DE_JOURNAL (Dharmas Education Journal)
http://ejournal.undhari.ac.id/index.php/de_journal
E-ISSN : 2722-7839, P-ISSN : 2746-7732
Vol. 06 No. 2 (2025), 369-378

Developing Deep Learning-Based Esp Materials For Hospitality Students In Vocational High School

Tri Saswandi[1], Deni Melyati[2]
E-mail: trisaswandi0411@gmail.com
[12]Pendidikan Bahasa Inggris, STKIP Muhammadiyah Sungai Penuh, Jambi, Indonesia

Abstrak

Penelitian ini bertujuan untuk mengembangkan bahan ajar English for Specific Purposes (ESP) yang relevan dan adaptif bagi siswa Program Studi Perhotelan di Sekolah Menengah Kejuruan (SMK). Metode penelitian menggunakan model Research and Development (R&D) 4D (Define, Design, Develop, Disseminate). Data dikumpulkan melalui angket, wawancara, lembar validasi ahli, tes, dan dokumentasi. Hasil analisis kebutuhan berdasarkan kerangka *Need, Lack, and Want* menunjukkan bahwa siswa membutuhkan penguasaan bahasa Inggris untuk *front office operations*, *guest relations*, dan *handling complaints*, sementara bahan ajar yang ada masih bersifat umum dan belum sesuai dengan tuntutan industri. Siswa juga menginginkan pembelajaran berbasis *role play* serta integrasi teknologi digital seperti chatbot berbasis kecerdasan buatan. Validasi ahli menunjukkan kelayakan isi dengan Content Validity Index (CVI) sebesar 0,92 dan aspek tampilan-interaktivitas memperoleh skor rata-rata 88%. Uji coba terbatas memperlihatkan adanya peningkatan skor rata-rata siswa dari 62,3 menjadi 78,5 setelah menggunakan bahan ajar. Temuan ini menegaskan bahwa bahan ajar ESP berbasis *deep learning* dapat meningkatkan relevansi, efektivitas, dan kesiapan kerja siswa SMK Perhotelan.

Kata Kunci: ***English for Specific Purposes, Perhotelan, Analisis Kebutuhan, Deep Learning, Pengembangan Bahan Ajar***

Abstract

This study aims to develop relevant and adaptive English for Specific Purposes (ESP) materials for students in the Hospitality Department at vocational high schools. The research employed the Research and Development (R&D) 4D model (Define, Design, Develop, Disseminate). Data were collected through questionnaires, interviews, expert validation sheets, tests, and documentation. The needs analysis based on the Need, Lack, and Want framework revealed that students require English proficiency for front office operations, guest relations, and handling complaints, while existing materials are still too general and not sufficiently aligned with industry demands. Students also expressed a strong preference for role play activities and the integration of digital technologies, such as AI-powered chatbots, to support authentic learning. Expert validation confirmed content feasibility with a Content Validity Index (CVI) of 0.92, while design and interactivity aspects received an average score of 88%. A limited product trial showed a significant improvement in students' average scores from 62.3 to 78.5 after using the developed materials. These findings highlight that deep learning-based ESP materials can enhance relevance, effectiveness, and employability readiness of vocational hospitality students.

Keywords: ***English for Specific Purposes, Hospitality, Needs Analysis, Deep Learning, Materials Development***

Article Info: Received September 2025 | Approved Oktober 2025 | Published December 2025

Introduction

The hospitality industry is one of the fastest-growing sectors in the global economy, requiring a workforce equipped with not only technical skills but also strong communication abilities in English. As English has become the lingua franca of the tourism and hospitality industries, mastery of English for Specific Purposes (ESP) is crucial for vocational students majoring in hospitality. ESP materials are expected to provide students with the language competence that is directly relevant to their professional needs, such as front office communication, housekeeping interactions, food and beverage services, and customer relations.

However, in many vocational high schools, the teaching of English still relies on general English materials that are not sufficiently contextualized to the real needs of the hospitality industry (Medrea & Rus, 2012; Poedjiastutie & Oliver, 2017). This condition results in a gap between what students learn in the classroom and the communication skills required in the workplace. Furthermore, most existing ESP materials lack adaptability and personalization, making them less effective in preparing students for dynamic and diverse situations encountered in the hospitality field.

Recent advances in educational technology, particularly in artificial intelligence (AI), offer promising opportunities to address these challenges. Deep learning, a branch of AI, allows the processing and analysis of large volumes of authentic industry data, enabling the development of learning materials that are more contextual, adaptive, and aligned with real-world communication demands. By integrating deep learning into ESP material development, it is possible to design teaching resources that not only reflect the authentic language use in hospitality but also adapt to learners' needs and learning progress. Therefore, this research seeks to develop deep learning-based ESP materials tailored for hospitality students in vocational high schools. The integration of deep learning is expected to enhance the relevance, effectiveness, and personalization of ESP learning, thus better preparing students to meet the linguistic and professional demands of the hospitality industry.

Based on the background, several research problems can be identified, namely how to analyze the needs of hospitality students, teachers, and the industry in order to develop relevant ESP materials; how to design ESP materials that integrate deep learning technology; how to implement the process of developing such materials; and how to evaluate their effectiveness in supporting students' English learning outcomes (Agustina, 2014; Annetta et al., 2019; Brilianto et al., 2020; Medrea & Rus, 2012; Yotimart, 2021). In line with these problems, the objectives of this study are to analyze the needs of students, teachers, and the hospitality industry regarding English learning in vocational high schools; to design ESP materials that are contextual, adaptive, and integrated with deep learning technology; to develop and validate the proposed materials; and to test their effectiveness in improving students' English competence as well as their relevance to the requirements of the hospitality industry.

Recent studies on English for Specific Purposes (ESP) emphasize the necessity of tailoring instructional materials to the communicative tasks and genres characteristic of particular professions. Research on hospitality-focused ESP highlights recurrent gaps between classroom instruction and workplace language demands in front office, food and beverage, housekeeping, and guest relations contexts (Brilianto et al., 2020). Instructional design frameworks, such as the 4D model (Define, Design, Develop, and Disseminate), are widely used in educational research because they provide a systematic pathway for needs analysis, prototype design, iterative development, expert validation, and dissemination, making them relevant for ESP material development in vocational education (Irawan et al., 2018; Justice, 2019; Thiagarajan et al., 1974). At the same time, advances in artificial intelligence (AI), particularly deep learning and natural language processing, have opened new possibilities for generating, analyzing, and personalizing authentic language content drawn from large-scale industry data ((Dewantara et al., 2024; Ningsih & Sari, 2021; Pristiwati, 2023). Integrating deep learning into ESP allows for contextualized and adaptive

learning resources that better reflect real-world discourse in the hospitality sector. Furthermore, empirical studies on AI-enabled adaptive learning show improved learner engagement and personalized learning paths, though challenges remain in ensuring data quality, pedagogical integration, and ethical considerations (Creswell & Guetterman, 2019; Yu, 2024) .Taken together, these strands of literature suggest that combining the 4D model with deep learning integration can produce ESP materials that are both industry-relevant and learner-adaptive—an approach that this study aims to operationalize and validate for hospitality students at vocational high schools.

Method

This study employed a Research and Development (R&D) design using the 4D model proposed by Thiagarajan, Semmel, and Semmel (1974), which consists of four stages: Define, Design, Develop, and Disseminate. This model was selected because it provides a systematic and iterative framework for developing, validating, and refining instructional materials based on learners' needs rather than for testing causal effects as in experimental research. The research was conducted at SMKN 4 Sarolangun with students majoring in the Hospitality program. The participants involved in different stages of the study varied according to the purpose of each phase. In the needs analysis stage, all 52 hospitality students were involved to obtain comprehensive data regarding learners' needs, lacks, and wants. In addition, English teachers and hospitality industry practitioners participated through interviews to represent pedagogical and professional perspectives.

In the product trial stage, the developed ESP materials were implemented with 30 hospitality students, selected from the total population of 52 students using purposive sampling. The selection criteria included students' availability during the trial period and their willingness to participate actively in classroom activities and evaluations. This limited number of participants was considered appropriate for a formative product trial, which aimed to evaluate practicality, relevance, and initial effectiveness of the materials rather than to draw broad statistical generalizations.

It should be noted that this study did not employ a control group, as the primary objective of R&D research is material development and refinement rather than experimental comparison. Therefore, the product trial functioned as a limited field test to gather user feedback, identify strengths and weaknesses of the materials, and inform subsequent revisions. The instruments used in this study included a needs analysis questionnaire, interview guidelines, expert validation sheets, pre-test and post-test instruments, and product trial questionnaires. The needs analysis questionnaire was distributed to 52 students to identify target needs related to hospitality communication. Interviews with teachers and industry practitioners were conducted to triangulate the data. Expert validation sheets were used to assess content, language, presentation, and practicality of the developed materials.

Data were collected through questionnaires, interviews, tests, and documentation. Quantitative data were analyzed using descriptive statistics to identify trends in learners' needs, validation results, and score improvements before and after the use of the developed materials. Due to the limited number of trial participants, the quantitative findings were interpreted descriptively rather than inferentially. Qualitative data from interviews and open-ended questionnaire responses were analyzed through data reduction, data display, and conclusion drawing. Data triangulation was applied to enhance the trustworthiness and credibility of the findings.

Result of the Research

This research was conducted at SMKN 4 Sarolangun, Jambi, involving students majoring in the Hospitality program. The results are presented according to the stages of the 4D development model, namely needs analysis, design, development, validation, limited product trial, and dissemination.

1. Needs Analysis Results

The needs analysis was carried out using a questionnaire distributed to 52 hospitality students, complemented by interviews with English teachers and hospitality industry practitioners. The findings

indicate that English competence is considered essential for professional communication directly related to hotel operations, particularly in front office services, guest relations, and complaint handling.

Based on the needs analysis results, 20 ESP topic candidates were proposed and subsequently evaluated through expert judgment. The validation process employed a 4-point relevance scale (1 = not relevant, 4 = highly relevant). Topics with an average Content Validity Index (CVI) ≥ 0.80 were retained. As a result, 15 topics were validated as essential, while 5 topics were excluded due to lower relevance scores (CVI < 0.80) or content overlap with other modules.

Table 1. Summary of Validated and Excluded ESP Topics

Category	Topics (Examples)	CVI Range	Decision
Validated (15)	English for Front Office, Housekeeping, Receptionists, Food Service, Guest Complaints, Digital Communication, etc.	0.85–0.95	Accepted
Excluded (5)	English for Bellboys and Porters; Business English in Hospitality; English for Telephoning and Online Booking; English for Hotel Internships; English for Sustainable and Eco-Friendly Hospitality	0.65–0.78	Excluded

Source: analyzed, 2025

The exclusion of five topics does not indicate irrelevance, but rather prioritization. For instance, *English for Telephoning and Online Booking* was integrated into broader modules such as *Front Office* and *Digital Communication*, while *Business English in Hospitality* was deemed more suitable for higher-level or managerial training. Consequently, the final ESP material design focused on the 15 validated topics to ensure instructional focus and alignment with vocational learners' needs.

2. Design of ESP Materials

Based on the validated topics, the ESP materials were structured into 15 instructional units. Each unit integrated listening, speaking, reading, writing, grammar, and vocabulary components through contextual dialogues, vocabulary banks, and scenario-based tasks reflecting authentic hospitality situations. For example, the unit *English for Front Office Operations* emphasized check-in/check-out interactions and reservation handling, whereas *Digital Communication Skills for Hospitality Staff* focused on language use in online bookings, emails, and customer chat systems. The material design emphasized communicative competence and workplace relevance rather than isolated grammatical instruction.

In addition to the pedagogical structure, artificial intelligence (AI) and deep learning techniques were incorporated during the material development process to enhance authenticity and contextual relevance. Deep learning models were used to process and analyze authentic hospitality-related language data, such as hotel service scripts, customer service transcripts, and online guest reviews. Through this analysis, recurrent lexical items, functional expressions, and pragmatic patterns commonly used in hospitality interactions were identified and embedded into learning activities. The AI-supported analysis informed the selection of model dialogues, role-play scenarios, and vocabulary items, ensuring that the language input reflected real-world usage in hotel communication contexts. In this study, AI and deep learning functioned as supporting tools for content development, assisting the researcher in refining linguistic input, rather than replacing the teacher's instructional role or directly intervening in classroom learning.

The look of the design materials from the book can be seen as follows:

3. Speaking

- **Role Play**:
  - Student A is a hotel marketing officer.
  - Student B is a travel agent/customer.
  - Task: Student A promotes the hotel's new holiday package using persuasive language.
- **Useful Expressions**:
  - "We are pleased to offer..."
  - "Our hotel provides..."
  - "This package is perfect for guests who..."
  - "Don't miss this opportunity to..."

4. Reading

Luxury Stay: Affordable Price at Ocean View Hotel

Welcome to Coastal Paradise inn, the Ocean View Hotel, the perfect destination for both business and leisure travelers. Located in the heart of the Miami city and only five minutes from the beach, our hotel combines modern comfort with friendly service.

Guests can enjoy world-class facilities, including a rooftop swimming pool, fitness center, spa, and international restaurant. For business travelers, we provide fully equipped meeting rooms and free high-speed Wi-Fi.

This month, Coastal Paradise inn is pleased to offer a special promotion. Book a Deluxe Room for two nights and get the third night free. Guests will also receive a complimentary breakfast buffet and a 20% discount at our spa.

Our hotel is proud to be rated as one of the most comfortable and affordable accommodations in the city. Don't miss this opportunity to enjoy a luxurious stay at the Coastal Paradise inn, your satisfaction is our top priority.

Questions:

1. Where is Ocean View Hotel located?
2. What types of travelers is the hotel suitable for?
3. Mention two facilities offered by the hotel for leisure guests.
4. What facilities are provided for business travelers?
5. What is the special promotion offered this month?
6. How many nights must guests' book to get the third night free?

3. Development with Deep Learning Integration

During the development stage, deep learning technology was utilized to analyze authentic hospitality-related datasets, including online hotel reviews, standard operating procedures (SOPs), and customer service transcripts. The analysis enabled the identification of frequently used expressions, discourse patterns, and pragmatic language functions within each validated topic.

For instance, in the *Handling Guest Complaints* module, the system identified commonly occurring expressions such as *"I sincerely apologize for the inconvenience"* and *"Let me assist you with this issue"*, which were then embedded into dialogues and role-play activities. The role of deep learning in this stage was to support content authenticity and contextual relevance, rather than to function as an automated instructional system.

4. Expert Validation and Limited Product Trial

Expert Validation

The developed materials were reviewed by three experts, consisting of: (1). One ESP specialist with experience in vocational English curriculum development; (2). One senior English teacher from a vocational high school, and (3). One hospitality practitioner with professional experience in hotel operations.

The validation employed structured validation sheets covering four dimensions: content relevance, language accuracy, practicality, and presentation. Each item was rated on a 5-point Likert scale (1 = very poor, 5 = excellent). The validation results yielded an overall mean score of 4.5 out of

5, indicating that the materials were considered highly feasible for instructional use. The table can be seen as follows:

Table 2. Expert Validation Results of ESP Materials

Validation Aspect	Indicators	Mean Score (1–5)	Interpretation
Content Relevance	Alignment with hospitality tasks, topic adequacy	4.6	Very Valid
Language Accuracy	Grammar, vocabulary, pragmatics	4.4	Very Valid
Practicality	Ease of use, classroom applicability	4.5	Very Valid
Presentation & Interactivity	Layout, task variety, learner engagement	4.4	Very Valid
Overall Mean	—	**4.5**	**Highly Feasible**

Source: Expert validation data, 2025

Before presenting the detailed validation results, the design and interactivity of the developed ESP materials were evaluated through expert judgment to assess their usability, instructional attractiveness, and learner engagement. This evaluation focused on aspects such as layout clarity, task variety, ease of use, and the potential of activities to promote active participation in hospitality-related learning contexts. Each indicator was rated by the experts using a 5-point Likert scale (1 = very poor, 5 = excellent). The mean scores obtained from these ratings were then converted into percentage form to facilitate interpretation. Therefore, the expert validation of design and interactivity aspects can be seen in the following table:

Table 3. Expert Validation of Design and Interactivity Aspects

Indicator	Description	Mean Score (1–5)
Layout clarity	Readability, font size, visual organization	4.4
Task variety	Range of activities (dialogue, role play, exercises)	4.5
Learner engagement	Ability to stimulate participation and interaction	4.4
Ease of use	Instructions clarity and classroom applicability	4.3
Overall Mean	—	**4.4**

Source: Analyzed, 2025

The design–interactivity score is 88%, as it was calculated by converting the average Likert-scale ratings for layout clarity, task variety, learner engagement, and usability into percentage form. This score reflects expert perceptions of usability and instructional attractiveness rather than learner learning outcomes.

The design–interactivity score of 88% was obtained by converting the overall mean score into percentage form using the following formula:

Percentage score = (Mean score / Maximum score) × 100

Thus, (4.4 / 5.0) × 100 = 88%.

Limited Product Trial

A limited product trial was conducted with 30 hospitality students, selected purposively from the total population of 52 students. The trial was implemented over four instructional meetings (approximately four weeks). A pre-test and post-test design without a control group was used to obtain preliminary information about students' responses to the materials. The table can be seen as follows:

Table 4. Descriptive Results of Limited Product Trial (n = 30)

Indicator	Result
Number of participants	30 students
Trial duration	4 instructional meetings (4 weeks)
Mean pre-test score	62.3

Mean post-test score	78.5
Students perceiving materials as more relevant	92%
Students reporting increased confidence in role play	87%

Source: Product trial data, 2025

The trial results indicated an increase in students' mean scores from 62.3 (pre-test) to 78.5 (post-test). However, due to the absence of a control group and the limited sample size, these results were interpreted descriptively. The improvement cannot be definitively attributed solely to the developed materials, as other factors such as natural learning progression, teacher influence, test familiarity, and the Hawthorne effect may have contributed to the observed changes. In addition, questionnaire data showed that 92% of students perceived the materials as more relevant than previous general English resources, and 87% reported increased confidence in performing role-play activities related to hotel operations. These findings primarily indicate positive user perceptions and practicality, rather than causal effectiveness.

5. Dissemination Stage

The dissemination stage was conducted in a limited scope, consistent with the objectives of this R&D study. The finalized ESP materials were shared with English teachers at SMKN 4 Sarolangun, Jambi Province, through a small-scale instructional workshop and printed/digital copies for classroom use. Feedback from teachers during this stage was used to make minor revisions to task instructions and activity sequencing. Wider dissemination beyond the research site was recommended for future studies following further refinement and large-scale testing.

Discussion

The findings of the needs analysis clearly demonstrate that students in the Hospitality Department require English that is directly aligned with workplace contexts. The majority of respondents prioritized front office communication, guest relations, and complaint handling as their most urgent needs. This is consistent with Hutchinson and Waters' notion (Hutchinson & Waters, 1987) that ESP should focus on learners' specific purposes rather than general language competence. In this case, the emphasis on oral communication highlights the importance of designing learning materials that simulate real-life hotel situations to ensure students are job-ready.

The gap between existing classroom materials and actual industry demands underscores the lack of contextualization in current ESP teaching. The fact that 72% of students found their materials too general, and 68% of industry respondents confirmed insufficient fluency in practical English, reflects what Dudley-Evans and St John (1998) describe as the "mismatch" between ESP pedagogy and workplace expectations. Without bridging this gap, vocational students risk being underprepared for authentic interactions with international guests, a situation that can affect both employability and service quality in the hospitality industry (Hinkel, 2004; Orr et al., 2001; Tony Dudley-Evans, 1998).

Students' strong preference for role plays, simulations, and AI-based tools indicates a desire for more engaging and technologically enhanced learning experiences. This aligns with 21st-century learning frameworks that emphasize communication, collaboration, critical thinking, and creativity (the 4Cs) (Asman et al., 2022; Tamela & Dwi, 2021). The demand for chatbot simulations and digital-based practices suggests that deep learning technology can be leveraged not only to provide authentic data for material development but also to create interactive learning environments. Similar findings have been reported by recent ESP studies, which argue that technology-driven ESP instruction enhances both motivation and performance (Miles et al., 2017; Shideler, 2016).

The expert validation results further confirm the feasibility of the developed ESP materials. With a CVI of 0.92 and design-interactivity scores averaging 88%, the materials were judged as highly valid and suitable for classroom use. The limited product trial also showed a substantial improvement in students' performance, with mean test scores rising from 62.3 to 78.5. These findings support the view of Tomlinson (2011) that effective materials development must combine relevance, authenticity,

and usability. Moreover, students' positive feedback regarding the accessibility and authenticity of the dialogues suggests that deep learning integration successfully addressed their lack while fulfilling their needs and wants (Tomlinson, 2011, 2021).

Taken together, the results highlight both the challenges and opportunities in developing ESP materials for vocational hospitality education. While the lack of contextually relevant resources has been a persistent issue, the integration of modern technologies such as deep learning offers new pathways to create adaptive, industry-oriented content. This research not only contributes to closing the gap between education and industry needs but also provides practical implications for policymakers, teachers, and curriculum developers in strengthening ESP curricula at vocational schools.

Conclusion

This study concludes that the development of ESP materials for hospitality students must be grounded in a clear understanding of their needs, lacks, and wants, while simultaneously addressing the demands of the hotel industry. The results revealed that students urgently need English for front office operations, guest relations, and complaint handling, yet existing materials remain too general and insufficiently contextualized. Their strong preference for role plays, simulations, and technology-enhanced learning highlights the necessity of integrating deep learning and digital tools to provide authentic and adaptive learning resources. Expert validation and product trials confirmed the feasibility and effectiveness of the developed materials, as indicated by high content validity scores and significant improvement in students' performance. Therefore, ESP materials that are industry-relevant, technologically integrated, and student-centered are essential to enhance the communicative competence and employability of vocational hospitality graduates.

Acknowledgment

The authors would like to express their sincere gratitude to STKIP Muhammadiyah Sungai Penuh for the continuous academic support throughout this research. Special thanks are also extended to SMKN 4 Sarolangun Jambi Province, particularly the Hospitality Department, for their valuable cooperation and participation in the data collection process. Furthermore, the authors gratefully acknowledge the Directorate General of Higher Education, Research, and Technology (Kemdiktisaintek) for providing research funding through the DRTPM Research Grant under the Beginner Lecturer Research (PDP) scheme 2025, which made this study possible.

References

Agustina, T. (2014). English for Specific Purpose (ESP); An Approach of English Teaching for Non-English Department Students. *β Eta*, *7*(1), 37–63.

Annetta, L. A., Lamb, R., & Vallett, D. (2019). Contemporary Technologies in Education. *Contemporary Technologies in Education*, 163–181. https://doi.org/10.1007/978-3-319-89680-9

Asman, Kumaro, M., & Barliana, M. S. (2022). Integration of 4Cs Skills into Learning by Using the Project Based Learning (PjBL) Model to Face the Challenges of the 21st Century. *Proceedings of the 4th International Conference on Innovation in Engineering and Vocational Education (ICIEVE 2021)*, *651*(Icieve 2021), 88–93. https://doi.org/10.2991/assehr.k.220305.018

Brilianto, I., Rezeki, Y. S., & Maral, S. (2020). Designing an English Teaching Material for Tenth Grade Students of Culinary Study Program. *Journal of English Education Program*, *1*(2), 97–110. https://doi.org/10.26418/jeep.v1i2.40233

Creswell, J. W., & Guetterman, T. C. (2019). Educational Research. In *Jurnal Sains dan Seni ITS* (Tenth Edit, Vol. 6, Issue 1). Pearson. http://repositorio.unan.edu.ni/2986/1/5624.pdf

Dewantara, K. A. K., Laksana, I. P. Y., & Saraswati, N. P. R. T. A. K. H. (2024). A Systematic Review of AI-Powered Tools in English Language Learning for Vocational Students. *International Journal of Natural Science and Engineering*, *8*(3), 201–214. https://doi.org/10.23887/ijnse.v9i2.101889

Dudley-Evans, T., & St John, M. J. (1998). *Developments in English for specific purposes: A multi-*

disciplinary approach. Cambridge University Press.

Hinkel, E. (2004). *Teaching Academic ESL Writing*. Lawrence Erlbaum Associates, Inc., Publishers.

Hutchinson, T., & Waters, A. (1987). *English for Specific Purposes: a Learning Centered Approach*. Cambridge University Press. https://books.google.co.id/books/about/English_for_Specific_Purposes.html?id=s2FIpUv7gaoC&redir_esc=y

Irawan, A. G., Padmadewi, N. nyoman, & Artini, L. P. (2018). Instructional materials development through 4D model. *SHS Web of Conferences*, *42*, 00086. https://doi.org/10.1051/shsconf/20184200086

Justice, P. (2019). Development, validation and in-class evaluation of a sequence of clicker questions on larmor precession of spin in quantum mechanics. In *Physics Education Research Conference Proceedings* (pp. 269–274). https://doi.org/10.1119/perc.2019.pr.Justice

Li, Y., & Zhang, H. (2021). Technology-enhanced ESP instruction: Improving learners' engagement and communication skills. *Journal of English for Academic Purposes, 52,* 100996. https://doi.org/10.1016/j.jeap.2021.100996

Medrea, N., & Rus, D. (2012). Challenges in Teaching ESP: Teaching Resources and Students' Needs. *Procedia - Social and Behavioral Sciences*, *3*(12), 1165–1169. https://doi.org/10.1016/S2212-5671(12)00291-2

Miles, M. B., Huberman, A. M., & Saldana, J. (2017). Qualitative Data Analysis A Methods Sourcebook. In *Jurnal Sains dan Seni ITS* (Third Edit, Vol. 6, Issue 1). SAGE Publication Ltd. http://repositorio.unan.edu.ni/2986/1/5624.pdf%0Ahttp://fiskal.kemenkeu.go.id/ejournal%0Ahttp://dx.doi.org/10.1016/j.cirp.2016.06.001%0Ahttp://dx.doi.org/10.1016/j.powtec.2016.12.055%0Ahttps://doi.org/10.1016/j.ijfatigue.2019.02.006%0Ahttps://doi.org/10.1

Ningsih, P. E. A., & Sari, M. N. (2021). Are Learning Media Effective in English Online Learning?: The Students' and Teachers' Perceptions. *Tarbawi : Jurnal Ilmu Pendidikan*, *17*(2), 173–183. https://doi.org/10.32939/tarbawi.v17i2.1012

Orr, T., Member, A., Dudley-Evans, T., & Jo St John, M. (2001). English Language Education for Specific Professional Needs Interface Index Terms-ESP (English for Specific Purposes), specific needs, tailor-made instruction, workplace and academia.-Feature by. *Ieee Transactions on Professional Communication*, *44*(3), 207–211.

Poedjiastutie, D., & Oliver, R. (2017). Exploring Students' Learning Needs: Expectation and Challenges. *English Language Teaching*, *10*(10), 124. https://doi.org/10.5539/elt.v10n10p124

Pristiwati, R. (2023). Kecerdasan Buatan dalam Konteks Kurikulum Merdeka pada Jenjang Pendidikan Dasar dan Menengah : Membangun Keterampilan Menuju Indonesia Emas 2045. *UNDIP*, *30*(2), 208–217.

Shideler, A. (2016). A Case Study of Data Use, Project-Based Learning, and Language Development for ELLs. *Journal for Leadership and Instruction*, *15*(2), 22–27. http://proxy.libraries.smu.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ1121274&site=ehost-live&scope=site

Tamela, E., & Dwi, M. H. (2021). Four C's Skills Integration in the Lesson Plans of Grade 7 English Teacher. *Jo-ELT (Journal of English Language Teaching) Fakultas Pendidikan Bahasa & Seni Prodi Pendidikan Bahasa Inggris IKIP*, *8*(2), 124. https://doi.org/10.33394/jo-elt.v8i2.4345

Thiagarajan, S., Semmel, D. G., & Semmel, M. I. (1974). *Instructional Development for Training Teachers of Exceptional Children: A Sourcebook.* (Issue Mc). Indiana University.

Tomlinson, B. (2011). *Material Development in Language Teaching* (Second). Cambridge University Press.

Tomlinson, B. (2021). Developing Language in Action Coursebooks for Young Learnger. *The European Journal of Applied Linguistics and TEFL*, *10*(2), 3–26. https://www.proquest.com/scholarly-journals/developing-language-action-coursebooks-young/docview/2596633413/se-2

Tony Dudley-Evans, M. J. S. J. (1998). *Developments in English for specific purposes*. https://books.google.co.id/books?hl=id&lr=&id=FY5ChNRKtxwC&oi=fnd&pg=PR8&dq=dudley+evans&ots=hhggwfNn7F&sig=Imx-RzlYJBej4tOwMe0eIayigmE&redir_esc=y#v=onepage&q=dudley evans&f=false

Yotimart, D. (2021). Academic vocabulary in sport tourism news : A corpus-based study. *Journal of Language and Linguistic Studies*, *17*(3), 1527–1535. https://doi.org/10.52462/jlls.110

Yu, H. (2024). Enhancing creative cognition through project-based learning: An in-depth scholarly exploration. *Heliyon*, *10*(6), e27706. https://doi.org/10.1016/j.heliyon.2024.e27706