

A comparative analysis of english learning needs among regular students and employee class majors in diploma three of mechanical engineering study program focusing on plantation sector at Polytechnic LPP of Yogyakarta

Endang Lestari

Polytechnic LPP of Yogyakarta

Article Info	ABSTRACT
<p>Keywords: comparative, ESP, mechanical technology, needs, perspective</p>	<p>In the contemporary landscape of higher education, the proficiency in English language skills is increasingly recognized as a pivotal asset for academic success and professional advancement. This study embarks on a comparative exploration to discern the nuanced disparities in English learning needs between two distinct cohorts within the Applied Bachelor of Mechanical Technology Study Program at Polytechnic LPP of Yogyakarta: regular students and employees pursuing education through the employee class. Employing a mixed-methods approach, the research endeavors to unravel the multifaceted dimensions of English language acquisition, encompassing both the scholastic exigencies of traditional students and the practical demands encountered by employed learners. There were 41 respondents consisting of 37 from the regular class and 4 from the employee class. The researcher used questionnaires to collect the data. The quantitative data were analyzed using descriptive statistics. The data with highest percentage are presented in the table. Based on the need analysis, the student found descriptive, narrative, recount, procedure and article text in their life. The topics consist of measurement tools, instrumentation, sugar fabrication, tools maintenance, and load tools. Pronunciation and Vocabulary become obstacles in learning English. In speaking activities, they want to have more practice and focus on grammar and pronunciation. The main goal in learning English is to improve their communication skill and career preparation. The role of the lecturer should be interactive with students, become a motivator, and apply new technology and fun learning methods. They prefer to work in group and individual. Online media, book, article, song and movie are their favorite learning source. In general, there are some similarities between regular and employee students' perceptions. The result of this study not only contributes to the academic discourse on language education but also holds pragmatic implications for educational policymakers, administrators, and practitioners vested in optimizing the efficacy and inclusivity of English language instruction within vocational tertiary education settings</p>
<p>This is an open access article under the CC BY-NC license</p> 	<p>Corresponding Author: Endang Lestari Polytechnic LPP of Yogyakarta lestaryendang@polteklpp.ac.id</p>

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INTRODUCTION

In the dynamic realm of vocational education, the acquisition of English language proficiency stands as a cornerstone for academic achievement and professional growth, particularly within specialized fields such as mechanical technology, with a focus on the plantation sector. Polytechnic LPP of Yogyakarta serves as a crucial hub for nurturing talent and expertise in this domain. However, within its Applied Bachelor of Mechanical Technology Study Program, a notable divergence exists between two distinct cohorts: regular students and those enrolled in the employee class. This research endeavors to conduct a meticulous comparative analysis, delving into the nuanced nuances of English learning needs within these cohorts to elucidate how educational trajectories and professional contexts influence language acquisition.

As the globalization of industries continues to accelerate, proficiency in English is increasingly recognized as a prerequisite for success in the global marketplace. This holds especially true for mechanical technology students, whose future endeavors in the plantation sector may necessitate interactions with international partners, clients, and stakeholders. However, the pathways through which regular students and employee class majors traverse their academic journeys are inherently distinct, shaped by diverse socio-economic backgrounds, educational motivations, and professional aspirations. Understanding the differential needs and challenges faced by these cohorts is imperative for tailoring English language instruction to ensure equitable access and optimal outcomes.

Through a combination of quantitative surveys and qualitative interviews, this study seeks to uncover the specific linguistic competencies required by regular students and employee class majors in the context of the plantation sector. By examining factors such as language proficiency levels, learning preferences, and perceived barriers to language acquisition, the research aims to provide insights that can inform curriculum development, instructional strategies, and support services tailored to the unique needs of each cohort.

Furthermore, this comparative analysis holds implications not only for educational stakeholders within Polytechnic LPP of Yogyakarta but also for vocational institutions and policymakers at large. By elucidating the intricate interplay between educational pathways, professional contexts, and English learning needs, this research contributes to the broader discourse on language education in vocational settings, aiming to foster inclusive and effective approaches that empower students to thrive in an increasingly interconnected world.

Literature Review

Need Analysis

The increase of English proficiency level can be achieved by emphasizing topics themes which are related to students' needs and interests and compatible with their background, experience, and abilities motivates students to learn and encourages them to build self-confidence and positive attitudes learning (Hong Dong Anh Chi:2019). The importance of needs analysis in learning language for specific purposes (LSP) lies in its ability to tailor language instruction to meet the precise needs and goals of learners within

a particular context or field. Here are some key reasons why needs analysis is crucial. Needs analysis helps identify the specific language skills, vocabulary, and communication strategies that learners need to effectively perform tasks or achieve objectives within their professional or academic domain. By understanding these needs, instructors can design courses and materials that directly address them, making the learning process more relevant and engaging for students. Focusing on learners' specific language needs ensures that instructional time and resources are used efficiently.

Instead of covering irrelevant or general language topics, instructors can concentrate on teaching the language skills and concepts that are most beneficial and applicable to learners' real-world contexts. This targeted approach can lead to faster progress and more effective learning outcomes. When learners perceive that their language learning is directly relevant to their professional or academic goals, they are likely to be more motivated and engaged in the learning process. Needs analysis helps align language instruction with learners' interests and aspirations, increasing their motivation to learn and succeed in their chosen field. In professional or academic settings, effective communication is essential for success. Needs analysis ensures that learners develop the language skills and strategies necessary to communicate accurately and appropriately within their specific context. This includes understanding industry-specific terminology, writing reports or presentations, participating in meetings or discussions, and other communication tasks relevant to their field. By understanding their own language needs and goals, learners become empowered to take ownership of their learning journey. Needs analysis encourages learners to reflect on their strengths, weaknesses, and areas for improvement, allowing them to actively participate in setting learning objectives and monitoring their progress over time.

There are some previous studies those are in line with this research, as follows. The first research was conducted by Ria & Malik (2020) entitled "A Need Analysis In English for Business Material at Economic Faculty of *Pandananan* University". In their research the researchers stated that need analysis can get important result in designing materials. By knowing the students need of skills, lecturer can focus on the teaching and learning process. That is in line with Lestari & Priyana (2020) in their research entitled "Developing English learning Material for Students of Vocational High School Majoring in Automotive ", in developing the learning materials, the researchers must consider several things, namely target need and learning needs. Researchers must know the basic science areas of expertise that will be developed in its learning material. According to Lestari Endang (2023) in her research entitled *The Student's Perspective Of The Employee And The Regular Class Of Chemical Technology Study Program In Learning English Focusing On The Sugarcane Processing At Polytechnic LPP Yogyakarta: A Need Analysis*. English in the world of Vocational Higher Education should be discussed in ESP according to the learning needs analysis.

ESP

English for Specific Purposes (ESP) is a branch of English language teaching that focuses on developing language skills and knowledge tailored to particular fields or

professions. Unlike general English language learning, ESP is designed to meet the specific needs of learners in areas such as business, medicine, engineering, or aviation. It emphasizes vocabulary, grammar, and communication strategies relevant to the learners' professional contexts, enabling them to effectively use English in their specialized domains.

Initially, the purpose of ESP can be seen as a training ; in other words, the learners will be provided with specific skills and knowledge to be applied to tackle problems. Follow this direction, according to Dragoescu & Stefanovic (2010), ESP is defined as “an essential training operation which seeks to provide learners with a restricted competence to enable them to cope with certain clearly defined purposes, which the ESP course is designed to meet. That is related to Susilowati (2008), ESP is viewed as an approach to language learning, primarily based on the specific purposes and needs of a learner. Meanwhile, Rahman in his research article (2018) mentioned that ESP is related to specific disciplines which are designed for adult learners at a tertiary education or in a professional work situation.

Many researchers are also of the same opinion that ESP helps English learners to communicate properly not only for daily competence but also for various practices of specific careers. Based on Hyland (2007), ESP addresses the communicative needs and different activities of particular professions and occupations in society. Simultaneously, refers to Hamad& Hamad (2014), ESP is a term referring to teaching and studying English for specific professions in the walks of life and there are always reasons why English is learned.

Related to Chandrashekar (2019), since ESP has become a new trend, learners' demands are highly increased to focus on developing communicative competence in various practices of professions and occupations. There is a variety of ESP courses ranging from English for waiters, English for tourism, or English for business to English for technology, English for engineering, or English for science that are currently implementing all over the world; however, specialized vocabulary; in other words, terminology is very pivotal but also challenging in the domain of teaching and learning.

Mechanical Technology

A mechanical technology study program typically focuses on educating students in the principles and applications of mechanical engineering, with a strong emphasis on hands-on skills and practical knowledge. Courses within this program often cover topics such as mechanics, materials science, thermodynamics, fluid mechanics, manufacturing processes, computer-aided design (CAD), and control systems. Students may also learn about the design and analysis of mechanical systems, including machines, engines, HVAC systems, and robotics. Additionally, programs may include instruction in project management, technical communication, and professional ethics to prepare students for careers in various industries. Overall, a mechanical technology study program aims to provide students with a comprehensive understanding of mechanical engineering concepts and the practical skills necessary to succeed in the field.

A mechanical technology in the plantation industry fabrication study program is designed to equip students with the knowledge and skills necessary to support the mechanical needs of the plantation industry, particularly in the fabrication of machinery and equipment used in agricultural settings. Courses in this program typically cover a range of topics tailored to the specific needs of the plantation industry, including:

- Agricultural Machinery Design:** Students learn about the design principles and considerations specific to machinery used in the plantation industry, such as harvesters, tractors, irrigation systems, and processing equipment.
- Fabrication Techniques:** Instruction in various fabrication techniques, such as welding, machining, forging, and casting, is provided to enable students to manufacture components and machinery parts used in agricultural operations.
- Agricultural Systems Engineering:** Students study the integration of mechanical systems within the broader context of agricultural operations, including considerations for efficiency, sustainability, and environmental impact.
- Maintenance and Repair:** Skills related to the maintenance, troubleshooting, and repair of agricultural machinery are emphasized to ensure the reliable operation of equipment in plantation settings.
- Automation and Robotics:** With the increasing adoption of automation in agriculture, students may learn about the application of robotics and automated systems for tasks such as planting, harvesting, and monitoring crop health.
- Safety and Regulations:** Instruction in safety protocols, regulations, and standards specific to the operation and maintenance of machinery in agricultural settings is provided to ensure the well-being of workers and compliance with industry requirements.

Overall, a mechanical technology in the plantation industry fabrication study program prepares students for careers in roles such as agricultural machinery technicians, fabrication specialists, maintenance engineers, and equipment designers within the agricultural sector. The program emphasizes both theoretical knowledge and practical skills to meet the unique challenges and demands of the plantation industry.

RESULTS AND DISCUSSION

This study is descriptive quantitative research. The researcher collected the data through questionnaires were then analyzed to find out the percentage of each need. The results of the analysis that has the highest percentage data presented in the form of a table as well as a description. There are 41 Mechanical Technology respondents at Polytechnic LPP Yogyakarta that consist of 37 students from regular class and 4 students from employee class participated in this research by filling out the online questionnaires. The questionnaire was distributed to the students in two different classes in the beginning of the research to gain the data about their target needs and learning needs. The participants were selected using purposive sampling.

Necessities

In the context of needs analysis in learning English for specific purposes, "necessities" refer to the essential language skills, knowledge, and abilities that students require to effectively function within their specific professional or academic contexts. These

necessities are determined by the tasks, communication situations, and language demands that students are likely to encounter in their field or area of study. Here are some findings of necessities in need analysis for students learning English for specific purposes majoring Mechanical Technology:

Table 1. Students' Necessities in Learning English

No	Criteria	Regular Class	Freq	%	Employee class	Freq	%
1.	Interest in learning English	Very interested	30	75	Very interested	3	75
2.	Skill mastering	Reading and speaking	6	18.18	Reading	2	50
3.	Text read in current study	Descriptive text, procedure text, narrative text	20	54.55	Descriptive text	3	75
4.	Topics written in current study	Dialogue text, contextual Procedure text	13	36.36	Descriptive text, procedure	2	50
5.	Listened in current study topics	Descriptive, procedure	33	90.91	Descriptive, procedure	3	75
6.	Read in current study topics	Mechanical engineering, use of tools, practice in the field using machine tools	26	72.73	Field practice regarding tools, descriptive	2	50
7.	Written in current study topics	learn to apply how to use plantation machine tools	30	75	plantation machine tools	3	75
8.	Listened in current study	machine tools in plantation life	16	45.45	Machine tool applications in the world of work (especially plantations)	2	50
9	Vocabulary meet	Boiler, aerator, water heater, attemporator, pump, industry draft fan, second draft fan, force draft fan. Adjustable wrench, multi toque wrench, hammer, open est.	33	90.91	Equipment, element, maintenance, button, symbol, circuit, boil, start, stop, press, pull, hold, limit, specification, tools, flow, back, in	3	75
10	Reward in English class	Indifferent	20	54.55	indifferent	2	50
11	Material studied in machine material class technology	Mechanical properties of materials, material characteristics, sustainability in the environment	6	18.18	Machine care and maintenance with a good system	2	50
12	Proficiency level to support the job	Advance	16	45.45	Advance	3	75

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Students pursuing mechanical engineering may have various interests and motivations for learning English, which can influence their approach to language learning. Mostly, they are interested in learning English. In learning English for mechanical engineering, students aim to master a combination of language skills to effectively communicate and excel in their academic studies and future careers in the field. Students need strong reading comprehension skills to understand technical documents, research papers, textbooks, manuals, and other academic materials in English. This involves identifying key information, understanding complex concepts, and extracting relevant details from technical texts. Mastering speaking skills enables students to express themselves fluently and accurately in English, both in academic settings and professional contexts. This includes participating in class discussions, delivering presentations, explaining technical concepts, asking questions, and engaging in conversations with peers and instructors.

Rewarding students in English class can be highly beneficial for motivation, engagement, and overall learning outcomes. Provide constructive feedback that highlights students' strengths, areas of improvement, and specific actions they can take to enhance their English skills. Positive and specific feedback reinforces desirable behaviors and encourages students to strive for excellence. Implement a classroom rewards system where students earn points, tokens, or stickers for completing assignments, participating in discussions, asking questions, or demonstrating positive behaviors. Accumulated points can be exchanged for privileges, prizes, or incentives. By incorporating rewards and positive reinforcement strategies into the English classroom, educators can inspire students to actively engage with the language, develop their skills, and achieve success in their language learning endeavors.

Related to the topics of study, there are similar topics mentioned by them, such as Measurement tools, instrumentation, sugar fabrication, tools maintenance, and load tools. More than 50% of every classes who mentioned the vocabulary in their study and work time, such as Boiler, aerator, water heater, pump, in-dust draft fan, second draft fan, force draft fan. Adjustable wrench, multi toque wrench, hammer, open and wrench, combination wrench, ring wrench.

Lack

"Lack" in the context of needs analysis for students learning English for specific purposes refers to the areas where students are deficient or where there is a gap between their current language proficiency and the language skills required to fulfill their professional or academic objectives effectively. Identifying these lacks is crucial for designing targeted language instruction that addresses students' specific needs and helps them overcome their deficiencies. Here are some findings of lacks that are identified through needs analysis:

Table 2. Students' Lack in Learning English

No	Criteria	Regular Class	Freq	%	Employee Class	Freq	%
1.	Difficulties in learning English	Grammar	6	18.18%	Grammar	1	25.00%
2.	Something that makes afraid is speaking English	Memorize vocabulary and practice	6	18.18%	Memorize vocabulary, practice	1	25.00%
3.	English proficiency test	Never	30	81.82%	Never	1	25.00%
4.	Something that difficult to understand	vocabulary that has never been heard before	16	45.45%	Talk directly	1	25.00%
5	English proficiency level	Beginner	26	72.73%	Intermediate	2	50.00%

We can see in table 2, there are 5 criteria for students lacks. Mostly, they answer Grammar as one of skill that is difficult to learn. Grammar can be particularly challenging for English learners in specific purposes because it often involves specialized vocabulary, structures, and conventions that are unique to particular fields or industries. In English for specific purposes (ESP), whether it's in fields especially in the engineering field, learners not only need to grasp general English grammar but also need to understand how grammar functions within the context of their specialized area. While for Vocabulary session, the students feel that it is one of that something makes them afraid to study, since Vocabulary acquisition can be challenging for English learners in the field of mechanical engineering for several reasons. In fact, most of the students never did some English Proficiency test before. That is a crucial part, remembering that By taking proficiency tests at different stages of their learning journey, learners can track their progress and set goals for improvement. These tests provide measurable benchmarks that help learners gauge their language proficiency levels over time. Some of the students have ever taken some English Proficiency test with the level Beginner and Intermediate. English proficiency requirements for engineering students can vary depending on factors such as the country where they are studying, the institution they are attending, and the specific program or course requirements. However, in general, engineering students typically need to achieve a minimum level of English proficiency to effectively participate in their studies and succeed in their future careers.

Wants

"Wants" in the context of needs analysis for students learning English for specific purposes refer to the desires, preferences, or additional learning objectives that students have beyond their basic language needs. While "needs" focus on the essential language skills and knowledge required to perform specific tasks or functions within a particular context, "wants" address the additional areas of interest or personal goals that students

may have in their language learning journey. Here are some finding of "wants" that are identified through needs analysis:

Table 3. Student’s Wants in Learning English

No	Criteria	Regular Class	Freq	%	Employee class	Freq	%
1.	Text read in job	Descriptive and Report Text about How it works, heavy equipment operation	20	54.55	Descriptive and Report Text about Explanation of the functioning of heavy equipment operation.	4	25
2.	Text written in job	Writing descriptive and report text about welding tools, plantation product processing technology	16	45.45	Description of work in the field using tools	2	50
3.	Listening activities	Related to machine tools, how to use tools, machine practical labor	20	54.55	Descriptive	2	50
4.	Text in speak in job	Story telling, conversation in pairs directly listening to the lecturer	20	54.55	Dialogue in pairs directly	2	50
5.	Topics meet in job	About welding, machine maintenance, auto CAD	33	90.91	Procedure job	3	75
6.	Reading activities	Read the provisions regarding how the tool works and the definition of a tool (procedure text)	26	72.73	Read stories in English version related to machine tools	2	50
7.	Listening activities	Listen teacher explanation, video explanation	6	18.18	Listening activities	2	50
8.	Writing activities	Write text or a sentence about machine tools in plantations (Text Description)	26	72.73	Writing job description	3	75

The specific language needs and preferences of students learning English for mechanical engineering can vary based on factors such as their background, proficiency level, learning style, and career goals. Designing language skill-specific activities for students in mechanical technology within the plantation sector involves tailoring language learning tasks to the specific needs, context, and objectives of learners.

In listening activities featuring audio recordings or videos of machinery operations, maintenance procedures, safety protocols, and workplace instructions related to plantation machinery. Conduct role-playing exercises or simulations where students practice giving and following instructions for operating machinery, troubleshooting equipment issues, or coordinating tasks in a plantation setting. Encourage students to participate in group

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discussions or presentations on topics such as advancements in agricultural technology, sustainable farming practices, or safety regulations in the plantation industry. Provide authentic reading materials such as equipment manuals, technical specifications, maintenance guides, and research articles on mechanical technologies used in plantation management.

Design reading comprehension activities that require students to identify key information, understand technical descriptions, and infer meaning from context within the context of agricultural machinery and technology. Assign writing tasks that mirror real-world communication scenarios in the plantation sector, such as drafting equipment operation manuals, maintenance reports, safety guidelines, or technical proposals for implementing new technologies. Encourage students to write reflective journals or reports documenting their experiences with machinery operation, maintenance tasks, or problem-solving in plantation settings, highlighting technical vocabulary and language structures.

Integrate grammar instruction focusing on language structures commonly used in technical writing and communication within the plantation sector, such as imperative sentences for giving instructions, passive voice for describing processes, and conditional sentences for discussing hypothetical situations. Provide grammar practice exercises contextualized within the vocabulary and themes relevant to mechanical technology in plantation management.

Goals

"Goals" in the context of needs analysis for students learning English for specific purposes refer to the specific objectives or outcomes that students aim to achieve through their language learning efforts within a particular professional or academic context. These goals are closely aligned with the tasks, responsibilities, and communication situations that students will encounter in their field or area of study. Here are some findings of goals that are identified through needs analysis:

Table 4. Student's Goals in Learning English

No	Criteria	Regular Class	Freq	%	Employee class	Freq	%
1.	Aims in learning English	Achieve proficiency in English communication encompassing pronunciation, speaking, and listening skills.	30	81.82	communication well using english and clearly	3	75
2.	Purpose in learning Reading	Able to read English text and pass TOEFL above average test, and IELTS	26	72.73	Read and pronunciation sentence in manual tools correct and can practice from the reading	2	50
3.	The goal of learning Writing	Able to write using word order and grammatically correctly and able to	20	54.55	Able to write work Procedure correct and easy to understand	2	50

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		understand the reading well					
4.	Purpose in learning listening	Able to understand others speak and be able pass the TOEFL test, and can interact directly with people	16	45.45	Able to listen and understand English conversation with foreigners	3	75
5	Purpose in learning speaking	Able to speak and convey clearly and grammatically correct and easy to understand	13	36.36	Able to speak deeply English conversation with foreigner and able to explain the mechanization of machine tools	3	75

When sequencing learning activities in English for specific purposes (ESP) in mechanical engineering, it's essential to consider the specific language needs and goals of the learners, as well as the complexity of the material and the context in which they will be using English. The purpose of learning English for specific purposes (ESP) in mechanical technology with a focus on the plantation sector is to equip learners with the language skills and technical knowledge necessary to excel in their roles within the agricultural industry.

There is a need to develop proficiency in English communication skills to effectively interact with colleagues, supervisors, and stakeholders in the plantation sector, including engineers, technicians, agronomists, and farmers. Acquire specialized vocabulary related to mechanical technology and agricultural machinery used in plantation management, such as terminology for tractors, harvesters, irrigation systems, fertilization equipment, and crop processing machinery. Gain the ability to comprehend and interpret technical documents, manuals, specifications, and safety guidelines related to the operation, maintenance, and troubleshooting of machinery and equipment used in plantation activities.

Learn language skills to understand and communicate safety protocols, regulations, and compliance standards relevant to mechanical technology in the plantation sector, promoting safe working practices and minimizing risks in agricultural operations. Develop language proficiency to follow instructions, perform equipment checks, conduct routine maintenance tasks, and troubleshoot mechanical issues efficiently, contributing to the smooth operation of machinery and optimization of plantation processes.

Acquire language skills to discuss and evaluate advancements in mechanical technology, agricultural automation, precision farming, and sustainable practices, fostering innovation and adaptation of new technologies in plantation management. Enhance collaborative skills and critical thinking abilities to work effectively in multidisciplinary teams, solve technical problems, and implement solutions related to mechanical technology in plantation operations.

Prepare for career advancement opportunities in the agricultural industry by developing language proficiency and technical expertise in mechanical technology, opening doors to roles such as agricultural machinery technicians, equipment managers, or technology consultants. Stay abreast of industry trends, market developments, and emerging technologies in mechanical technology and agricultural engineering through English-language resources, publications, and professional networks, facilitating continuous learning and professional growth.

CONCLUSIONS

In recent years, job candidates are currently required not only professional knowledge and skills but also English specifically implemented in particular occupations. Since then English for specific purposes (ESP) is the latest trend which has exponentially developed. The majority of universities have deployed diverse ESP courses in order to help learners address communicative needs as well as practices of particular professions. Linking with the industry, it makes the learning process should consider the needs from both side, students in the regular class and employee class. The views of regular class students and employee class were analyzed and recommendations were made. In terms of teaching English for specific purposes, need analysis become an important step, by analyzing students' needs, the result it can be used by the lecturer to develop the appropriate learning material. There are 6 points described by the researcher related to the students' need, as follows: Necessities, Lack, Wants, Goals, Role, and Procedure. Mostly the learners study English to sharpen their communication skill. They want to talk about their job both reading text and vocabulary related to sugar industry. They feel that grammar and pronunciation are the difficult point in learning English. There is a huge gap between the skills required for successful future job performance and the skills acquired by the engineering graduates and day by day this gap is widening due to change in demand and social requirements. Based on the students and academicians views and the correlation between the skills needed by industry and the engineering program curricula that will be able to train the students, it can be concluded that the observations of the study will be useful to the students, faculty, and management of the engineering institutes in developing the right curriculum, providing the necessary skills and helping the industry in providing the right human resource thus contributing to the economic progress of the country.

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