Designing TPACK-English Textbook for Economic Faculty Students

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Abstract

This study thoroughly investigates the educational needs of Economics students in English for Specific Purposes (ESP) and Technological Pedagogical Content Knowledge (TPACK), based on a survey of 292 students and 12 alumni from the Economics faculty. The study reveals nuanced linguistic preferences across six fundamental components: task, activity, language use, technology, pedagogy, and topic or content relevancy. The findings show that listening skills, particularly for information acquisition, were highly valued (mean score: 3.01), whereas speaking abilities such as explaining and knowledge elicitation were universally deemed critical (mean scores > 3.00), whereas activities such as making suggestions were deemed less important (mean score: 1.99). The study also identified important areas in economics education, highlighting significant topics such as Economics, Microeconomics, and Islamic Economics (mean scores > 3.00) and the impact of English proficiency levels in maximizing learning experiences. The findings demonstrate a variety of activity priorities, with a focus on collaborative instructional tactics and specific linguistic demands in economic communication. Furthermore, this study explored students' educational needs and the design of English instructional material for economics faculty students. This design integrates technology, language skills, and economic theory to improve student learning and skill acquisition.

Keywords: educational needs, economics faculty students, ESP, tpack

1. Introduction

Proficiency in the English language is essential for students studying economics due to several significant factors. English is the dominant language of international business and communication in today's globalized economy. Being able to communicate in English effectively can open up a world of opportunities for economics students, allowing them to engage with a wider range of professionals, access global markets, and participate in international collaborations. Furthermore, clear and accurate communication is essential for conveying complex ideas, analyzing data, and presenting research findings in economic fields. Proficiency in English can enhance students' ability to effectively communicate their ideas and contribute to economic discussions and debates. Finally, strong English skills can give economics students a competitive edge in the job market, as many employers' value candidates proficient in English due to its global importance.

Teaching English for Specific Purposes, commonly known as ESP, has been a challenging task for lecturers in the economics faculty. This course is mandatory for students, although they only learn it for a limited number of credit hours. However, it is considered a useful way for non-English department students to improve their language skills and prepare for their future employment demands as well as to acknowledge that students at higher education levels have diverse learning needs. Recent studies by Iswati & Triastuti (2021) have highlighted the importance of ESP in meeting the students' current and future demands, while Yunita (2022) has emphasized the need to address the various learning needs of students at higher education levels.

English for Specific Purposes (ESP) is a language learning method that focuses on specific English abilities for specific situations, tailored to the needs of individual students (Harding, 2007; Askar, 2009; Agustina, 2014). Meanwhile, the scope of an ESP lesson is narrower than that of an ELT lesson (Basturkmen 2018). ESP-based education is advanced based on requirements, objectives, and learning activities. Contextualized learning is preferred for ESP students. Studying English, particularly economics English, increases the value of human resources, requiring well-designed English language teaching materials, media, and methods (Adipat 2021), as well as technology (Abu-Hardan, Al-Jamal, and Sa'Di 2019). English instructional materials must facilitate face-to-face, virtual, or hybrid learning to achieve learning objectives in the current new normal age (Adipat 2021). In addition, English instructional materials must incorporate real-world examples and scenarios that are relevant to the student's field of study. This will help them develop practical language skills and enhance their understanding of economic concepts in an English-speaking context. Furthermore, the use of technology and interactive multimedia can greatly enhance the effectiveness of ESP-based education, allowing students to engage with the material in a dynamic and immersive way.

Course designers should include contemporary English instructional resources, since commercially-oriented texts sometimes lack contextualization and authentic language in the learning process (Syatriana 2013). Genuine material, such as actual language, is essential

for fulfilling curricular requirements and attaining contemporary educational goals. Discovering these items allows learners to see and hear genuine language that serves a purpose, for example, in economics, students must study contemporary economic concerns as well as conventional and Islamic economics.

Need analysis is a must in ESP instruction. Before developing instructional material, it is critical to address the needs of the pupils (Saragih 2014). Many studies on this topic have been undertaken (Axmedovna et al. 2019); (Iswati and Triastuti 2021); (Rachmawati, Hastari, and Dwiharto 2021). Prior studies investigated students' pedagogical and material needs using Present Situation Analysis (PSA), Learning Situation Analysis (LSA), and Target Situation Analysis (TSA). The rapid evolution of education and technology nowadays demands lecturers and course designers consider how to incorporate this situation into instructional content. Even up until the middle of 2021, some tertiary education offered online study. Furthermore, the use of technology is thought to be capable of motivating pupils to study English (Syafitri 2021). Furthermore, understanding students' needs for technology, pedagogy, and content (TPACK) is pertinent to students' current desire to boost their enthusiasm for studying English. TPACK is considered effective for Saudi Arabia's English lecturers and students (Alhababi 2017).

Therefore, this research describes the development of teaching materials based on an analysis of the needs of economics faculty students for ESP and TPACK. Therefore, first, the researcher explains the findings of student needs regarding target needs, learning needs, technology, pedagogy, and English learning content. So, the research issues are: what are students' educational need and what does English teaching material for economics faculty students look like based on TPACK?

2. Literature Review

2.1 Need Analysis in the ESP Context

Previous research on ESP in economics faculties has highlighted the challenges faced by lecturers and the importance of tailoring English instruction to the specific needs of students. (Iswati and Triastuti 2021) found that ESP is seen as a useful way to prepare non-English department students for future employment. However, there is a lack of research on how to design effective instructional materials for economics students based on Technological Pedagogical and Content Knowledge (TPACK).

Analysis of needs is essential for running an ESP course. It helps to gain fundamental knowledge about the students' requirements, wants, and job needs (Oktavia and Suwartono 2020). Through this systematic procedure, gaps between targets and reality can be identified, action priorities can be established, and difficulties can be recognized. To build a learning system, it is important to analyze learning demands and conduct a learning analysis. This process helps ensure that the learning system is tailored to meet the specific needs of the learners. By understanding the learners' specific needs, instructors or lecturers can design and implement appropriate instructional strategies and materials. For example, if the learners need to improve their communication skills for a specific job, the course can focus on interactive activities and role-plays that simulate workplace scenarios. Additionally, a learning analysis can also inform the selection of appropriate assessment methods to measure the learners' progress and success in meeting their individual goals. Ultimately, analyzing needs and conducting a learning analysis are crucial steps in creating a successful and effective ESP course.

Various experts have recommended different kinds of need analysis in the past. Some of them include Basturkmen (2010), Basturkmen (2018), Harding (2007), Askar (2009), and Hutchinson & Waters (1987). Hutchinson and Waters categorized learners' needs into necessities (what the students have to learn), deficiencies (what the students already know but need to improve on), and dealing with task, activity, language use, technology, pedagogy, and topic or content relevancy. Essentially, it's about determining what learners expect and need in a given situation (Oktavia and Suwartono 2020). For example, students studying Islamic banking must possess a good understanding of banking in order to effectively engage with consumers and leaders during conferences.

2.2 Technological Pedagogical and Content Knowledge (TPACK)

Technology has affected many parts of society, including education. Technology helps economics students learn English by providing real resources, language practice, and online social cooperation and debate. Economics students may use the Internet and mobile devices to acquire English from genuine texts, converse with native speakers, and write reflectively. Its flexibility and mobility enable students to study in and out of class. Technology improves language learning by giving many tools and possibilities (Viatonu et al., 2014; Hidayat et al., 2022). Computers are crucial to personal and professional life. Information creation, storage, transmission, and processing change drastically (Rahimi and Pourshahbaz 2019). Technology's massive development has drawn public attention and sparked inquiry into how it is employed in education. The field of Computer-Assisted Language Learning (CALL) has grown into a study

TPACK is a knowledge strategy that uses technology effectively in a curriculum (Syamdianita and Cahyono 2021), based on Shulman's theoretical framework (Ariani et al., 2014; Mishra & Koehler, 2006; Santos & Castro, 2021; Shulman, 1987).. It identifies suitable technology, why it's used, and how it delivers learning material, helping lecturers understand interconnections for successful teaching. TPACK is a knowledge strategy that uses technology effectively in a curriculum (Syamdianita & Cahyono, 2021), based on Shulman's theoretical framework (Ariani et al., 2014; Mishra & Koehler, 2006; Santos & Castro, 2021; Shulman, 1987). It identifies suitable technology, why it's used, and how it delivers learning material, helping lecturers understand interconnections for successful teaching. TPACK is crucial in today's digital age as it enables educators to integrate technology seamlessly into their teaching practices. By combining pedagogical knowledge, content knowledge, and technological knowledge, educators can create engaging and interactive lessons that cater to the diverse learning needs of their students. Moreover, TPACK also empowers teachers to adapt and evolve their

instructional strategies to keep up with the rapid advancements in technology, ensuring that their teaching remains relevant and effective.

2.3 The Design of ESP Instructional Material Based on TPACK

Instructional materials play a crucial role in language learning. Basturkmen (2010) proposed three methods for developing these materials: selecting existing teaching subjects, writing lessons, and adapting materials. The primary goal of language learning is to use the language for communication, and the content should be organized in a way that directs students to work on communicative tasks. This study used two theories of English for Specific Purposes (ESP), Hutchinson & Waters (1987) and Basturkmen (2010), as the foundation for developing ESP instructional materials. However, a critical gap existed in this field before the emergence of Technological Pedagogical Content Knowledge (TPACK). TPACK bridges this gap by incorporating the ideas presented by these theories within the English-based TPACK framework, which distinguishes multiple components across seven unique dimensions. Hutchinson and Waters laid the foundation for several areas of language education within ESP, while Basturkmen focused on language, student involvement, and connecting projects with experts. TPACK combines the strengths of these theories into a coherent educational framework within economics and English.

This framework allows educators to effectively integrate technology, pedagogy, and content knowledge into their teaching practices. By incorporating the ideas presented by Hutchinson, Waters, and Basturkmen, TPACK provides a comprehensive approach to language education within ESP that emphasizes student engagement, language proficiency development, and real-world connections. This integration of theories and dimensions enhances the learning experience for students in both economics and English disciplines. By providing learners with chances to engage in practical and authentic language use, they may enhance their proficiency and ease in using the language. Engaging in this practice may result in enhanced linguistic proficiency and self-confidence in verbal communication and comprehension. This may finally enable them to fully attain mastery of the language.

This alignment emphasizes the complex integration of instructional approaches, material, language skills, and technological tools, emphasizing TPACK's comprehensive nature in meeting the various demands of ESP education. The study employs TPACK to bridge the gap between the two theories indicated above while also emphasizing three influential domains for students: cognitive, affective, and psychomotor domains. The four economic phrases used to characterize each phase were: raw material collection zone, logistic zone, manufacturing zone, and testing zone.

3. Method

The study employed a survey methodology to collect data from 292 students, it was total sampling. All the students of third semester were involved including 12 alumni from the Economics faculty of Universitas Islam Negeri Sjech M. Djamil Djambek Bukittinggi, West Sumatera, Indonesia. This study distributed the questionnaire through Google Form. The survey was aimed at finding the answer of research question, "What are economics students' educational needs on English for Specific Purposes (ESP) and Technological Pedagogical Content Knowledge (TPACK)?" Prior to distribution to economics students, the instrument undergoes a process of content validation, which involves obtaining assessments from specialists regarding the required items. Subsequently, the data is analyzed utilizing the Aiken index. The validation results indicate a coefficient of 0.89, indicating a high level of validity. The data was analyzed using descriptive statistics to determine the mean scores for different components and identify significant findings. Then, the results were then interpreted and discussed in light of the research objectives and implications for future studies.

This was a developmental study. It aimed to assess students' ESP and TPACK needs and build economics English instructional materials. Because need analysis can be conducted inductively or deductively (Berwick 2017), this study used both a distribution questionnaire and interviews to supplement the findings. The questionnaire and interview questions were constructed using the ESP and TPACK theories (Basturkmen, 2010; Hutchinson & Waters, 1987; Koehler & Mishra, 2009) to address students' needs in the areas of language skills, technology, pedagogy, and content of English language learning. The questionnaire was distributed to students and alumni via Google Forms. In the meantime, this study used the ADDIE paradigm (Branch 2009) to create instructional materials for economic faculty students. Analyze, design, develop, implement, and evaluate are the steps involved. However, this study simply explored the analysis and design phases.

4. Results and Discussions

TPACK highlights the importance of lecturers' ability to effectively use technology tools and resources to enhance their teaching practices and improve student learning outcomes. In the field of English instruction for economics faculty, TPACK can play a crucial role in composing and implementing instructional materials that promote students' language proficiency. By considering the intersection of technology, pedagogy, and content knowledge, as well as considering students' need, educators or lecturers can make informed decisions about the most suitable materials that align with their teaching goals and the needs of their students. The findings of the study revealed nuanced linguistic preferences and the design of instructional materials across six fundamental components: task, activity, language use, technology, pedagogy, and topic or content relevancy including an intensive examination of language skills (listening, reading, speaking, writing, vocabulary, and grammar).

4.1 Need Analysis

This part aimed to identify economics students' educational requirements in the areas of English for Specific Purposes (ESP) and Technological Pedagogical Content Knowledge (TPACK). 292 students and 12 alumni from the Economics faculty completed a thorough

survey.

4.1.1 Students' Needs on Task

The findings include a detailed breakdown of the mean scores, reflecting the perceived importance of various linguistic competencies as shown below.

Table 1. Students' needs on task

Skills/component	Statements	Mean score	Category
Listening	To differentiate intonation in a sentence	2.96	Needed
	To obtain factual information	3.01	Highly needed
	To recognise and understand opinions	2.91	Needed
	To recognise the attitude of the speaker	1.99	Less needed
Speaking	Give explanations	3.11	Highly needed
	Make comparison	3.06	Highly needed
	Provide personal information	3.03	Highly needed
	Express opinion	2.99	Needed
	Elicit information	3.16	Highly needed
	Make suggestion	1.99	Less needed
Reading	Identify topic	3.00	Needed
	Identify topic sentence	2.97	Needed
	Understanding a paragraph	3.06	Highly needed
	Make an inference	2.99	Needed
	Vocabulary building	2.98	Needed
	Understanding a longer passage	3.00	Needed
Writing	Writing paragraph	3.17	Highly needed
	Writing application letter	2.83	Needed
	Writing announcement	3.03	Highly needed
	Writing business letter	2.97	Needed
	Writing about things/people	2.96	Needed
	Writing essay	1.98	Less needed
	Writing thesis statement	3.09	Highly needed
Vocabulary and grammar	Gap filling	3.21	Highly needed
	Paraphrase	1.97	Needed
	Multiple choice	3.16	Highly needed
	Completion	3.18	Highly needed
	Recognise definition	3.16	Highly needed
	Recognise synonym	1.97	Less needed

The acquisition of accurate information appeared to be particularly important in listening skills, obtaining a high mean score of 3.01. In contrast, determining the speaker's attitude obtained a significantly lower score, indicating a perceived reduced requirement (mean score: 1.99). In today's education system, the importance of developing strong listening skills cannot be overstated. Economics faculty students are not only expected to absorb and retain information but also to actively engage in fruitful discussions and make informed decisions based on what they hear. This piece will delve into the significance of the listening subject as a means to gather factual information about economic world, exploring the reasons why students must excel in this aspect of their education. Students must excel in this aspect of their education to become well-rounded individuals and contribute effectively to society. This aspect of their education is crucial for their personal growth and future success (Owca, Pawlak, and Pronobis 2003).

Meanwhile mean scores over 3.00 demonstrated the widespread consensus that speaking abilities like explaining, comparing, and eliciting knowledge are extremely important. Making suggestions, on the other hand, was rated as less important (mean score: 1.99). Further research on reading and writing abilities revealed subtleties of necessity. Understanding paragraphs and writing paragraphs emerged as highly important areas requiring immediate attention, scoring above 3.00. Tasks involving essay writing and synonym recognition, on the other hand, were viewed as less critical based on their lower mean results. Vocabulary and grammar tasks such as gap filling, multiple-choice exercises, completion tasks, identifying definitions, and paraphrasing were judged critical, with all getting mean scores above 3.00, except paraphrasing, which had a moderate requirement (mean score: 1.97). These findings shed light on the varied educational needs of economics students in ESP and TPACK, highlighting specific areas that require immediate attention and refinement within the educational curriculum.

4.1.2 Students' Need for Activity

The assessment of students' requirements, which included a variety of linguistic activities, indicated distinct priorities in the domains of listening, speaking, reading, writing, vocabulary, and grammar. Activities involving exposure to dialogue through audio and short video materials were identified as highly important in terms of listening skills, with mean scores over 3.00, highlighting their great need for attention and improvement. While conversations and simulation/role plays were regarded as very necessary, with mean values of 3.20 and 3.16, respectively, activities such as interviews and presentations were deemed somewhat necessary, with mean scores of 2.89 and 2.97. Scanning, skimming, and processing short texts were all regarded as extremely required, with scores exceeding 3.00; however, reading

extensive articles and novels scored significantly lower at 1.97, indicating a decreased perceived necessity.

During collaborative writing, online platforms were found to be moderately necessary (with mean scores around 2.96-2.98). Online collaborative writing enhances students' language learning outcomes, improving grammar recall, paragraph organization, longer text writing, and vocabulary usage. Collaborative knowledge creation and long-term retention are also enhanced through online collaboration. Additionally, online collaborative PBL can have positive effects on learners' attitudes and motivation towards learning the target language." (Al-Rawahi and Al-Mekhlafi 2015). However, writing individually scored much lower with a mean score of 1.98, indicating considerably lesser significance.

Personalized learning methods were emphasized for vocabulary and grammar activities. Text and game-based activities were considered highly necessary (scoring above 3.00), while activities that used short stories showed a clear but slightly lower necessity (with an average score of 2.98). These findings demonstrate how a variety of factors affect language learning and proficiency. Understanding the influence of these factors can help educators create more engaging and tailored language learning experiences. Moreover, investigating the long-term effects of these factors could provide valuable insights into how to optimize language acquisition and retention strategies in the future. They support using individualized teaching methods within the ESP and TPACK frameworks to meet the various needs of economics students comprehensively.

4.1.3 Students' Need for Language Use

The linguistic aspects linked with language-related tasks are included in the feature of language use within the context of English for Economics. This area includes both verbal and textual exchanges relevant to the field. The assessment of specific statements in this domain revealed distinct priorities and degrees of necessity, reflecting the nuanced linguistic demands present in economic communication.

Table 2. Students' need for language use

Statements	Mean scores	Category
Presentation	3.10	Highly needed
Interview	3.04	Highly needed
Conducting a meeting	3.10	Less needed
Negotiation	3.10	Highly needed
Writing business letter	3.13	Highly needed
Writing application letter	2.98	Needed

Presentations, interviews, negotiations, writing business letters, and conducting meetings were revealed to be very important among the analyzed statements, with mean values over 3.00. These activities stood out as vital, highlighting their critical need for attention and improvement within the curriculum. Economics faculty students need to master meeting, presentation, and writing skills for their professional development. The use of language for these activities will develop students' engagement in their learning experience (Sardone 2019). Meeting skills enable team collaboration and informed decision-making, while presentation skills enable clear and persuasive communication of research findings and policy recommendations. Mastering these skills contributes to their credibility and visibility in academic and business communities. Writing skills are essential for composing clear and concise communications with peers, policymakers, and stakeholders, fostering collaboration, and promoting a positive professional image. These skills are crucial for economics faculty students' successful careers. Additionally, strong writing skills can help students effectively convey complex ideas and arguments, which is essential in their academic pursuits.

Notably, writing application letters received a much lower mean score of 1.98, indicating a perceived reduced importance when compared to other language-driven activities within the study. These findings outline the subtle linguistic requirements inherent in economic communication, highlighting certain areas that require adapted instructional techniques and increased attention within the educational framework for economics students participating in English language activities.

4.1.4 Students' Need for Technological Knowledge

The rapid advancements in technology are significantly impacting the education sector, as they are in all other fields. Educational technology can help students be more engaged by giving them immediate feedback, creating flexible learning spaces where they can work alone or with others, offering advanced or college-level courses, letting students retake courses they failed, reducing scheduling conflicts, and keeping students who are at risk of dropping out from school (Delgado et al. 2015). Within educational contexts, technology entails more than just the physical devices used; it entails a thorough understanding of how to select, implement, and smoothly integrate technological resources into the curriculum. It goes beyond hardware, encompassing the quality and efficacy of instructional resources accessed via various applications, websites, and learning games. In this context, technology encompasses a wide range of information relevant to many technological aspects, including not only the equipment itself but also the exploitation and assimilation of these tools to improve educational approaches.

Table 3. Students' need on technology

Students' need	Mean scores	Category
Listening from audio	3.04	Highly needed
Learning from video	3.04	Highly needed
Using picture	3.00	Needed
Using graph	2.97	Needed
Using PPT	3.01	Highly needed
Reading announcement	3.00	Needed
Using blog	1.98	Less needed
Using gamification app	3.00	Needed

The tabulated data depicts the prioritizing and perceived importance of various technological competencies based on the assessment of students' needs for technological knowledge. Listening from audio sources, learning from video, using visual aids such as presentation software (PPT), and reading announcements were identified as highly important, with mean values over 3.00. These competencies highlight the critical need for expertise in harnessing various technological resources to supplement the learning process, emphasizing their important position in the educational landscape.

In contrast, the use of blogs had a lower mean score of 1.98, indicating a substantially lower priority or felt requirement among students in this evaluation setting. However, while using graphs and gamification applications was deemed vital, they received slightly lower mean scores, showing a moderate but obvious demand for expertise in these areas. These findings highlight the multifaceted terrain of technological competence, underscoring the necessity for personalized educational initiatives to provide students with complete technical literacy and proficiency in using a range of electronic tools for improved learning outcomes.

4.1.5 Students' Need for Pedagogical Knowledge

Pedagogy is a broad body of knowledge that includes a variety of teaching practices, classroom management tactics, assessment procedures, lesson plan development, and recognizing different student learning styles. Pedagogy is frequently defined within this diverse topic as the adept expertise comprising the fusion of art and science in teaching, ranging from comprehensive learning theories to the intricate creation of instructional approaches.

The evaluation of students' pedagogical knowledge demands, elucidates the priority and perceived significance of various pedagogical approaches. Communicative language teaching, and project-based learning emerged as highly important, with mean scores over 3.00. These abilities emphasize the critical importance of mastering these approaches in building effective learning environments and increasing student engagement and comprehension. This findings were in line with the research result of Hidayati et al. (2023) & Kristianto & Harendita (2022) that implementing project-based learning (PBL) in ESP education helps enhance students' understanding of both the theoretical concepts and practical applications of ESP materials. Project-Based Learning (PBL) engages students in tasks that include design, problem-solving, decision-making, and investigation. This approach allows students to work independently for long periods of time and ultimately produce authentic products or presentations. PBL gives students a degree of control over the project and incorporates several skills. Hence, the advantage of Problem-Based Learning (PBL) for English for Specific Purposes (ESP) students lies in its ability to augment their comprehension of ESP subjects by merging language and material, fostering cooperation, and cultivating their proficiency in design, problem-solving, and decision-making and even improve students' reading and speaking skills (Hidayati et al. 2023; Kristianto and Harendita 2022).

Jigsaw activity, on the other hand, received a mean score of 1.98, indicating a comparably lessened emphasis or perceived requirement in this evaluative setting. Furthermore, task-based learning and games obtained mean scores in the 3.00 range, indicating a noticeable but low demand for expertise in these educational modalities. These findings highlight the wide range of pedagogical approaches, emphasizing the need for tailored educational strategies that accentuate and cater to student's needs, allowing for a comprehensive understanding and adept application of various teaching methodologies to optimize learning outcomes.

4.1.6 Students' Needs on the Topic

In the subject of education, content is the fundamental body of knowledge to be distributed, comprising a wide range of factual information, concepts, ideas, frameworks, and theories intrinsic to a particular discipline or field of study. The study proposes a new eight-unit framework for economics in English that integrates technology, language skills, and economic theory. Each unit focuses on specific linguistic demands in economic communication and incorporates authentic materials and activities. The framework aims to improve student learning and skill acquisition by providing personalized instructional tactics and addressing the specific needs of economics faculty students. It can be seen as in table 4.

Table 4. Important topics on economics English

No	Statements	Mean scores	Categories
a	Economics	3.18	Highly needed
b	Microeconomics	3.18	Highly needed
c	Islamic economics	3.17	Highly needed
d	Finance	3.16	Highly needed
e	Accounting	3.16	Highly needed
f	Banking	3.05	Highly needed
g	Islamic banking	3.03	Highly needed
h	International trade	3.02	Highly needed

The proposed eight-unit framework for Economics English is designed to integrate technology, language skills, and economic theory to improve student learning and skill acquisition. Each unit focuses on a specific topic in economics, such as economics, microeconomics, and Islamic economics, and incorporates relevant language skills. For example, in the unit on microeconomics, students may learn how to discuss supply and demand, analyze market structures, and interpret economic graphs and charts. The use of technology is also integrated into the framework, allowing students to access authentic economic materials, engage in online discussions, and practice language skills through interactive activities. By combining these elements, the framework aims to provide a comprehensive and engaging learning experience for economics students. The framework aims to provide a comprehensive and engaging learning experience for economics students by integrating real-world applications and promoting active learning.

The mean scores for crucial subjects in economics education provide significant insights into the essential themes that students must comprehend. Economics and microeconomics, which both received a mean score of 3.18, demonstrate the fundamental relevance of these topics within the curriculum. Furthermore, Islamic Economics, Finance, and Accounting, all with scores above 3.15, serve as cornerstones necessary for a thorough understanding of economic principles within the academic field.

Furthermore, banking, Islamic banking, and international trade, while scoring somewhat below the norm of 3.10, have a considerable weight in the economics curriculum. These subjects represent critical aspects that are important in creating a comprehensive picture of the economic landscape. The strategic emphasis placed on these disciplines highlights their critical role in providing students with a solid foundational understanding, allowing them to manage the complex dynamics of economics within their academic endeavors.

4.2 The Design of Economics in English Based on TPACK

There will be a total of eight units. The utilization of precise terminology in ESP textbooks is crucial. The terminology index in ESP textbooks should be comparable to that found in legitimate ESP works, with a reasonably high level. The density of specialized collocations is also crucial in specialized communication. In ESP, it is recommended to utilize online resources and e-courses as supplemental instructional texts. This allows learners to be exposed to actual specialist writings (Karimnia et al., 2017; Jendrych, 2013). Thus, the framework's body of this study employs economic terminology. 1) The Collecting Raw Material Zone introduces the economic ideas that will be discussed while also incorporating technology to enhance the learning experience. This not only gets the students interested in the material, but also emphasizes the importance of economics in the actual world. 2) Logistic Zone, which combines the complexity of economic theory with the nuances of the English language, enhancing economic comprehension and communication skills. 3) Manufacturing Zone as a practical assignment and activities based on the theory in the logistic zone. 4) Testing Zone as practical coursework and activities that foster critical thinking, encourage active involvement, and ensure that you not only comprehend but can effectively apply economic ideas in the real world. This zone includes case studies and projects focused on meeting cognitive, affective, and psychomotor domains.

4.2.1 Collecting Raw Materials

The collecting raw material zone covers the learning objective, which is to guide the students about the goals they are going to achieve during the lesson. It also includes warm-up tasks in the form of video. Each unit started with warm-up tasks devised based on the video selected, such as from TED talks and some other short videos. By breaking down difficult concepts into terms that are more easily understood, TED talks have the potential to improve the technical vocabulary. This approach helps to break down barriers between experts and the general public, making scientific advancements more accessible to everyone. Additionally, TED talks encourage people to engage with new ideas and think critically about the world around them. By using language techniques to make their talks interesting, educational, and approachable, TED speakers can effectively communicate specialist vocabulary to a diverse spectrum of audiences (Nisa, Sarfraz, and Alvi 2023). The relevant studies (Abd Aziz and Ngadiron 2019; Astika and Kurniawan 2020; Nisa et al. 2023) had found the benefit of utilizing English video of it. Using TED talks as an ICT tool has been shown to enhance oral presentation skills and vocabulary uptake in EAP (Abd Aziz and Ngadiron 2019; Astika and Kurniawan 2020; Maharani, Arifin, and Amala 2023; Mar á A, Junior A, and Astrid 2018; Nisa et al. 2023; Salem 2019; Siegel 2019; Takaesu 2014).

However, in this study, not all videos were devised based on TED talks since not all economics materials are available. The alumni did not suggest developing the textbook for online learning only. As a result, the textbook provides a QR code to activate the video. This allows students to easily access the corresponding video lectures alongside the textbook content. The inclusion of QR codes adds a dynamic and interactive element to the learning experience, enhancing the student's understanding of the economic concepts being taught. By incorporating various video sources, the textbook ensures a comprehensive and diverse range of materials for students to engage with.

QR codes play a crucial role in education by providing students with quick access to information and learning materials. They can engage and motivate learners, support independent and collaborative learning, and help them understand complex concepts (Saprudin, Goolamally, and Latif 2014). QR codes can facilitate interactive experiences like virtual tours and augmented reality activities, promoting active participation and critical thinking skills (Alhababi 2017; Chin, Lee, and Hsieh 2014; Nesy and Pujaningsih 2023; Saprudin et al. 2014). By incorporating QR codes into the curriculum, educators can create a more student-centered and personalized learning environment, leading to enhanced academic success. In conclusion, QR codes have the potential to revolutionize the way students learn and interact with information.

4.2.2 Logistic Zone

The purpose of this step is to provide students with relevant material for their subject matter dealing with economics based on their educational needs. It is adapting and modifying available materials. It also explained how the collaboration between content and language skills enhanced TPACK. This logistic zone served as the subject material for four English skills and English components.

Listening activities are crucial to learning, with TED talks and BBC Learning English being popular sources. Studies show that these can enhance students' listening abilities and vocabulary retention. Regularly analyzing TED talks can also improve language proficiency and foster critical thinking (Celik, 2023b; Takaesu, 2014). Integrating TED speeches into language instruction can promote comprehensive language development, including specialist vocabulary knowledge. Researchers convert videos into audio to provide authentic materials related to the unit topic, allowing students to exchange ideas and information. Following vocabulary lessons are speaking exercises like discussions, role plays, and quick chats. These speaking exercises provide opportunities for students to practice using the new vocabulary in the context of economics and develop their oral communication skills. Additionally, incorporating TED talks into language instruction can expose students to a wide range of topics and perspectives, helping them broaden their knowledge about economics and cultural awareness.

The lecturer introduces technical vocabulary and then authentic reading materials to students. This study proposed pre-reading strategy. Engaging in pre-reading activities is a crucial approach to assist students in acquiring the requisite abilities to become skilled readers (Marinaccio 2012). To execute pre-reading, one must engage in the activities of previewing the text and engaging in discussions about pertinent background knowledge. Prior to reading an article about inflation, students might examine present economic patterns such as escalating prices and engage in discussions on fundamental economic ideas such as the quantity theory of money. This pre-reading exercise facilitates the activation of students' existing knowledge and enables them to create anticipations about the text's subject matter, so augmenting their comprehension abilities. Following the pre-reading exercise, the instructors proceed with an additional step to enhance the students' involvement in the subject. Focusing on developing skills like understanding the main idea, identifying supporting details, and using techniques like scanning and skimming. This enhances reading comprehension and efficiency. This lesson was provided in PPT. The lesson then moves to grammar content, teaching students how to construct sentences using different tenses and sentence structures. Writing classes are given to students, teaching them to write paragraphs and announcements. These classes are often taught after fundamental language abilities have been acquired, emphasizing the importance of writing proficiency before college and engaging in more complex pursuits (Rose, 1985). Writing is seen as an ongoing process of growth and refinement, as individuals undertake novel jobs using fresh resources to reach different audiences. In addition to these writing skills, alumni suggest that economics faculty students should also be competent at writing business letters. Including lessons on writing business letters may take away valuable time and resources from teaching other important skills in economics. Therefore, the instructional book includes lessons on writing business letters, both manually and via email. Furthermore, it provides guidelines on proper formatting and tone. To acquire the necessary materials, researchers collaborated with the head of the study program at the economics faculty, as well as accepting input from alumni and students. Meanwhile, students work in couples, groups, and alone to learn.

4.2.3 Manufacturing Zone

The study focuses on two learning areas: the manufacturing zone and the logistics zone. The logistics zone focuses on developing four language skills and components about topics dealing with economics and suitable tasks, while the manufacturing zone includes tasks and exercises covering all language skills and components. This zone enhances students' proficiency in reading, listening, speaking, writing, vocabulary, grammar, and word structure. By engaging in various activities in both zones, students develop a well-rounded set of language abilities. In the manufacturing zone, students can practice reading technical manuals, listening to the lecturer's instructions, speaking in group discussions, and writing reports on production processes. They also expand their knowledge of specific vocabulary, grammar rules, and word structure. The manufacturing zone provides a comprehensive language practice environment, equipping students with the necessary skills to succeed in mastering economics and English. In addition, the manufacturing zone offers opportunities for students to develop their critical thinking and problem-solving abilities.

According to Jones (2009), students who obtain missing information during listening activities utilizing visual annotations or verbal support have a better understanding of the material. This is due to the additional information and cues provided by visual annotations, which assist students in constructing meaning and retaining knowledge of the passage. Listening activities not only help students enhance their listening comprehension skills but also provide an opportunity for them to practice filling in gaps in their understanding. Engaging with real-life manufacturing scenarios can help students gain a better understanding of production processes and make informed recommendations for quality control improvements. This practical experience not only enhances language skills but also equips students

with the necessary skills to succeed in the industry. The study also recommends using QR codes in reading passages, writing activities, listening activities, and speaking activities to further enhance students' language proficiency (Celik 2023a, 2023b). This interactive approach fosters independent learning and encourages students to take ownership of their language development. It also allows for immediate feedback and assessment of their progress.

For speaking activities, the lecturer assigns roles or asks students to make presentations. This was done in response to feedback from alumni that economics faculty students should be able to deliver presentations. Students of economics faculty must be able to conduct a presentation because they need to be able to speak intelligently about economic issues. Speaking ability is considered to be as important as writing ability in economics, and students are more likely to have to speak about economic issues than write about them. Presentations can be used as assignments to improve the oral expression of economic ideas and to develop students' understanding of basic economic concepts. However, it is mentioned that oral presentations are often not assessed in courses due to the time and effort required for evaluation (Simkins 1999; Walstad 2001).

Meanwhile reading activities require students to identify the topic, primary concept, and supporting details and answer questions. Grammar assignments focus on creating sentences based on word structure. Finally, writing activities are focused on developing writing skills by writing paragraphs, making announcements, and writing business letters via email. Writing is considered to be the least important of the four language skills. Writing courses are typically introduced after acquiring core language skills. It states that writing is viewed as a skill that is continually developing (Rose, 1985). In the sequential process of writing instruction, students first develop their grammar, vocabulary, and sentence structure skills. This foundation is important because it allows students to construct grammatically correct sentences and use appropriate vocabulary in their writing. Once students have acquired these basic language skills, they can then move on to more complex writing tasks. For example, students can start by writing simple sentences and then progress to writing paragraphs and essays. By following this sequential process, students can gradually develop their writing skills in a structured and systematic way. This structured and systematic way of developing writing skills allows students to become more proficient writers.

4.2.4 Testing Zone

As previously said, the Testing Zone is an exercise that stimulates critical thinking, encourages active participation, and ensures that students not only understand but can also effectively apply economic theories in real-life situations. Case studies and initiatives focusing on the interaction of cognitive, emotional, and psychomotor domains are included in this zone. The context suggests that the case studies were developed to help learners understand the complexities of real-life situations and apply that understanding to their project work. The data collected from student work, discussion list transcripts, and interviews will be analyzed to gain insights into how learners examine and interpret the cases. The aim is to explore multiple perspectives and issues within the cases and develop their view of the development process. The context does not provide information on how case studies assess students' understanding. "Case studies improve critical thinking skills by instilling the need for students to think critically and professionally, applying theoretical concepts to practical issues (Allen and Toth-Cohen 2019; Bennet, Harper, and Hedberg 2002; Mahdi, Nassar, and Almuslamani 2020). They enhance listening and cooperative learning skills, promote thinking and brainstorming, and encourage students to monitor their thinking. Case studies also help students develop the ability to critically analyze and evaluate information, leading to an increase in critical thinking capabilities. Additionally, case-based learning methodologies are more effective in developing critical thinking skills compared to traditional lecture-based teaching methods."

The textbook design contains real-world case studies connected to each section of case studies. To assess student empathy for the case, students were asked a series of affective questions. These questions aimed to gauge their emotional response and understanding of the situation. The results of the assessment were used to inform and improve the teaching methods. Case studies can improve affective skills by providing opportunities for collaborative learning and interaction (Allen and Toth-Cohen 2019; Mahdi et al. 2020). The case studies described in the context involve various methods such as discussions, interviews, observations, and photo-elicitation interviews, which allow participants to reflect on their experiences and emotions during digital learning. These case studies highlight the importance of affective processes in learning and emphasize the role of emotions in maintaining a socio-emotionally secure atmosphere for collaboration. By examining and analyzing these case studies, researchers can gain insights into how different pedagogical designs and technological tools can support effective learning and interaction. This knowledge can then be applied to formal and informal educational contexts to enhance students' affective skills, such as emotional regulation, empathy, and collaboration. Case studies can foster effective communication. The context mentions that in the case study of social networking systems, the use of pedagogical scripts guided learners to engage in knowledge co-construction and affective processes, promoting productive collaborative learning. Additionally, the context states that the roles assigned in group discussions facilitated equal participation, feelings of belonging, and good working relationships between learners. These examples suggest that case studies can support effective communication among participants. The results of the assessment were used to inform and improve the teaching methods for future case studies.

The book presents two projects that students must complete to create a product that can be viewed on YouTube (Latta, Thompson, and Cayari 2011; Spires et al. 2012; Kaldina and Darmawan 2023; Salsabila and Sa'adah 2021). The themes of these projects are presentations and meetings, and they were explored theoretically in the logistics zone. The purpose of these projects is to assess students' abilities in oral communication and role-playing. The students will complete one project in eight meetings to enhance their presentation skills and ability to work collaboratively in a team setting. The first project focuses on developing effective communication skills through a series of presentations, while the second project emphasizes the importance of role-playing in different scenarios. These projects provide

valuable opportunities for students to develop and refine their communication skills in a supportive and collaborative environment.

The theory suggests that students benefit from project opportunities by engaging in collaborative work, interacting with their peers, and actively participating in group discussions. It encourages simultaneous interaction and face-to-face promotional interaction and promotes equal participation, positive interdependence, and individual accountability. These values and methods suggest that students can improve their oral communication abilities and gain practical experience in real-life situations (Alimisis 2019). Overall, these projects prepare students for future professional opportunities and allow them to apply what they have learned in the classroom.

5. Conclusion

This research provides a comprehensive understanding of the nuanced needs of economics students in various domains such as task, activity, language use, technological knowledge, pedagogical knowledge, topic, and English proficiency. Specific linguistic competencies are highly important for economics students, such as accurate information acquisition, speaking abilities, understanding and writing paragraphs, and critical vocabulary and grammar tasks. These findings highlight the diverse educational needs of economics students, emphasizing the need for tailored curriculum development and instructional strategies.

Assessing students' linguistic requirements reveals their priorities in listening, speaking, reading, writing, vocabulary, and grammar. Important activities include exposure to dialogues, conversations, and simulation or role plays, which promote comprehensive language learning. Specific language-driven activities, such as presentations, interviews, negotiations, and drafting business letters, are also crucial. This emphasizes the need for adapted instructional techniques and greater attention within the educational framework. The research identifies the technological, pedagogical, and topical needs of students. Lecturers should use audio, visual aids, and reading announcements to meet technological requirements. Communicative language teaching and jigsaw activities are highly relevant pedagogical approaches. The framework for teaching Economics in English incorporates technology, language skills, and economic theory. Assessing English proficiency levels helps educators or lecturers align course offerings with students' abilities.

The English in Economics framework consists of eight units that integrate technology, language skills, and economic theory. The units progress thoughtfully, introducing economic ideas through technology, enhancing comprehension and communication skills, fostering critical thinking and practical application, and culminating in case studies and projects that assess learning. This language learning framework for economics focuses on technology, pedagogy, and content integration. It provides an all-around experience for students, incorporating authentic materials, real-world scenarios, and collaborative activities, addressing linguistic needs while preparing students for economic challenges. The inclusion of case studies, projects, QR codes, and direct answers promotes interactive and independent learning. The framework is a valuable resource for educators or lecturers to tailor instructional strategies to meet the diverse linguistic, technological, and pedagogical needs of economics students in English language contexts.

Authors contributions

Widya Syafitri has designed the instrument, collected and analyzed data, and drafted manuscript. M. Zaim is the corresponding author and supervisor. He revised the instrument, analyzed data and approving final manuscript. Havid Ardi has also developed the instrument, analyzed data and revised manuscript. All authors read and approved the final manuscript.

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The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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Appendix A

Table 1. Students' needs on task

Skills/component	Statements	Mean score	Category
Listening	To differentiate intonation in a sentence	2.96	Needed
	To obtain factual information	3.01	Highly needed
	To recognise and understand opinions	2.91	Needed
	To recognise the attitude of the speaker	1.99	Less needed
Speaking	Give explanations	3.11	Highly needed
	Make comparison	3.06	Highly needed
	Provide personal information	3.03	Highly needed
	Express opinion	2.99	Needed
	Elicit information	3.16	Highly needed
	Make suggestion	1.99	Less needed
Reading	Identify topic	3.00	Needed
	Identify topic sentence	2.97	Needed
	Understanding a paragraph	3.06	Highly needed
	Make an inference	2.99	Needed
	Vocabulary building	2.98	Needed
	Understanding a longer passage	3.00	Needed
Writing	Writing paragraph	3.17	Highly needed
	Writing application letter	2.83	Needed
	Writing announcement	3.03	Highly needed
	Writing business letter	2.97	Needed
	Writing about things/people	2.96	Needed
	Writing essay	1.98	Less needed
	Writing thesis statement	3.09	Highly needed
Vocabulary and grammar	Gap filling	3.21	Highly needed
	Paraphrase	1.97	Needed
	Multiple choice	3.16	Highly needed
	Completion	3.18	Highly needed
	Recognise definition	3.16	Highly needed
	Recognise synonym	1.97	Less needed

Appendix B

Table 2. Students' need for language use

Statements	Mean scores	Category
Presentation	3.10	Highly needed
Interview	3.04	Highly needed
Conducting a meeting	3.10	Less needed
Negotiation	3.10	Highly needed
Writing business letter	3.13	Highly needed
Writing application letter	2.98	Needed

Appendix C

Table 3. Students' need on technology

Students' need	Mean scores	Category
Listening from audio	3.04	Highly needed
Learning from video	3.04	Highly needed
Using picture	3.00	Needed
Using graph	2.97	Needed
Using PPT	3.01	Highly needed
Reading announcement	3.00	Needed
Using blog	1.98	Less needed
Using gamification app	3.00	Needed

Appendix D

Table 4. Important topics on economics English

No	Statements	Mean scores	Categories
a	Economics	3.18	Highly needed
b	Microeconomics	3.18	Highly needed
c	Islamic economics	3.17	Highly needed
d	Finance	3.16	Highly needed
e	Accounting	3.16	Highly needed
f	Banking	3.05	Highly needed
g	Islamic banking	3.03	Highly needed
h	International trade	3.02	Highly needed

Appendix E

Table 5. Instrument validity test with Aiken's index

| Statement Items | Value | | | | Analysis | | | | | | | |
	Expert 1	Expert 2	Expert 3	Expert 4	S1	S2	S3	S4	ΣS	n(c - 1)	CVI	Criteria
Statement 1	4	4	4	4	3	3	3	3	12	12	1,00	Highly valid
Statement 2	4	4	3	3	3	3	2	2	10	12	0,83	Highly valid
Statement 3	4	4	4	3	3	3	3	2	11	12	0,92	Highly valid
Statement 4	4	3	4	4	3	2	3	3	11	12	0,92	Highly valid
Statement 5	4	3	3	3	3	2	2	2	9	12	0,75	Valid
Statement 6	4	3	4	3	3	2	3	2	10	12	0,83	Highly valid
Statement 7	4	4	4	3	3	3	3	2	11	12	0,92	Highly valid
Statement 8	4	3	4	4	3	2	3	3	11	12	0,92	Highly valid
Statement 9	4	3	4	4	3	2	3	3	11	12	0,92	Highly valid
Statement 10	4	3	4	3	3	2	3	2	10	12	0,83	Highly valid
Statement 11	4	3	4	4	3	2	3	3	11	12	0,92	Highly valid
Statement 12	4	4	4	3	3	3	3	2	11	12	0,92	Highly valid
											0,89	Highly valid