

English Module for Railway Engineering: a Need Analysis

Armyta Puspitasari¹, Ainun Fikria², Edi Nyoto Marsusiadi³, Septiana Widi⁴, Ima Widiana⁵

¹Railway Track and Construction Technology, Politeknik Perkeretaapian Indonesia Madiun, Indonesia ² Railway Management Technology, Politeknik Perkeretaapian Indonesia Madiun, Indonesia

³ Railway Mechanical Technology, Politeknik Perkeretaapian Indonesia Madiun, Indonesia

Article Info

Article history:

Received June 16, 2024

Revised Agustus 12, 2024

Accepted September 14, 2024

Keywords:

Module
Engineering
Need Analysis

ABSTRACT (10 PT)

The purpose of this study was to determine the need analysis of English module for railway engineering. To know the students' need, this study used a questionnaire and observation to collect the data then it described qualitatively. In listening skill, the students need about the monolog including with videos. The procedure would be identifying the content of conversation; (2) In speaking, the students would need to work in pair in practicing the dialog, and the procedure was discussing and presenting the material; (3) In reading the text would include the vocabularies about railway building and construction context and the procedure was about reading and answering the questions based on the text. (4) In writing, the material should be about writing the railway track component. The procedure was writing paragraphs; (5) In vocabularies. The students' need to learn about parts of speech, and the procedure was identifying the meaning based on the language context; (6) the length of the material in 100-200 words (intermediate); (7) The setting of teaching and learning process was in the class and at the laboratories/workshop; (8) The lecturers' role should be Creating a pleasant atmosphere so that students are able to solve problems actively and are able to do their tasks well; and (9) The students' role needs to discuss and participate actively during teaching and learning process

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Corresponding Author:

Armyta Puspitasari
Railway Track and Construction Technology
Politeknik Perkeretaapian Indonesia Madiun, Indonesia
Email: armyta@ppi.ac.id

1. INTRODUCTION

English subjects in non-English departments of higher education in Indonesia have been popularly referred to as General Educational Courses. Over time, these English courses in non-English departments have been further specified into English for Specific Purposes (ESP). Richards and Schmidt (2002) define ESP as "a language course or program of instruction in which the content and aims of the course are fixed by the specific needs of a particular group of learners." ESP is designed to prepare learners to use English in academic settings (e.g., students from various fields), professional contexts (e.g., doctors, engineers, and nurses), or workplace environments (e.g., technicians). Basturkmen (2010) further identifies ESP as the teaching of English required for learners to function effectively in their respective disciplines, professions, or workplaces.

The Indonesian Railway Polytechnic, a non-English department, offers four majors focused on technical and railway engineering. Consequently, the English subject in this institution is tailored to English for Occupational Purposes (EOP). Students learn English in a practical manner to enable them to apply it effectively in their professional development and job-related tasks. Harmer (2004) explains that English for Specific Purposes is applied in situations where students have specific reasons for learning the language, and it is typically designed to address learners' needs. Therefore, needs analysis plays a critical role in designing and implementing a language program.

While student teaching is a key element of the learning process, the teaching approach must also consider the specific needs of the students. Koşucu (2017) emphasizes that “to examine the characteristics that are valued in the sense of student teaching, the student is considered for the analysis. In this analysis, students’ cognitive, affective, and psychomotor domains, as well as their qualifications, background levels, and environmental factors, can be taken into account.”

Needs analysis is an essential component of course development, yet it often appears to be overlooked. It is widely regarded as the cornerstone of English for Specific Purposes (ESP) and serves as a valuable tool not only for understanding students’ needs but also for supporting the implementation of educational policies. Needs analysis enables English lecturers to adjust syllabi, develop materials, and refine methodologies to bridge the gap between lecturers’ and learners’ expectations. Unfortunately, despite its importance, needs analysis is frequently neglected in practice.

In light of the theories discussed above, a significant issue has been identified at the Indonesian Railway Polytechnic, particularly in the Building and Railway Construction major. By the academic year 2022/2023, while a syllabus had been developed, the materials provided to students were created independently by the lecturers. This highlights the need for material development that aligns with students’ needs and the specific context of railway construction. Based on this issue, the researcher aims to design material development for students in the Building and Railway Construction major. This effort seeks to align the teaching and learning process with students’ needs and to assist lecturers in focusing on the English teaching process more effectively.

2. METHOD

This research was designed using the Research and Development (R&D) approach. Research and Development (R&D) is a process of developing and validating products used in learning processes (Asim, 2001). Research and development was defined as a process aimed at producing products and concluding with an evaluation process (Sugiyono, 2008). This research adopted the Instructional System Design (ISD) model by Seels and Glasgow. This model consisted of three phases: needs analysis, instructional design, and implementation and evaluation.

The first phase was needs analysis. The aim of this phase was to identify the needs assessment (goals), performance analysis (instructional requirements), and context analysis (constraints, resources, and learner characteristics). The second phase was instructional design, which included all steps related to design, development, and formative evaluation. The third phase was formative evaluation. Since this research was the initial stage of the five steps mentioned above, the research conducted focused on needs analysis.

The subjects of this research were first-semester Diploma III students of Railways Building and Track Technology. Research data were obtained using questionnaires and structured interviews with lecturers and students to explore their learning needs. The results of the study were reported in the form of descriptive statistics, which included the presentation of statistical data and an explanation of these data.

3. RESULTS

To begin the research, the researcher did observation to the first semester students in Major Railway Building and Construction to know the English learning materials had taught by teacher and what the materials that the students had learnt in the past few years. The result found out that the syllabus made for the first semester students in English I lesson was made for Railway building and construction major, but the material given to the teacher was taken from the module made to teach English in general. The observation also gained that the students in railway building and construction major was taught by different lecturers. There were 2 classes taught by 2 different lecturers, even though it has the syllabus, the material given somehow can be different in the proses of teaching and learning. Thus, the researcher summed up that there should be needed to develop the English learning materials for railway building and construction major to maximize the teaching and learning process.

Beside doing observation, the researcher also made a questionnaire to know the students’ need in learning English for the first semester. The questionnaire gained from 48 first semester students of Railway Building and Construction. The result of the questionnaire gained to know the student’s target and learning needs. The result of the questionnaire described in the following explanation.

a. Target Needs

Target needs in this research were aimed to know the students’ necessities, lack and want in learning English.

1) Necessities

The necessities of the questionnaire used to find out the importance of English for the students, background knowledge of the students, and the objectives of learning English. The students stated that English is important for them during their study, this can be shown in the table below:

Table 1. The importance of English

Statement	Strongly Disagree	Disagree	Agree	Strongly Agree
	1	2	3	4
English is important to be learnt.	0	0	2	46

Based on the data above, it showed that 4,2% of the participants state agree that English is important to be learnt, and the rest of 95,8% of the respondents stated strongly agree. Beside, the questionnaire also gained the frequency of English used by the students. The data shows that 54,2% of the students stated seldom, 43,8% stated often, and 2,1% stated always. The detailed data can be seen in the following table.

Table 2. The frequency of using English

Statement	Never	Seldom	Often	Always
	1	2	3	4
Frequency of using English	0	26	21	1

From the data above, it can be concluded that most of the students seldom in using English in their daily life. The other data that taken was about the aim of participants to learn English. It can be seen as the following table.

Table 3. The aims of learning English

No	Statement	Amount
1	I can get a lot of vocabulary in English according to my major, and can support my work in the future	81,3%
2	I have the ability to speak English both orally and in writing for the benefit of my future work.	89,6%
3	I can be accepted to work overseas	25%
4	I can pass the TOEFL/TOIEC test etc	45,8%
5	To have soft skills that can be useful in recruitment both national and international.	64,6%

It can be concluded that most of participants (89,6%) aimed to have the ability to speak and write in English, and also 81,3% aimed to master vocabularies that appropriate to their study program that support their future job.

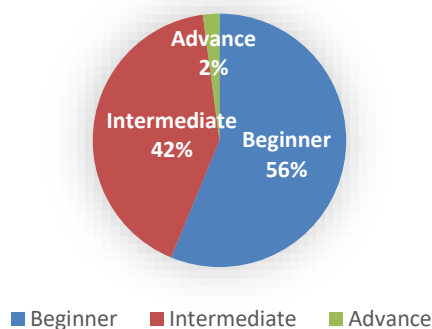
2) Lack

Knowing the lack of the participants is intended to develop the material that would be given to the students. Related to the English skills (listening, speaking, reading and writing), the struggles that the participants faced all this time that the hardest English skill stated by the participants was speaking that reached 79,20%, the second skill was listening at 56,30%, than writing at 35,40%, and the easiest skill was reading at 16,70%.

3) Want

To know what the students know, the following data were about the English level of the participants, and how their expectation of English mastery.

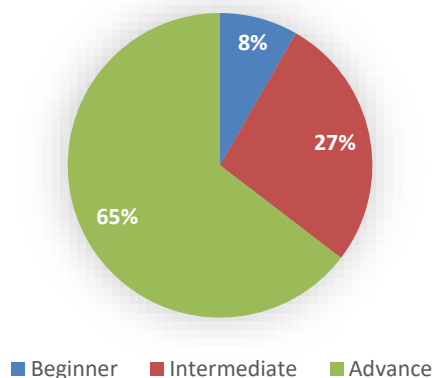
The ability to learn English currently at the level:



Most of the participants were in the level of beginner that reached 56% of the students, 42% were in intermediate, and 2% were in advance.

And to support the participants' education on campus and career, the expectation of the participants stated in the following chart.

The ability to learn English should be at the level of:



Mostly of the participants expect that their English mastery will be at level advance (65%). And the rest of the students stated 27% at intermediate, and 8% at beginner will be enough.

b. Learning Needs

In the learning needs, the researcher aimed to know the input, procedure, setting, lecturers' and students' role on the materials that would be designed.

1) Input

The topic that the students' need in the first semester stated that The top choice of the participants was the topic about building and railway track technology (79,2%), than the topic about general (66,7%), technology (45,8%), and about daily activities (41,7%). The length of the words that the students than can be afford was in 100-200 words (intermediate).

2) Procedure

In procedure, it will be classified in each skill, those are:

a) Listening

The procedure in listening skill will be described in the following table.

Table 4. The procedure of listening material

The procedure of listening material	Amount
Completing the blank part	37,5%
Writing vocabularies related to the material	62,5%
Retelling the dialog using own language	66,7%
Identifying the content of conversation	68,8%
Identifying the information from the conversation	68,8%

b) Speaking

The procedure in speaking skill will be described in the following table.

Table 5. The procedure of speaking material

The procedure of speaking material	Amount
Making dialog and practicing it	72,9%
Role-playing	60,4%
Discussing about a topic and presenting	79,2%
Presenting a report	41,7%

c) Reading

The procedure in reading skill will be described in the following table.

Table 6. The procedure of reading material

The procedure of reading material	Amount
Reading than finding the information about it	60,4%
Reading and answering the question based on the reading material	79,2%
Reading and summarizing	47,9%
Reading a graphic, table, advertisement	47,9%
Discussing the vocabularies (meaning, synonym, antonym)	47,9%

e) Writing

The procedure in writing skill will be described in the following table.

Table 7. The procedure of writing material

The procedure of writing material	Amount
Writing a paragraph	70,8%
Completing a paragraph	56,3%
Fixing the paragraph	60,4%
Organizing the sentences into good paragraph	64,6%
Writing English text based on picture, table, diagrams, etc.	56,3%

3) Setting

About the setting of teaching and learning process, the data were gathered from the participants stated as follows.

Table 4.8. The setting of teaching and learning English

The setting of teaching and learning English	Amount
In the classroom	75%
Outside classroom (auditorium, garden, etc)	68,8%
Library	33,3%
Laboratories/ workshop	56,3%

4) Lecturers' role

Besides, the data were gathered from the participants also stated about the lecturer's role in teaching and learning process. The data described as follows.

Table 4.9. The lecturers' role in teaching and learning English

The lecturers' role in teaching and learning English	Amount
Motivating students	66,7%
Encourage and direct students to use creativity in doing tasks.	75%
Help translate difficult words in English.	62,5%
Give suggestions, corrections, and comments on each student's work.	75%
Creating a pleasant atmosphere so that students are able to solve problems actively and are able to do their tasks well.	81,3%

5) Students' role

Besides, the data were gathered from the participants also stated about the lecturer's role in teaching and learning process. The data described as follows.

Table 4.10 The students' role in teaching and learning English

The students' role in teaching and learning English	Amount
Listening to the lecturers in explaining the material	18,8%
Using creativity in doing exercise	58,3%
Using game to ease in understanding the material	75%
Discussing and participating actively during teaching and learning process	72,9%

The questions which covered the target needs in the questionnaire and interview have been developed in accordance with the principle of need analysis proposed by Hutchinson and Waters (1998). There are three kinds of target needs namely necessities, lacks, and wants. Meanwhile, the questions which covered the learning needs in the questionnaire have been developed adapted from the components of task proposed by Nunan (2004). The learning needs include input, procedure, teacher's roles, student's roles, and setting. Nunan (2004) defines input as the spoken, written, and visual data that the learners work within course of completing task. In terms of the input for the English materials, students believed that dialogues, audios, pictures, and simple text that were appropriateness as the input of the task.

Nunan (2004) states that procedures mean what learners will actually do with the input that forms the point of departure for the learning task. Based on the results of the need analysis, the learning activities that the students wanted were listening text monolog and dialogue arrange 100-200 words, and complete the text. Related to the setting, the classroom management specified or implied in the task (Nunan 2004), the students wanted to do tasks in pairs. In terms of the teacher's role in the classroom, the students agreed the teacher monitoring students learning progress. Meanwhile the students' role in the classroom was the active participant and students find the new things independently. Nunan (2004) defines 'roles' as the part that learners and teachers are expected to play in carrying out learning tasks as well as the social and interpersonal relationship between the participants.

4. DISCUSSIONS

The findings of this study highlight the critical role of needs analysis in designing effective English learning materials for railway engineering students. The results provide a comprehensive understanding of the students' target needs (necessities, lacks, and wants) and learning needs (input, procedures, settings, and roles). These findings align with the principles of English for Specific Purposes (ESP), which emphasize tailoring language instruction to meet the specific requirements of learners in their academic, professional, or workplace contexts (Hutchinson & Waters, 1998; Basturkmen, 2010).

Target Needs and Their Implications

The study revealed that the majority of students (95.8%) strongly agreed on the importance of learning English, particularly for their academic and professional development. This finding is consistent with previous research, which underscores the significance of English proficiency for engineering students in achieving career success and engaging in global communication (Živković, 2015; Shrestha et al., 2016). The students' recognition of English as a vital skill reflects the growing demand for engineers to possess strong communication skills, both oral and written, to collaborate effectively with diverse stakeholders, including clients, contractors, and regulatory authorities (Çal et al., 2021).

However, the data also showed that most students seldom used English in their daily lives (54.2%), which indicates a gap between their recognition of English's importance and their actual practice. This gap suggests the need for more practical and context-specific learning opportunities that encourage students to use English actively in real-life scenarios. For example, incorporating role-playing, simulations, and project-based learning into the curriculum could help bridge this gap by providing students with authentic contexts to practice their language skills (Ting et al., 2017).

The students' objectives for learning English further emphasize the need for a specialized curriculum. Most students (89.6%) aimed to develop the ability to speak and write in English for their future careers, while 81.3%

wanted to acquire vocabulary relevant to their major. These findings align with the concept of ESP, which focuses on equipping learners with the language skills necessary to function effectively in their specific fields (Basturkmen, 2010). For railway engineering students, this means developing materials that include technical vocabulary, industry-specific communication skills, and practical applications of English in railway construction and technology.

Addressing Students' Lacks

The study identified speaking (79.2%) and listening (56.3%) as the most challenging skills for students, followed by writing (35.4%) and reading (16.7%). These findings are consistent with previous research, which has found that productive skills (speaking and writing) are often the most difficult for engineering students to master (Hadiani & Permata, 2017; Živković, 2015). This difficulty may stem from a lack of opportunities to practice these skills in authentic contexts, as well as limited exposure to English in their daily lives.

To address these challenges, the curriculum should prioritize activities that develop speaking and listening skills in professional contexts. For example, students could engage in role-playing exercises where they simulate workplace scenarios, such as presenting technical reports, participating in meetings, or negotiating with clients. Additionally, listening activities could include analyzing technical instructions, understanding safety briefings, or interpreting conversations related to railway engineering. These activities would not only improve students' language proficiency but also prepare them for real-world communication tasks in their future careers (Spoelstra, 2023).

Students' Wants and Aspirations

The students' aspirations to achieve advanced English proficiency (65%) reflect their awareness of the importance of English for their future careers. This finding aligns with the global trend of engineering students recognizing the need for strong English skills to compete in the international job market (Shrestha et al., 2016; Ting et al., 2017). However, the fact that most students currently identify as beginners (56%) highlights the need for a structured and progressive curriculum that supports their language development from basic to advanced levels.

The curriculum should include a clear progression of learning objectives, starting with foundational skills and gradually introducing more complex tasks. For example, beginner-level students could focus on building vocabulary and mastering basic sentence structures, while intermediate and advanced students could work on technical writing, oral presentations, and critical reading of technical documents. This approach would ensure that all students, regardless of their starting proficiency level, have the opportunity to achieve their language learning goals.

Learning Needs and Curriculum Design

The findings on learning needs provide valuable insights into the design of the English curriculum for railway engineering students. The students' preference for topics related to building and railway track technology (79.2%) underscores the importance of aligning the curriculum with their field of study. This is consistent with Nunan's (2004) concept of input, which emphasizes the need for learning materials to be relevant and meaningful to learners. By incorporating topics such as railway construction, safety protocols, and technological advancements, the curriculum can engage students and enhance their motivation to learn.

The preferred procedures for each skill also highlight the need for interactive and practical learning activities. For example, students expressed a preference for activities such as discussing and presenting topics (79.2% for speaking), identifying information from conversations (68.8% for listening), and answering questions based on reading materials (79.2% for reading). These activities align with task-based learning approaches, which have been shown to be effective in ESP contexts (Damio et al., 2022). By designing tasks that simulate real-world scenarios, the curriculum can help students develop the skills they need to succeed in their future careers.

The findings on the roles of lecturers and students further emphasize the importance of creating a supportive and interactive learning environment. Students identified key roles for lecturers, such as motivating students (66.7%), encouraging creativity (75%), and providing feedback on their work (75%). These roles align with Nunan's (2004) definition of the teacher's role as a facilitator and guide in the learning process. Similarly, the students' role as active participants (72.9%) highlights the need for learner-centered approaches that encourage collaboration, critical thinking, and problem-solving.

Broader Implications

The results of this study have broader implications for the design of English for Specific Purposes (ESP) courses in engineering education. The integration of language and communication skills into engineering curricula is essential for preparing students to meet the demands of the global workforce (Spoelstra, 2023; Çal et al., 2021). For railway engineering students, this means developing a curriculum that not only enhances their language proficiency but also equips them with the communication skills needed to collaborate with diverse stakeholders, understand technical documents, and present their work effectively.

Furthermore, the findings highlight the importance of aligning the curriculum with industry needs and expectations. Employers in the engineering field value employees who can communicate effectively in English, as this skill is crucial for career success and community engagement (Ting et al., 2017; Mekala et al., 2020). By addressing the specific needs of railway engineering students, the proposed English module can help bridge the gap between their current proficiency levels and the skills required in the workplace.

5. CONCLUSION





The needs of Diploma students Building and Track Technology major stated there were classified into several aspects summarized as follow: (1) In listening skill, the students need about the monolog including with videos in 100 to 200 words (moderate). The procedure would be identifying the content of conversation; (2) In speaking, the students would need to work in pair in practicing the dialog, and it would be in 100-200 words (moderate). The procedure was discussing and presenting the material; (3) In reading the text would include the vocabularied about railway building and construction context and it has 100-200 words (moderate). The procedure was about reading and answering the questions based on the text. (4) In writing, the material should be about writing the railway track component in 100-200 words (moderate). The procedure was writing paragraphs; (5) In vocabularies. The students' need to learn about parts of speech, and the procedure was identifying the meaning based on the language context; (6) The setting of teaching and learning process was in the class and at the laboratories/workshop; (7) The lecturers' role should be Creating a pleasant atmosphere so that students can solve problems actively and can do their tasks well; and (8) The students' role needs to discuss and participate actively during teaching and learning process.

REFERENCES

- Alduais, Ahmed Mohammed, S. (2012). Analysis of ESP Syllabus: Analysing the Book Basic English for Computing as a Sample and Testing its Suitability for ESP Learners in Public and Private Yemeni and Saudi Arabian Universities. *International Journal of Academic Research in Business and Social Sciences*, Vol 2 No 11, ISSN:2222-6990.
- Al-Harby, Majid. (2005). ESP Target Situation Need Analysis: The English language communicative needs as Perceived by Health Professionals in the Riyadh area, Electronic version approved: Maureen Grasso dean of the Graduate School the University of Georgia.
- Allwright, D & Kathleen M. Bailey. (1991). *Focus on the Language Classroom*. Cambridge: Cambridge University Press.
- Ampa, Andi Tenri, Muhammad Amin Rasyid, Asfah Rahmad, Haryanto, Muhammad Basri, D. (2013). The Students' Needs in Developing Learning Materials for Speaking Skills in Indonesia. *Journal of Education and Practice*, Vol, 4, No.17.
- Barena, Elena, Timothy Read & Jorge Arus. (2014). *Language for Specific Purposes in the Digital Era*. New York: Springer.
- Basturkmen, H. (2010). *Developing Courses in English for Specific Purposes*, New Zealand: Palgrave McMillan.
- Çal, A., Admiraal, W., & Mearns, T. (2021). The What – How – Why of English in the Workplace: Perspectives From Turkish Engineers. *European Journal of Engineering Education*, 47(2), 333–352. <https://doi.org/10.1080/03043797.2021.1946014>
- Creswell, John W. (2008). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. Canada: Pearson.
- Damio, S. M., Shahril, F. I. M., & Yau, S. A. (2022). English for Specific Purposes Need Analysis Among Final Year Chemical Engineering Students in a Malaysian Public University. *International Journal of Academic Research in Progressive Education and Development*, 11(4). <https://doi.org/10.6007/ijarped/v11-i4/15874>
- David, R Hall (ed). (2013). *Need Analysis for Language Course Design: A Holistic Approach to ESP*. Cambridge: Cambridge University Press.

- Gass, Josiane. (2012). Needs Analysis and Situational Analysis: Designing on ESP Curriculum for Thai Students. *English for Specific Purposes world*, issue 36, Vol. 12.
- Hadiani, D., & Permata, N. N. (2017). Developing Instructional Materials for Engineering Students: Focus on the Students' Communication Skills Needs. <https://doi.org/10.2991/conaplin-16.2017.57>
- Hamp-Lyons, L. (2001). English for Academic Purposes in Carter, R and Nunan, D (Eds), *The Cambridge Guide to Teaching English to Speakers of Other Languages* (pp 126—130), Cambridge: Cambridge University Press.
- Hutchinson, T., & Waters, A. (1987). *English for Specific purposes: A LearningCentered Approach*. Cambridge: Cambridge University press.
- Mekala, S., Harishree, C., & Geetha, R. V. (2020). Fostering 21st Century Skills of the Students of Engineering and Technology. *Journal of Engineering Education Transformations*, 34(2), 75–88. <https://doi.org/10.16920/jeet/2020/v34i2/150740>
- Merriam, Meretguly. (2012). *Qualitative Research and Case Stdy Application in Education*. United State: Wiley.
- Nunan, D. (1988). *The Learner-Centered Curriculum*, Cambridge: Cambridge University Press.
- Nunan, D. (1992). *Research Methods in Language Learning*. Cambridge, Cambridge University Press.
- Shrestha, R. N., Pahari, B. R., & Awasthi, J. R. (2016). Impact of English on the Career of Engineering Students: A Brief Overview in G(local) Context. *Journal of the Institute of Engineering*, 11(1), 182–188. <https://doi.org/10.3126/jie.v11i1.14714>
- Spoelstra, T. (2023). Design Principles for Integrating Language and Communication Skills Into Engineering Education. *The Journal for Transdisciplinary Research in Southern Africa*, 19(1). <https://doi.org/10.4102/td.v19i1.1369>
- Ting, S.-H., Marzuki, E., Chuah, K.-M., Misieng, J., & Jerome, C. (2017). Employers' Views on Importance of English Proficiency and Communication Skill for Employability in Malaysia. *Indonesian Journal of Applied Linguistics*, 7(2), 77. <https://doi.org/10.17509/ijal.v7i2.8132>
- Živković, S. (2015). Language Skills Among Students in the Field of Engineering. *European Journal of Language and Literature*, 3(1), 83. <https://doi.org/10.26417/ejls.v3i1.p83-90>

BIBLIOGRAPHY

	<p>Armyta Puspitasari is an Assistant Professor lecturer of English at the Indonesian Railway Polytechnic in Madiun. I research English as a foreign language, English for specific purposes, and English for engineering. Learning about educational psychology and learning strategies is also interesting in the teaching and learning process. Email : armyta@api.ac.id</p>
	<p>Ainun Fikria is an Assistant Professor lecturer at the Indonesian Railway Polytechnic Madiun. Indonesian Railway Management study program. I research in the field of English for Specific Purposes and English for Transportation. Currently I am pursuing a Doctoral degree in English at UNESA. Email : ainun.fikria@ppi.ac.id</p>
	<p>Edi Nyoto Setyo Marsusiadi is Assistant Professor lecturer in the Railway Mechanics Technology study program who is concerned with the field of language, both Indonesian and English. Email : edi@ppi.ac.id</p>
	<p>Septiana Widiastuti is Associate Professor lecturer at the Indonesian Railway Polytechnic in Madiun in the study program of building technology and railway tracks. The research conducted is related to statistical data in the field of transportation, and also in the field of building technology and railway tracks. Email : septiana@ppi.ac.id</p>