects of the trial are students of the study program. Data collection techniques include validation by material and media experts, student responses to teaching materials, and English proficiency tests in the field of accounting. The data are analyzed descriptively and quantitatively to assess the validity, practicality, and effectiveness of the teaching materials. The result of the research is a valid, practical, and effective English for Accounting desktop teaching material. The teaching materials are expected to support lectures while improving English language skills in the field of international managerial accounting.

Keywords: Computer-Based Teaching Materials, Computer Assisted Language Learning, English for Accounting

1   Introduction

In the globalized economy, English proficiency is crucial for accounting professionals, particularly in written communication (Biber & Egbert, 2023). However, accounting students often struggle with English for Specific Purposes (ESP) due to specialized terminology (Alexander et al., 2018; Masztalerz, 2016). Computer Assisted Language Learning (CALL) has emerged as an effective approach to language instruction, creating interactive learning environments (Warschauer & Healey, 1998) and improving English proficiency (Islam & Hasan, 2020; Ysquierdo, 2018). The integration of authentic materials in ESP instruction enhances student motivation and language acquisition (Akbari & Razavi, 2016; Marpaung & Situmeang, 2020).

Recent research has focused on developing tailored ESP materials for accounting education. Farani and Wenjie demonstrated the effectiveness of specialized language instruction in improving writing skills and assessment frameworks (Farani & Winarni, 2017; Wenjie, 2022). Studies also highlight the benefits of integrating technology in accounting education (Anwariah, 2017; Carenys et al., 2017; Jill et al., 2019).

Despite these advancements, there is a gap in the literature regarding desktop-based CALL materials for English for Accounting. While mobile-assisted language learning has been explored (Keezhatta & Omar, 2019; Tonekaboni, 2019), the potential of desktop applications for ESP in accounting remains underexplored. This gap is significant given accounting students' preference for interactive, technology-enhanced learning methods (Hudiananingsih et al., 2022).

This study aims to address this gap by developing and evaluating a desktop-based CALL application for English for Accounting. The research seeks to contribute to effective language instruction for accounting students and potentially serve as a model for other ESP fields. The primary research question is: "How can a comprehensive desktop-based English for Accounting learning material be developed to support CALL for accounting students?"

2   Methodology

This study employed a mixed-method approach to develop desktop-based English for Accounting learning material supporting Computer Assisted Language Learning (CALL). The research utilized the ADDIE model, focusing on the Analysis, Design, and Development phases.

The Analysis phase involved a needs assessment via an online questionnaire distributed to 78 accounting students at Politeknik Negeri Bali. The questionnaire, comprising 11 indicators on a 5-point Likert scale, measured students' preferences for various learning methods and materials. Descriptive statistics were used to analyze the data, identifying central tendencies in students' learning preferences.

The Design phase involved creating a blueprint for the desktop application based on the needs analysis results. Six main units of English for Accounting content were conceptualized, with established learning objectives and content outlines. The design incorporated CALL and ESP principles to ensure technologically enhanced and field-specific material.

The Development phase focused on content creation and application building. A multimodal approach was employed, incorporating text, video, audio, and interactive elements. Interdisciplinary collaboration between accounting experts, English instructors, and software developers ensured content accuracy, language relevance, and technical quality. The process included the development of a user-friendly interface and navigation system to enhance the learning experience.

3   Result and Discussion

3.1   Result

Needs Analysis. The needs analysis for the development of desktop-based English for Accounting learning materials revealed significant insights into students' preferences and requirements, highlighting the potential for technology-enhanced language learning (TELL) in this specialized context. The survey of 78 accounting students, examining 11 key indicators of learning preferences, demonstrated a clear inclination towards innovative, interactive, and technology-driven learning approaches.

Preference for Technology-Enhanced Learning. The overwhelming preference for learning through computer programs (86.67%) underscores the readiness of accounting students to engage with CALL materials. This finding aligns with current trends in educational technology and suggests that a well-designed desktop application could significantly enhance the learning experience. The high preference for interactive learning methods (80%) further supports the development of a CALL-based approach. Qualitative data from student interviews reinforced this preference: *"I find traditional textbooks limiting. With computer-based learning, I can access a wealth of resources, practice exercises, and real-time feedback, which significantly enhances my understanding of accounting concepts in English."* (S1).

Integration of Practical and Contextual Learning. The strong preference for practical activities or simulations (84.67%) and contextual learning through examples or case studies (83.33%) indicates a need for authentic, application-based learning experiences. This suggests that the CALL materials should incorporate real-world accounting scenarios, interactive simulations of financial processes, and case studies that bridge theoretical knowledge with practical application. An interviewee emphasized this point: *"When learning accounting terminology in English, I find it most helpful to see how these terms are used in actual financial statements or reports. It's not just about memorizing vocabulary; it's about understanding their application in real business contexts."* (S2).

Gamification and Motivational Elements. The high preference for motivational methods like games or quizzes (83.33%) presents an opportunity to incorporate gamified elements into the learning material. This could include features such as achievement badges, leaderboards, or point systems tied to completing exercises or mastering specific accounting concepts in English. A student's comment illustrated the potential impact of this approach: *"I've used language learning apps with gamification features, and I found myself much more motivated to study consistently. If we had similar engaging elements in our accounting English materials, I believe it would make the learning process more enjoyable and effective."* (S3).

Multimodal Content Delivery. The preference hierarchy for content delivery methods (videos: 76.92%, images: 69.23%, text: 62%) suggests a need for a multimodal

approach in the CALL materials. This finding indicates that while text-based content remains important, it should be supplemented with visual aids and video explanations to cater to diverse learning styles and enhance comprehension of complex accounting concepts. An interviewee provided insight into this preference: *"Accounting involves many abstract concepts that can be challenging to grasp, especially in a second language. When these concepts are explained through a combination of text, diagrams, and video tutorials, it becomes much easier to understand and remember."* (S4).

Balancing Individual and Collaborative Learning. The high preference for understanding course material through peer discussions (82%) presents an interesting challenge for desktop-based CALL materials. This finding suggests the need to explore innovative ways to incorporate collaborative elements into what is traditionally an individual learning tool. A student's comment highlighted this aspect: *"While I appreciate the flexibility of self-paced learning on my computer, I also value discussing complex accounting issues with my peers. It would be great if the learning software could somehow facilitate virtual group discussions or collaborative problem-solving sessions."* (S5).

This comprehensive needs analysis reveals a clear demand for innovative, technology-enhanced learning materials in English for Accounting. The findings suggest that an effective CALL application for this context should: 1) Leverage interactive, computer-based learning methodologies; 2) Incorporate authentic, practical scenarios and simulations; 3) Utilize gamification to enhance motivation and engagement; 4) Employ a multimodal approach to content delivery, with a strong emphasis on visual and video content; 5) Explore ways to facilitate collaborative learning within a desktop-based environment.

These insights provide a solid foundation for the development of CALL materials that not only meet the linguistic and domain-specific needs of accounting students but also align with their preferred learning styles and technological expectations. By addressing these preferences, the resulting learning materials have the potential to significantly enhance the effectiveness of English for Accounting instruction, better preparing students for the technology-driven, globalized world of modern accounting.

Design and Development of the Program. The English for Accounting desktop application was developed based on a comprehensive needs analysis, which revealed strong preferences for computer-based learning, case studies, and practical simulations. The application is structured around six core units covering essential accounting concepts: Introduction to Accounting, Financial Statements and Ratios, Tax Accounting, Auditing, Management Accounting, and Investment.

The user interface was designed for intuitive navigation and visual appeal, addressing the high preference (81.88%) for ease of use indicated in the needs analysis. The home screen provides clear access to all units and additional features like the glossary and progress tracking.

Each unit employs a multimodal approach, integrating various learning elements to cater to different learning styles. This includes comprehensive text explanations, providing a theoretical foundation while introducing relevant accounting terminology

in English. The content strikes a balance between accessibility and professional-level information, reflecting the serious nature of accounting within an engaging learning environment. The display of material units in the desktop program can be seen in Figure 1.

Figure 1. Display of material units in the desktop program
Photograph by Putu Dyah Hudiananingsih, permission by Politeknik Negeri Bali

In response to the strong preference for video-based learning (76.92%), each unit incorporates relevant video content. These videos include expert explanations of accounting concepts, demonstrations of accounting software use, and visual case studies illustrating the application of accounting principles in real-world scenarios. The video content not only enhances understanding but also makes the learning process more engaging and interactive, addressing the students' desire for dynamic learning experiences.

To support the development of listening skills in an accounting context, audio elements are integrated throughout the units. These may include recordings of professional conversations, financial report presentations, or explanations of complex accounting concepts. This feature helps students familiarize themselves with the pronunciation of accounting terms in English and improves their comprehension of verbal communication in professional contexts.

Interactive quizzes are a key feature of the application, designed to test student understanding and provide immediate feedback. These quizzes are presented in various formats, including multiple-choice questions, fill-in-the-blanks, and term-matching exercises. This variety not only keeps the assessment process engaging but also allows for comprehensive testing of different aspects of knowledge and skills. The quizzes are strategically placed throughout each unit, allowing students to regularly check their understanding and reinforce their learning. The display of quiz in unit 1 can be seen in Figure 2.
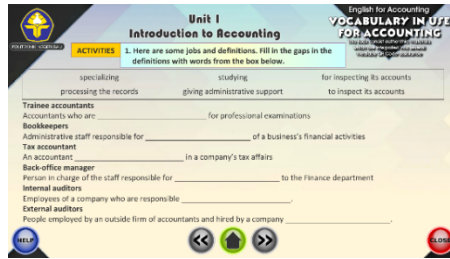
Figure 2. Display of quiz in unit 1

Photograph by Putu Dyah Hudiananingsih, permission by Politeknik Negeri Bali

A major component of the development process was the integration of case studies and practical simulations into each unit. For example, in the Financial Statements and Ratios unit, students interact with simulated balance sheets, manipulating figures and observing the effects on financial ratios in real-time. This hands-on approach provides students with practical experience in applying English accounting terminology in realistic scenarios, bridging the gap between theoretical knowledge and practical application.

The development process was highly collaborative, involving accounting content experts, English language instructors, and software developers. This interdisciplinary approach ensured that the content was not only accurate and relevant but also effectively delivered through the digital medium. Multiple rounds of testing and refinement were conducted, with feedback collected from a sample group of users. This iterative process led to continuous improvements in both content and functionality, resulting in a final product that not only meets the identified needs but also provides an intuitive and enjoyable learning experience. The end result is a comprehensive, user-friendly, and interactive desktop application for English for Accounting that aligns closely with student preferences and learning needs while preparing them for the technological and linguistic demands of the global accounting profession.

3.2   Discussion

The development and implementation of the English for Accounting desktop application based on CALL principles has shown promising results, with an overall satisfaction score of 80.76% across all aspects. This high level of acceptance aligns with the findings of Warschauer & Healey, who emphasized the potential of CALL in creating engaging and interactive learning environments (Warschauer & Healey, 1998). The results particularly support Lee assertion that CALL can enhance strategic competence for cross-cultural communication, as evidenced by the high score (85.00%) in student's increased confidence in using accounting terminology in English (Lee, 2019).

The strong preference for computer-based learning (83.08%) and the positive reception of the application's interactive features corroborate Zaman findings on the effectiveness of CALL for teaching specific language aspects (Zaman, 2022). This preference also aligns with the broader trend in educational technology, as noted by

Chun *et al*, who highlighted the increasing integration of technology in language teaching and learning (Chun et al., 2016). The application's success in this regard demonstrates the potential of CALL in addressing the specific needs of ESP students, particularly in specialized fields like accounting.

The high scores for content quality (79.58%) and usability (80.42%) support Gavranović argument that technology can enhance second language vocabulary acquisition (Gavranović, 2019). The application's multimodal approach, incorporating text, video, and audio elements, appears to cater effectively to diverse learning styles, a principle emphasized in CALL literature (Stockwell, 2009). This multifaceted approach seems particularly beneficial in the context of ESP, where learners need to grasp both language skills and specialized content.

Interestingly, the highest-rated aspect was the application's impact on motivation and learning (82.29%), with a notable emphasis on increased motivation to study advanced accounting topics in English (86.88%). This finding aligns with Öz *et al* research, which found a positive correlation between attitudes toward CALL and motivation in language learning (Öz et al., 2015). It also supports the argument that CALL can contribute significantly to learner autonomy and self-directed learning, as proposed by (Xiang-hu, 2014).

However, the relatively lower preference for online learning (55.64%) compared to other aspects presents an intriguing contrast to some existing literature. This finding somewhat contradicts the trend observed by Hafour towards increased acceptance of mobile-assisted language learning (MALL) (Hafour, 2022). It suggests that while students appreciate technology-enhanced learning, they may still value face-to-face instruction, especially in complex subjects like accounting. This preference for blended learning approaches aligns with Rilling *et al* emphasis on integrating CALL with other teaching methods (Rilling et al., 2013).

The high appreciation for case studies and practical simulations in the application (82.05% and 81.28% respectively) supports the findings of Ambrose & Palpanathan on the effectiveness of CALL in enhancing writing skills through practical applications (Ambrose & Palpanathan, 2018). It also aligns with the broader ESP principle of providing context-specific, authentic materials, as advocated by Dudley-Evans & St John (Dudley-Evans & St John, 1998). The success of these features in the application demonstrates the potential of CALL in bridging the gap between theoretical knowledge and practical application in ESP contexts.

A notable finding is the high score for increased ability to understand English accounting literature (82.50%), which supports Shao research on the effectiveness of multimedia applications in vocabulary acquisition (Shao, 2012). This result suggests that the application successfully addresses one of the key challenges in ESP - helping learners navigate domain-specific literature in the target language. It also aligns with the findings of Shao on the potential of CALL in enhancing specific language skills within specialized contexts (Shao, 2012).

While the overall results are positive, some areas for improvement are indicated. The lower scores for learning through text (65.90%) compared to video (76.92%) suggest a need for further research into optimizing text-based content in CALL applications. This disparity echoes the ongoing debate in CALL literature about the

most effective modes of content delivery in digital learning environments (Chun et al., 2016). Future developments may need to focus on enhancing the engagement and effectiveness of text-based materials within CALL applications, particularly for ESP contexts where extensive reading of specialized texts is often necessary.

4   Conclusion

In conclusion, the English for Accounting desktop application, grounded in CALL principles, has proven highly effective in meeting the specific needs of ESP students in accounting. With an 80.76% overall satisfaction rate and notable improvements in students' confidence and motivation, the application demonstrates the success of tailored CALL approaches in specialized ESP contexts. The integration of multimedia content, interactive features, and practical simulations aligns with current CALL literature while extending its applicability to ESP. Despite some areas for refinement, particularly in text-based content delivery, the results strongly support CALL's viability in enhancing ESP instruction. This study contributes significantly to the field by providing evidence for technology integration in specialized language learning and offering a model for future ESP developments. It underscores the importance of aligning technological tools with learner preferences and professional field demands, paving the way for further innovations in technology-enhanced language learning for specialized domains.

Acknowledgment

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