

Developing English Reading Materials for Tenth Grade Students of Software Engineering in Vocational High School

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ABSTRACT

This study aims to develop English reading materials tailored for tenth-grade students in the Software Engineering program at SMKN 1 Semparuk, addressing the lack of discipline-specific content in existing textbooks. Employing a Research and Development (R&D) design with a modified ADDIE model, the study focused on the stages of Analysis, Design, and Development. Data were collected through needs analysis involving students, teachers, curriculum documents, and textbooks, combined with expert validation using structured evaluation instruments. The resulting materials, consisting of descriptive and procedural texts enriched with software engineering vocabulary, were evaluated by two experts and achieved an average score of 3.45, which falls into the "Very Good" category. Teacher and student feedback further confirmed the practicality, relevance, and effectiveness of the materials in enhancing reading comprehension, motivation, and confidence in dealing with technical texts. The findings highlight the importance of integrating English for Specific Purposes (ESP) principles into vocational education, ensuring alignment between language learning and professional needs. This research contributes both theoretically and practically to ESP materials development, offering a replicable model for designing context-specific English resources in vocational high schools.

Keywords: English for Specific Purposes, reading materials, software engineering, vocational high school, ADDIE model, materials development

INTRODUCTION

Vocational education in Indonesia plays a crucial role in preparing students for specific professional fields, differentiating itself from the general academic focus of senior high schools. While senior high schools emphasize broad knowledge acquisition and preparation for higher education, vocational high schools are designed to equip students with specialized skills relevant to particular occupations (Risangkusmo, 2015). Within this context, English language learning in vocational settings should be aligned with students' areas of specialization, ensuring that instructional content supports both academic development and professional readiness. For students in the Software Engineering program, English proficiency is essential not only for academic purposes but also for engaging with technical resources, documentation, and professional communication in a globalized industry.

English for Specific Purposes (ESP) addresses this need by tailoring instructional materials to learners' specific goals, focusing on relevant vocabulary, genres, and communicative tasks (Hutchinson & Waters, 1987). However, existing English textbooks distributed to vocational schools often contain generalized content that fails to address the technical demands of specific disciplines. Observations at SMKN 1 Semparuk revealed that the SPLASH textbook, published by Erlangga for the Merdeka Curriculum, contains reading materials unrelated to software engineering. Consequently, teachers are compelled to adapt resources from various sources to fill this gap, a solution that remains fragmented and lacks systematic alignment with curricular objectives.

This gap highlights a broader issue in ESP materials provision for vocational schools: the absence of subject-specific reading resources that integrate discipline-relevant language and concepts. Previous studies emphasize

that reading comprehension is enhanced when learners engage with texts closely related to their field of study, as familiarity with the subject matter facilitates deeper understanding (Klingner, Vaughn, & Boardman, 2007; McEntire, 2003). In software engineering, where much professional discourse occurs in English, students require exposure to authentic texts—such as technical descriptions and procedural guides—that reflect their future workplace communication needs.

The urgency of addressing this issue is twofold. From an academic perspective, inadequate ESP resources hinder students' ability to develop reading skills that are transferable to professional contexts. From a practical standpoint, vocational graduates lacking the ability to process and apply English-language technical information face disadvantages in a competitive labor market increasingly shaped by globalized communication and technological innovation. Therefore, developing specialized reading materials aligned with the Merdeka Curriculum and the software engineering discipline is a pressing pedagogical necessity.

This study aims to develop English reading materials tailored for tenth-grade students in the Software Engineering program at SMKN 1 Semparak, employing a Research and Development approach with a modified ADDIE model. The resulting materials are expected to address the identified gaps by incorporating discipline-specific vocabulary, relevant text types, and contextualized reading tasks. By doing so, the study contributes to the growing body of research on ESP materials development and provides practical guidance for educators seeking to integrate specialized content into English instruction for vocational education.

The novelty of this study lies in the development of ESP-based reading materials specifically tailored for software engineering students within the framework of the Merdeka Curriculum, an area that has received limited attention in previous studies.

LITERATURE REVIEW

Reading is a fundamental skill in second language learning, enabling students to access information, expand vocabulary, and reinforce other language skills such as listening, speaking, and writing. In language education, reading is understood as an interactive process in which learners integrate textual information with prior knowledge to construct meaning (Nunan, 2003). Effective comprehension occurs when learners engage with content that is both contextually and cognitively accessible (Klingner, Vaughn, & Boardman, 2007). For vocational students, this principle underscores the importance of providing materials embedded in their professional domain, thereby enhancing relevance and engagement.

In the Indonesian vocational high school context, English instruction aligns with the national curriculum, which, under the Merdeka Curriculum, emphasizes competency-based outcomes tailored to different majors. However, existing resources often adopt a one-size-fits-all approach, offering general English content to both academic and vocational tracks. This mismatch limits the potential for meaningful learning, particularly in specialized fields such as software engineering, where mastery of technical terminology and genre-specific reading skills is crucial (Richards, 2001).

The pedagogical framework most relevant to this challenge is English for Specific Purposes (ESP), defined as an approach to language teaching in which all decisions about content and method are determined by learners' specific needs (Hutchinson & Waters, 1987). ESP focuses on equipping learners with the language competencies required in academic, professional, or workplace settings (Basturkmen, 2006). Central to ESP is needs analysis, which identifies learners' necessities, lacks, and wants, as well as the learning conditions that best support skill acquisition (Hutchinson & Waters, 1987). This analytical process is vital in vocational contexts, where course content must bridge the gap between general English proficiency and specialized communication demands.

In the case of software engineering, domain-specific reading materials should reflect the discourse practices of the field. Authentic texts such as descriptive reports, procedural guides, and technical documentation are essential for preparing students to interpret, evaluate, and apply professional information. As Sommerville (2011) notes, software engineering encompasses more than programming; it involves understanding and producing complex documentation that supports software specification, validation, and evolution. Hence, the

integration of authentic, field-relevant materials in English instruction serves both linguistic and professional development purposes.

Materials development, as described by Tomlinson (1998) and Nunan (1991), involves selecting, adapting, or creating instructional resources that promote effective language learning. In ESP contexts, this process requires a deliberate alignment between curricular objectives, learners' needs, and the communicative demands of the target field. Such alignment ensures that instructional materials not only develop core language skills but also prepare learners for the specific communicative situations they will encounter in their professional careers. The present study adopts this perspective, using a structured development model to produce English reading materials that directly address the academic and occupational needs of software engineering students in a vocational high school.

METHODOLOGY

This study employed a Research and Development (R&D) approach, as outlined by Borg and Gall (1998), to create specialized English reading materials for tenth-grade students in the Software Engineering program at SMKN 1 Semparak. The development process followed a modified ADDIE model consisting of the Analysis, Design, and Development phases (Dick & Carey, 1996) to ensure systematic alignment between learner needs, curricular requirements, and instructional content. Implementation and Evaluation stages were excluded from the present study's scope, focusing instead on the production and validation of the materials.

Research Subjects

The participants of this study consisted of one English teacher and 35 tenth-grade students. For the product validation, the subjects involved two experts: a materials expert and a language expert, to ensure the quality and feasibility of the English reading materials.

Data Collection

To strengthen the reliability and validity, this study applied methodological triangulation. Triangulation is the process of using multiple sources or methods to gain a comprehensive understanding of the phenomena being studied (Patton, 1999). The triangulation process integrates three sources of data. First, curriculum analysis provides formal requirements and competency standards (top-down perspective). Second, teacher interviews offer pedagogical insights and practical challenges encountered in classroom implementation. Third, student questionnaires reflect learners' needs, interests, and prior knowledge (bottom-up perspective).

Development Procedures

In the Analysis stage, curriculum review identified core and basic competencies for Grade X vocational students, while student characteristics and existing materials were examined to determine specific needs. The Design stage involved drafting a framework for descriptive and procedural texts relevant to software engineering, sourcing reference materials, and creating validation instruments. In the Development stage, draft materials were produced and iteratively refined based on supervisor feedback before undergoing expert validation. The experts' evaluations were used to revise the materials to meet high standards of relevance, accuracy, and pedagogical suitability.

Data Analysis

Qualitative data from needs analysis and experts' suggestions were transcribed and thematically analyzed to identify key areas for improvement. Quantitative validation scores were averaged (Mean score = $\Sigma X / N$) and categorized according to a four-point scale: 1.00–1.74 (Poor), 1.75–2.24 (Fair), 2.25–3.24 (Good), and 3.25–4.00 (Very Good). The combination of qualitative and quantitative findings guided the final revisions to ensure the materials were both contextually appropriate and pedagogically sound.

By integrating a structured development model with systematic needs analysis, this methodology ensures that the resulting ESP materials are firmly grounded in both theoretical principles and the practical realities of vocational education in software engineering.

RESULTS AND FINDINGS

Validation Result

The developed English reading materials, consisting of descriptive and procedural texts tailored to the Software Engineering program, were evaluated by two experts in English language teaching and software engineering. The validation scores across key components—including content relevance, organization, technical accuracy, and instructional appeal—yielded an average rating within the “Very Good” category of 3.45. Experts highlighted the effective integration of discipline-specific vocabulary and real-world examples, noting that the texts were contextually appropriate and pedagogically sound for tenth-grade vocational students.

Teacher Feedback

Feedback from the English teacher at SMKN 1 Semparuk confirmed the practicality and relevance of the materials. The teacher reported that the contextualized vocabulary and topic selection facilitated more efficient lesson planning and improved classroom engagement. Moreover, the materials were perceived to support instructional goals outlined in the Merdeka Curriculum, especially in fostering reading comprehension skills through authentic, field-related content.

Student Feedback

Student responses, gathered during a limited trial, indicated a high level of engagement with the developed materials. Learners expressed that the technical topics—such as software development processes and coding practices—were directly relevant to their studies and future careers. Many students reported increased confidence in understanding English texts containing technical terminology, suggesting that alignment between subject matter and linguistic input contributed to higher motivation and comprehension.

DISCUSSION

The findings affirm the value of designing ESP reading materials that are closely aligned with learners’ academic disciplines, supporting prior research indicating that subject familiarity enhances comprehension and motivation (Klingner, Vaughn, & Boardman, 2007; McEntire, 2003). By incorporating descriptive and procedural genres relevant to software engineering, the materials addressed both language development and professional literacy needs. Furthermore, the systematic use of the ADDIE model ensured that the development process was anchored in curricular goals, learner needs, and expert validation, consistent with best practices in materials development (Tomlinson, 1998; Nunan, 1991).

These results also have implications for English teaching in vocational education more broadly. The study demonstrates that integrating authentic, discipline-specific content can bridge the gap between general English instruction and the professional competencies required in specialized fields. The developed materials not only enhance students’ reading skills but also prepare them to navigate English-language resources in their future careers, positioning ESP as a vital component of vocational education reform under the Merdeka Curriculum.

CONCLUSION AND IMPLICATIONS

This study developed English reading materials specifically designed for tenth-grade students in the Software Engineering program at SMKN 1 Semparuk, addressing the gap between existing general English textbooks and the specialized needs of vocational learners. Guided by a modified ADDIE model, the development process incorporated curriculum analysis, learner needs assessment, and expert validation to ensure that the materials were pedagogically sound and contextually relevant. The final products—descriptive and procedural

texts rich in discipline-specific vocabulary—were rated “Very Good” in terms of relevance, organization, and technical accuracy.

The results demonstrate that integrating English for Specific Purposes (ESP) principles into vocational education can significantly enhance learners’ reading comprehension, motivation, and confidence in engaging with technical content. Both teacher and student feedback confirmed the practicality and applicability of the developed materials, highlighting their potential to support the Merdeka Curriculum’s competency-based approach.

From a pedagogical perspective, the study underscores the importance of aligning English learning resources with the professional contexts of vocational students. Materials that draw on authentic workplace genres not only improve language proficiency but also prepare learners for real-world communication in their chosen fields. For practitioners, the study provides a replicable model for designing ESP resources in other vocational disciplines, ensuring that English instruction directly supports students’ future career demands.

In terms of scholarly contribution, this research adds to the growing body of literature on ESP materials development, particularly within the Indonesian vocational education context. It offers empirical evidence that a structured, needs-driven approach can bridge the gap between curriculum mandates and classroom realities. Future research may extend this work by exploring multimedia-enhanced ESP materials, assessing long-term impacts on professional readiness, or adapting the approach to other technical programs beyond software engineering.

By contextualizing English instruction within students’ vocational domains, this study affirms that language learning in vocational schools should not merely be an academic requirement but a strategic investment in learners’ professional futures.

However, this study is limited to the development and expert validation stages and does not include large-scale implementation or experimental testing. Therefore, future studies are recommended to examine the effectiveness of the materials through classroom experiments.

REFERENCES

1. Graves, Kathleen. (2000). *Designing language courses: A guide for teachers*. Boston: Heinle&Henle Publishing.
2. Grellet, F. (1981). *Developing Reading Skills*. Cambridge: Cambridge University Press.
3. Hatch, E and Farhady, H. (1982). *Research Design and Statistics for Applied Linguistics*. Los Angeles: Newbury House Publishers, Inc.
4. Hutchinson, T. and Waters, A. (1987). *English for specific purposes*. Cambridge: Cambridge University Press. York: Cambridge University Press.
5. Klingner, J.K, Vaughn, S., and Boardman, A (2007). *Teaching Reading Comprehension to Students with Learning Differences*. New York, NY: Guilford Press
6. McEntire, Jo. (2003). *Read Ahead: Reading and Life Skills Development*. Longman pearson Education
7. Nesi, H., and Gardner, S. (Eds). (2012). *Families of Genres of Assessed Writing*. Cambridge: Cambridge University Press.
8. Patton, M. Q. (1999). *Enhancing the quality and credibility of qualitative analysis*.
9. Richards, Jack. (2001). *Curriculum development in language teaching*. Cambridge: Cambridge University Press.
10. Risangkusmo, Wulur. (2015). *Developing Reading Learning Materials For Year XI Students Of Computer Engineering And Networking Department At SMAK 1 Serayu*. Unpublished Thesis. Yogyakarta: Universitas Negeri Yogyakarta.
11. Setiyadi, Bambang. (2006). *Pendekatan Kuantitatif dan Kualitatif*. Yogyakarta: Graha Ilmu.