

Hemn Mohammed Ali Mahmood, 2024

Volume 8 Issue 2 , pp. 76-90

Received: 18th April 2024

Revised: 22nd May 2024 & 5th June 2024

Accepted: 30th April 2024

Date of Publication: 15th June 2024

DOI- <https://doi.org/10.20319/pijtel.2024.82.7690>

This paper can be cited as: Mohammed Ali Mahmood, H. (2024). A Case Study on the Needs Analysis of Vocational Medical Lab Students at the NIT. PUPIL: International Journal of Teaching, Education and Learning, 8(2), 76-90.

This work is licensed under the Creative Commons Attribution-Noncommercial 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc/4.0/> or send a letter to Creative Commons, PO Box 1866, Mountain View, CA 94042, USA.

A CASE STUDY ON THE NEEDS ANALYSIS OF VOCATIONAL MEDICAL LAB STUDENTS AT THE NIT

Hemn Mohammed Ali Mahmood

M.A, Language in Communication and Digital Culture, National Institute of Technology, ESP
department, Sulaymaniya, Iraq
hemn.ali@nit.edu.krd

Abstract

This study examines the educational requirements and teaching methods for English for Specific Purposes (ESP) in vocational medical laboratory students at the National Institute for Technology (NIT). The study utilizes the Research and Development (R&D) approach to create and evaluate methods for instructional and non-instructional items. The Instructional Development Model created by Dick (1996) outlines the study process, emphasizing Analysis, Design, Development, Implementation, and Evaluation (ADDIE) tasks. Information was gathered from second-semester students in the Diploma Medical Lab Department in the academic year 2023/2024 through questionnaires and organized interviews with professors and students. The results, studied descriptively, emphasize the student's learning needs and preferences, underscoring the significance of proficient English communication abilities for their future professions. The study emphasizes the importance of integrating creative and interactive

teaching approaches, such as technology, to improve students' English skills and prepare them for the workforce. The results provide useful information for educators creating English language courses customized for the particular requirements of vocational medical laboratory students.

Keywords:

ESP, Needs Analysis, Medical Lab, Case Study

1. Introduction

The importance of English for Specific Purposes (ESP) in the ever-changing educational landscape has grown, particularly in subjects related to medicine and laboratory sciences (Richard & Ramprabhu, 2016). This study thoroughly investigates the special requirements of vocational medical laboratory students, particularly focusing on their English language demands. The project is being carried out as a case study at the prestigious National Institute for Technology (NIT) with the goal of gaining useful insights into the specific linguistic needs of these pupils.

This investigation aims to conduct a comprehensive analysis of the language requirements in the educational setting, focusing on the specific goals and learning requirements of vocational medical lab students studying at the NIT. ESP focuses on acquiring language abilities that are directly applicable to the professional objectives and communication situations of a certain field (Aniqoh, 2018).

This study's technique includes gathering data using a blend of questionnaires and interviews. The aim of this study is to collect detailed information about students' views, choices, and difficulties in developing English language skills within the framework of their vocational education using these research instruments (Pambudi & Harjanto, 2020). The questionnaire provides quantitative data on general trends and patterns, while the interviews offer qualitative insights into individual experiences and perspectives.

As the research progress through the following parts of this study, it will explore the complex relationship between language prerequisites and the distinctive educational setting of vocational medical laboratory courses. This study will analyze the data carefully to enhance the academic discussion on ESP and to create precise language education strategies for vocational medical lab students at the National Institute for Technology.

2. Literature review

2.1 Need Analysis

Needs analysis is closely linked to the creation of curriculum and material, sometimes referred to as Curriculum and Material Development (Bocanegra-Valle, 2016; Flowerdew, 2012; Sulistyani, 2018). Material development is a key component of language programs. The process of material development, as outlined by Balzer et al. (2015), involves:

2.1.1. Need Analysis

Needs analysis is a method used to collect information regarding the requirements of students. Robles (2012) expressed the same view, referring to the process of collecting information on students' requirements as the needs analysis. The author creates a needs analysis tool in the form of a questionnaire sourced from Pambudi and Harjanto (2020); Robles (2012).

- (1) Summary of required abilities and challenges faced.
- (2) Summary of required topics.
- (3) Communicative Competence Components include skills (hearing, speaking, reading, writing), linguistic competence (grammar, vocabulary, pronunciation, punctuation, stress, and spelling), socio-cultural aspects, and communication strategy.

2.1.2. Formulating Goals

Developing objectives is a crucial aspect of decision-making while creating the Semester Program Plan (RPS) and Learning Implementation Plan (RPP). The author concludes that the intended aim is outlined in Basic Competence (BC) and Competency Standards (CS). Here are some clarifications regarding the learning objectives based on (Robles, 2012).

1. The purpose is typically a broad declaration.
2. Usually, motivational remarks to accomplish specific objectives.
3. A program's effectiveness hinges on clearly defined objectives.

2.1.3. Organizing the Course Content

The material preparation involves:

1. Ensuring that Standards Competency aligns with Basic Competencies.
2. Material development.
3. Plan educational tasks.
4. Identify indicators
5. Establish evaluation criteria

6. Set the timeframe
7. Specify the source.

2.1.4. English for Specific Purposes

The author aims to discuss English for Specific Purposes, as defined by (Aniqoh, 2018; Juita, 2023). ESP is a language teaching method that tailors content and methods to students' specific learning goals. ESP's primary goal is to enhance the relevance of English classes to meet the needs of students. Thus, ESP is a form of specialized learning. English for medical laboratory is an instructional method designed to help students attain proficiency in English within the context of healthcare and laboratory terminology.

2.1.5. Teaching-Learning Process in ESP

Evans and John noted that instructing English for Specific Purposes (ESP) differs from teaching English as a Foreign Language (EFL) according to Khalil and Kholofelo Semono-Eke (2020); Paltridge (2012); Soliman (2014). This stems primarily from two elements associated with students: the specialized knowledge they possess, whether explicit or implicit, and the cognitive and learning processes they bring from their educational and professional experiences in their specialized areas (Khalil & Kholofelo Semono-Eke, 2020). The appropriateness of these two elements is influenced by the sort of activity involved in the learning process. ESP classes incorporate assignments and activities that mirror the professional world of the students (Paltridge, 2012). Moreover, they clarified that ESP instructors require the capability of evaluating a situation from several perspectives and then selecting and adjusting their methods to meet the students' demands. Adaptability and readiness to take chances are essential.

2.1.6. Need Assessment

ESP lecturers must conduct requirements assessments to develop their Semester Programme Plans (RPS) and Learning Implementation Plans (RPPs) and select suitable instructional material. A needs analysis is conducted to determine the content and structure of the course (Asrifan et al., 2020). The initial stage of ESP development is followed by curriculum design, material selection, methodology, assessment, and evaluation (Gilabert & Malicka, 2022). The requirements analysis comprises students' personal information, encompassing aspects that impact their learning process, such as previous learning experiences, cultural background, motivations for taking classes, and their attitude towards English. Secondly, details regarding the language teaching environment, including human resources and administrative matters.

2.2. Previous Studies on ESP and Vocational Medical Lab Students

Research on ESP in the context of vocational medical lab students is relatively limited, but existing studies provide valuable insights into the language needs and challenges faced by these learners. Ryan et al. (2010) study of medical students highlighted the importance of speaking and listening skills for effective communication in medical settings. Similarly, Farhady et al. (1994) conducted a needs analysis of Iranian medical students and found that students felt that more emphasis should be placed on developing their English language skills for medical purposes.

Other studies have focused on the role of ESP in preparing students for specific tasks within the medical field. For example, Al-Tonsi and Torad (2023) conducted a study on the use of ESP in teaching medical writing skills to Iranian medical students and found that ESP courses were effective in improving student's writing skills and preparing them for writing tasks common in the medical profession.

2.3. The Importance of ESP in Vocational Medical Lab Education

ESP plays a crucial role in vocational medical lab education by bridging the gap between general English language proficiency and the specific language skills required in the medical laboratory setting (Lodhi et al., 2018). Vocational medical lab students need to not only understand and interpret complex medical terminology but also communicate effectively with patients, colleagues, and other healthcare professionals (Juita, 2023). ESP courses designed for these students can help develop the necessary language skills for tasks such as explaining lab results to patients, discussing cases with doctors, and writing reports for research purposes.

Moreover, ESP can enhance students' employability by preparing them for the linguistic demands of the workplace (PUTRI, 2020). In the medical laboratory setting, effective communication is essential for accurate diagnosis and treatment, as well as for maintaining patient safety. ESP classes can assist vocational medical lab students become more competent and self-assured communicators by emphasizing the language skills required in real-life medical scenarios. This will increase the students' chances of success in the profession.

3. Methodology

The writers typically employ the research development method (Research & Development) while conducting research on the kind of learning that is required and the

instructional strategy that best meets these objectives (Mayfield, 2011). In order to build an empirical foundation for the production of both instructional and non-instructional products, Mayfield (2011) defines this type of research as a systematic study to develop and assess procedures. The Instructional Development Model developed by Dick (1996) will be used to guide the steps and processes of this research. In ADDIE (Analysis, Design, Development, Implementation, and Evaluation) activities, the steps will be put into practice. Since this investigate is the introductory organize of the five steps over, the inquiry about that will be carried out could be a needs examination.

The participants in this study were second-semester students enrolled in the Diploma Medical Lab Department at the NIT during the academic year 2023/2024. The research data were collected through the use of questionnaires and structured interviews with both lecturers and students, focusing on their learning needs in English for Specific Purposes (ESP). The results of the study are presented using descriptive statistics, which involve organizing and summarizing the data to identify patterns and trends. This approach allows for a comprehensive analysis of the data, providing insights into the specific language learning needs of the participants.

4. Discussion

This paper discusses the data processing of English courses for students enrolled in the vocational medical lab program at the NIT. English lessons in the vocational medical lab program are compulsory and usually take place weekly, similar to English classes in other majors. Class size varies between 30 and 35 students per class.

The poll assessing pupils' English competence found that 80% are beginners, while the remaining 20% are at intermediate and upper intermediate levels. A substantial number of students in the vocational medical lab program have inadequate proficiency in the English language, as seen by this distribution. Although pupils have studied English since elementary school, their limited exposure to utilizing the language in daily discussions may be a contributing factor to low skill levels.

The survey of vocational medical lab students (See figure 1) revealed that the main reason for learning English is to effectively communicate about health-related topics and terminology in the laboratory setting. The students' acknowledgment of the significance of

English language proficiency in their future professions, emphasizing the necessity of fluent English communication.

Students commonly want to comprehend English grammar as it is deemed essential for enhancing their English language skills. Proficiency in grammar is considered a crucial element that can improve their speaking, listening, reading, and writing abilities.

Furthermore, an equivalent proportion of students emphasized the significance of English in interpreting academic resources including books, journals, readings, and reports in the health and laboratory sectors, as well as in understanding spoken English in discussions, speeches, and lectures.

The least common aim mentioned by students was writing or creating reports or articles in English linked to health and labs. Students prioritize communication and comprehension abilities over writing in their English language learning journey.

Figure 1: *Purpose of studying English*



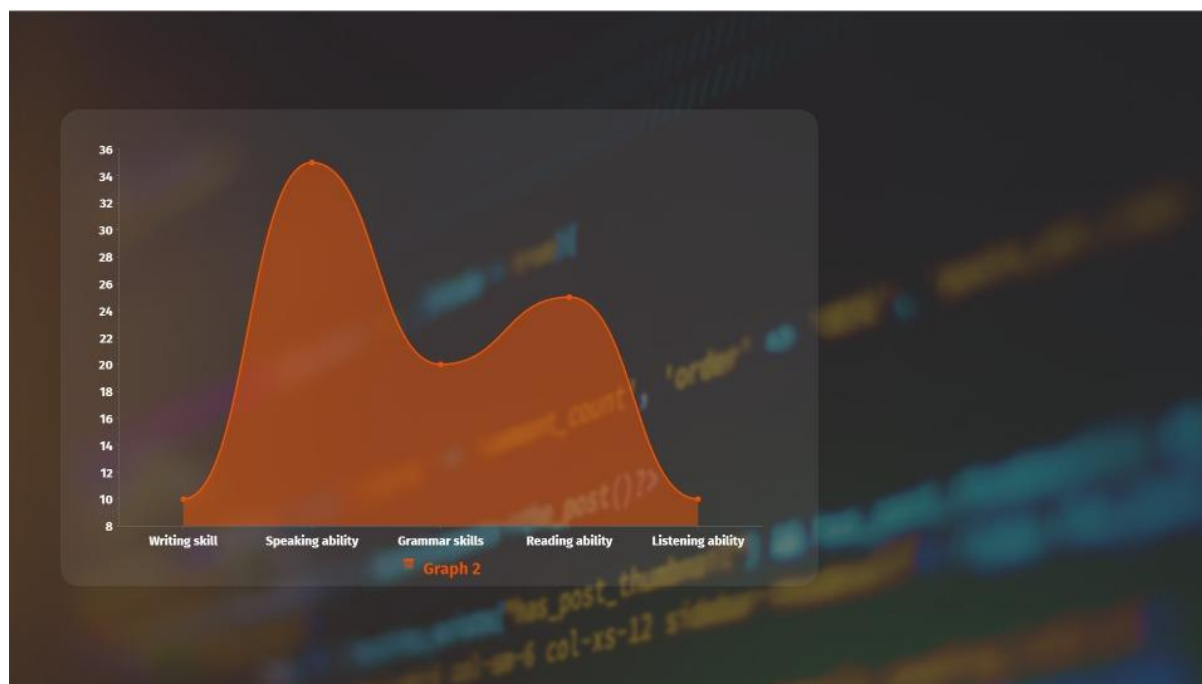
(Source: Self/Authors' Own Illustration)

The study results show that 35% of vocational medical lab students believe that speaking skills are the most crucial ability for learning English. Students are aware of the labor market's requirements, where fluency in spoken English is typically necessary for working in health-related companies.

Second only to speaking skills, grammatical mastery was identified as the second most significant skill by 20% of respondents. This highlights the students' acknowledgment of the significance of grammar in language competency, which can improve their skills in speaking, listening, reading, and writing.

25% of students value reading abilities for comprehending English written resources such as academic papers, journals, and reports. Only 10% of students prioritize writing and 10% listening skills, indicating that they may not consider it as crucial as other abilities in their English language learning journey, although recognizing its relevance in communication.

Figure 2: *English Skills they are Good at*



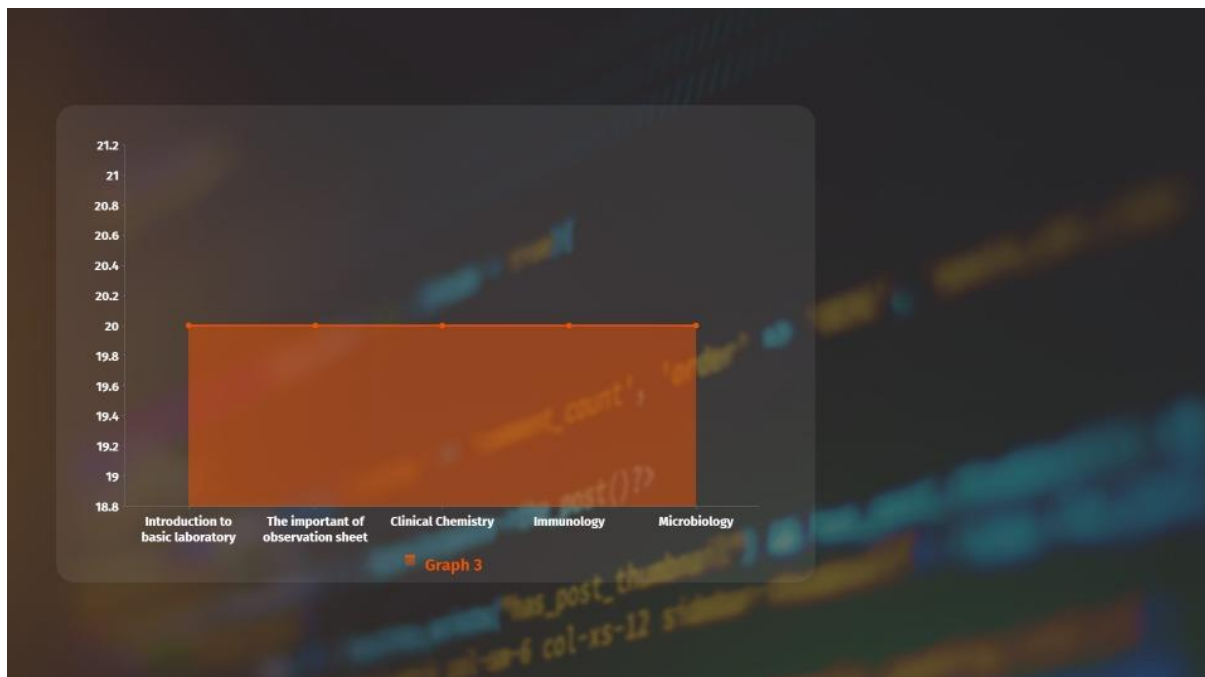
(Source: Self/Authors' Own Illustration)

The survey results indicate that vocational medical lab students at the NIT find all health and laboratory-related topics to be crucial for their study (see Figure 3). There is a clear correlation between their expectations for the learning material and the demands of their future career.

The students' inclination for topics closely related to their field indicates their preference for practical and applied knowledge that can be instantly beneficial in their professional careers. It highlights the necessity of creating English language courses customized for vocational medical lab students, emphasizing the enhancement of their communication skills in practical healthcare environments.

The students' focus on communication skills in their topic selection underscores their value of being able to speak proficiently in English. Future course materials should focus on activities and exercises that enhance students' speaking and listening abilities, which are considered essential for their future professional endeavors. Educators can enhance vocational medical lab students' language skills and workplace preparedness by focusing on issues that students find significant and relevant in English language classes.

Figure 3: *Subjects they are Interested to Learn From*



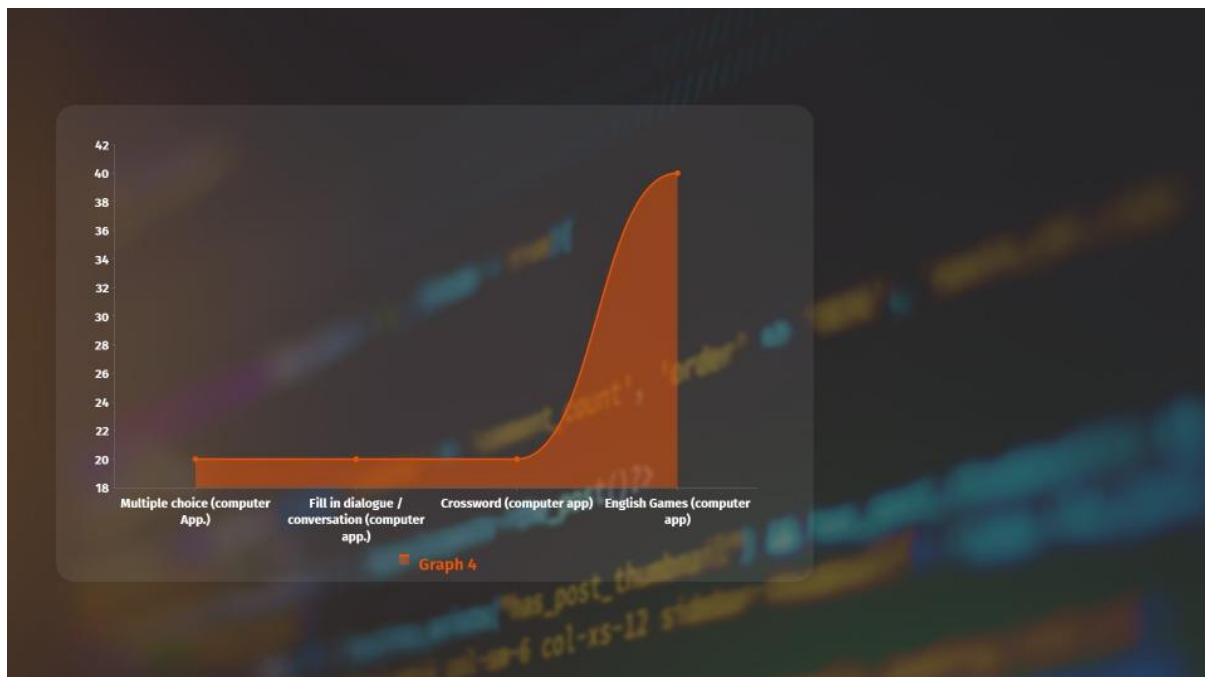
(Source: Self/Authors' Own Illustration)

Vocational medical lab students strongly prefer using computer programs to improve their English language skills, according to the survey results (See figure 4). This highlights their preference for learning experiences that are facilitated by technology. It is important to understand that having technology alone is not enough; it must be paired with successful teaching methods to enhance its influence on student learning results.

Teachers or lecturers play a vital role in incorporating technology into the classroom to match students' skills and educational goals. Teachers should aim to develop creative and captivating learning tasks that utilize technology to enhance students' English language skills. This involves utilizing interactive multimedia resources, online language learning platforms, and communication tools to enhance language practice and skill advancement.

Moreover, technology utilization should be directed by a carefully planned educational approach that takes into account the unique requirements and learning preferences of pupils. This strategy guarantees that technology is utilized to augment learning rather than replace excellent teaching methods. Teachers can establish a dynamic and engaging learning environment that assists vocational medical lab students in strengthening their English language abilities by properly using technology into the classroom.

Figure 4: *Using Computer Programs to improve English language skills.*



(Source: Self/Authors' Own Illustration)

The research and discussions focused on the questionnaire and interviews with English teachers teaching students in the diploma medical lab department at the National Institute for Technology.

4.1 Target Analysis

Interviews with English professors at the NIT indicate that the main objective for vocational medical lab students is to become competitive graduates who can thrive in the workforce. To attain this goal, it is crucial to provide students with advanced English language abilities, which are becoming increasingly important in their future careers. This is in line with the perspective presented by Khalil and Kholofelo Semono-Eke (2020), which highlights the institution's duty to equip students for the competitive job market. Being proficient in English is crucial for successful communication and cooperation in businesses where English is the main language used.

The survey findings show that vocational medical laboratory students value active communication in English, especially the proficiency in speaking eloquently and efficiently. This desire is consistent with the research by Juita (2023) and Camillo (2019), emphasizing the significance of institutions matching students' goals to boost motivation and address career-related requirements. Students' focus on enhancing their speaking abilities aligns with the job market's need for skilled English communicators.

English classes in the vocational medical lab program must prioritize the enhancement of students' speaking skills. Engaging in this practice will help students enhance their readiness for upcoming career challenges, when proficient English communication skills are essential.

4.2 Analysis of Learning Needs

The survey data shows that vocational medical lab students place great importance on English teaching materials that are specifically relevant to their field of study, especially those concerning health and pharmacy. Flowerdew (2012) and Richard and Ramprabhu (2016) propose that offering English learning materials related to students' core courses can improve their readiness for the competitive labor market. This method can also enhance students' motivation to study English by increasing their likelihood of interacting with materials that correspond to their interests and professional goals (Lodhi et al., 2018; Paltridge, 2012).

Educators can boost vocational medical lab students' English language skills by using materials that match their key competencies. This method not only enhances learning by making it more interesting and applicable but also effectively equips students for the linguistic challenges they will encounter in their future professions. English language courses in the vocational medical lab program must provide content directly related to the students' field of study to help them develop the language skills required for professional success.

The interview results show that vocational medical lab students desire novel and interactive English teaching approaches to improve their competency in spoken and written English. The poll results show that students want to use technology, especially computer apps, to enhance their learning in the classroom. Utilizing digital or multimedia technology in educational materials aims to enhance students' learning results through the implementation of efficient teaching methods.

The results align with the claim by Maielfi (2021) that instructors should create interactive learning modules to improve students' digital literacy, collaborative problem-solving

abilities, and creativity. Chu et al. (2021); McKnight et al. (2016) propose that technology can enhance innovation in education by introducing novel concepts, documenting and sharing applications, and promoting collaboration among educators worldwide.

Teachers and vocational lecturers must include curriculum and teaching materials that utilize suitable digital multimedia characteristics. Educators can establish an interesting and innovative learning environment that fulfills the requirements and expectations of vocational medical lab students. Educators should use these findings as motivation to use technology efficiently into English vocational education courses, thereby improving students' learning experiences and results.

5. Conclusion

Researchers have found that fluency in speaking and proficiency in English are essential for vocational medical lab students to satisfy future professional demands. It is crucial to customize English language instruction in the vocational medical lab program at the National Institute for Technology to address these requirements. The future quality of student graduates will rely on addressing these demands effectively, underscoring the significance of incorporating student requirements into curriculum design.

Lecturers can create an academic atmosphere tailored to the needs of students studying English for Specific Purposes (ESP) by using suitable teaching methods and material in the classroom. This involves matching the curriculum with the students' learning goals and objectives to guarantee they develop the necessary skills for their future professions. The ultimate objective is to equip students with the essential language skills required for success in the professional realm, highlighting the significance of incorporating English for Specific Purposes (ESP) into the curriculum tailored to the distinct requirements and anticipations of vocational medical laboratory students.

REFERENCES

- Al-Tonsi, H. G. A. L., & Torad, A. A. M. (2023). Developing Physical Therapy Students' Medical Report Writing Skills During COVID-19: A TPACK Based ESP Course. *مجلة* 44-1, (3)2023, كلية التربية-جامعة المنوفية. <https://doi.org/10.21608/muja.2023.314625>
- Aniqoh, A. (2018). Need Analysis Of Esp Materials For The Medical Laboratory Technology Students In The Health Polytechnics Semarang. Unpublished Thesis]. Muhammadiyah University of Surakarta. Link: [09 naskah publikasi.pdf \(ums.ac.id\)](#)
- Asrifan, A., Vargheese, K., Syamsu, T., & Amir, M. (2020). ESP course design: the need analysis on tourism department in Indonesia vocational high schools. *Journal of Advanced English Studies*, 3(2), 69-77. <http://dx.doi.org/10.47354/jaes.v3i2.85>
- Balzer, W. K., Brodke, M. H., & Thomas Kizhakethalackal, E. (2015). Lean higher education: successes, challenges, and realizing potential. *International Journal of Quality & Reliability Management*, 32(9), 924-933. <http://dx.doi.org/10.1108/IJQRM-08-2014-0119>
- Bocanegra-Valle, A. (2016). Needs analysis for curriculum design. In *The Routledge handbook of English for academic purposes* (pp. 560-576). Routledge. [Needs analysis for curriculum design | 50 | The Routledge Handbook of \(taylorfrancis.com\)](#)
- Camillo, C. G. (2019). Defining Disciplinary Literacy Practices and Evaluating the Professional Identity of Medical Laboratory Science. Salisbury University. [Defining Disciplinary Literacy Practices and Evaluating the Professional Identity of Medical Laboratory Science - ProQuest](#)
- Chu, S. K. W., Reynolds, R. B., Tavares, N. J., Notari, M., & Lee, C. W. Y. (2021). 21st century skills development through inquiry-based learning from theory to practice. Springer. <http://dx.doi.org/10.1007/978-981-10-2481-8>
- Dick, W. (1996). The Dick and Carey model: Will it survive the decade? *Educational technology research and development*, 44(3), 55-63. [The dick and carey model: Will it survive the decade? | Educational technology research and development \(springer.com\)](#)
- Farhady, H., Jafarpur, A., & Birjandi, P. (1994). Testing language skills: From theory to practice. Tehran: SAMT Publications.

- Flowerdew, L. (2012). Needs analysis and curriculum development in ESP. The handbook of English for specific purposes, 325-346.
<http://dx.doi.org/10.1002/9781118339855.ch17>
- Gilabert, R., & Malicka, A. (2022). From needs analysis to task-based design: Methodology, assessment and programme evaluation. In Task-Based Language Teaching and Assessment: Contemporary Reflections from Across the World (pp. 93-118). Springer.
http://dx.doi.org/10.1007/978-981-16-4226-5_6
- Juita, E. (2023). THE USE OF AUTHENTIC MATERIALS IN ESP CLASSES FOR VOCATIONAL PROGRAM OF MEDICAL LABORATORY TECHNOLOGY. JOEL: Journal of Educational and Language Research, 2(11), 1287-1292.
<http://dx.doi.org/10.53625/joel.v2i11.6015>
- Khalil, L., & Kholofelo Semono-Eke, B. (2020). Appropriate teaching methods for general English and English for specific purposes from teachers' perspectives. Arab World English Journal (AWEJ) Volume, 11. <http://dx.doi.org/10.24093/awej/vol11no1.19>
- Lodhi, M. A., Shamim, M., Robab, M., Shahzad, S., & Ashraf, A. (2018). English for doctors: An ESP approach to needs analysis and course design for medical students. International Journal of English Linguistics, 8(5), 205-214.
<http://dx.doi.org/10.5539/ijel.v8n5p205>
- Maielfi, D. (2021). Need Analysis for Physics E-Module Based on Creative Problem Solving Integrated 21st Century Skills. Journal of Physics: Conference Series.
<http://dx.doi.org/10.1088/1742-6596/1940/1/012110>
- Mayfield, M. (2011). Creating training and development programs: using the ADDIE method. Development and Learning in Organizations: An International Journal, 25(3), 19-22.
<http://dx.doi.org/10.1108/14777281111125363>
- McKnight, K., O'Malley, K., Ruzic, R., Horsley, M. K., Franey, J. J., & Bassett, K. (2016). Teaching in a digital age: How educators use technology to improve student learning. Journal of research on technology in education, 48(3), 194-211.
<http://dx.doi.org/10.1080/15391523.2016.1175856>
- Paltridge, B. (2012). Teaching English for specific purposes. The Cambridge guide to pedagogy and practice in second language teaching, 179-185.
<http://dx.doi.org/10.1017/9781009024778.023>

- Pambudi, N. A., & Harjanto, B. (2020). Vocational education in Indonesia: History, development, opportunities, and challenges. *Children and Youth Services Review*, 115, 105092. <http://dx.doi.org/10.1016/j.childyouth.2020.105092>
- PUTRI, A. K. S. (2020). A STUDY ON NEED ANALYSIS IN ESP AND ESP TEXTBOOK EVALUATION IN THE DEPARTMENT OF MEDICAL UNIVERSITY OF MUHAMMADIYAH MALANG]. <http://dx.doi.org/10.20414/schemata.v8i1.1651>
- Richard, J. A., & Ramprabhu, S. (2016). Effectiveness of Language Laboratory in Learning English. *Shanlax International Journal of Education*, 4(2).
<http://dx.doi.org/10.29121/granthaalayah.v4.i5SE.2016.2716>
- Robles, M. M. (2012). Executive perceptions of the top 10 soft skills needed in today's workplace. *Business communication quarterly*, 75(4), 453-465.
<https://doi.org/10.1177/1080569912460400>
- Ryan, C. A., Walshe, N., Gaffney, R., Shanks, A., Burgoyne, L., & Wiskin, C. M. (2010). Using standardized patients to assess communication skills in medical and nursing students. *BMC medical education*, 10, 1-8. <http://dx.doi.org/10.1186/1472-6920-10-24>
- Soliman, N. A. (2014). Using e-learning to develop EFL students' language skills and activate their independent learning. *Creative Education*, 2014.
<http://dx.doi.org/10.4236/ce.2014.510088>
- Sulistiyani, U. N. L. (2018). The Importance of Needs Analysis in a Language Curriculum Development: An Evaluation to 2013 Curriculum. *UICELL Conference Proceeding*.
[The Importance of Needs Analysis in a Language Curriculum Development: An Evaluation to 2013 Curriculum | UICELL Conference Proceeding \(uhamka.ac.id\)](http://uhamka.ac.id)