

DESIGNING TRANSLANGUAGING-ORIENTED ONLINE DISCUSSIONS TO FOSTER INNOVATION THINKING IN VOCATIONAL ESP EDUCATION

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Abstract

Vocational education requires students not only to possess English language skills but also to ways relevant to their disciplinary field of study, in this case, agribusiness. In this study, translanguaging serves as a pedagogical resource, enabling students to leverage their existing linguistic resources during complex learning. Using a qualitative case study approach, this research analyzed 61 discussion comments and peer interactions collected by a classroom teacher during asynchronous discussions on the topic "Future Innovation for Sustainable Food Security." Using thematic analysis, this study identifies four focal points indicating that authentic, future-oriented tasks encourage students to generate a variety of interactive solutions. Furthermore, peer interactions support the expansion and refinement of arguments through feedback and evaluations from peers. Students used multimedia resources to convey technical terms and explain concepts in their field of expertise, and to construct meaning by combining them with the language they deemed most appropriate for expressing those ideas. Translanguaging-oriented discussions facilitated a space for student participation and the refinement of ideas. The findings of this study highlight the importance of integrating authentic tasks, peer interactions, and flexible language-use practices into vocational ESP pedagogy.

Keywords: translanguaging; vocational ESP; asynchronous discussion; innovation-oriented thinking; agribusiness; multilingual resources



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1. Introduction

Vocational school graduates need more than just technical skills and English proficiency. They are expected to generate ideas, find solutions, and address issues that arise in their communities. Innovation-oriented thinking is a key competency for vocational college graduates. Vocational school graduates are expected to guide students in identifying real-world problems (Hermans et al., 2024; López et al., 2023; Maksum et al., 2024), generating solutions by connecting disciplinary knowledge with local needs (Hu & Wang, 2025; Ragadhita et al., 2026; Ramli et al., 2025), evaluating and refining ideas (Hassan & Anees, 2024; Mishra et al., 2025), and integrating innovative solutions (Ng & Arshed, 2026; Paryono & Masho, 2022). English for Specific Purposes (ESP) can provide an authentic context for this process, as it involves using English to engage with discipline-specific issues (Khawaji & Alhussain, 2026; Pramila et al., 2025). ESP allows students the space to identify problems, develop alternative

solutions, provide justifications, and discuss the potential application of an idea in a vocational context.

The need to think critically and analyze in order to discover innovations grows as students face open-ended, future-oriented problems. Issues such as food security, changes in agricultural technology, resource sustainability, and production efficiency do not always have a single definitive answer. Students must connect their existing knowledge to find solutions in new situations. By making these connections, students can formulate actions they can take. In vocational education, such activities can serve as a space for developing innovative thinking, the process of generating, developing, connecting, and refining ideas to address problems relevant to their field of expertise. Therefore, the design of ESP tasks needs to shift from isolated language exercises toward activities that enable students to use language to think about and interact with authentic vocational issues.

This study utilized asynchronous online discussions where students could reflect on their ideas before responding (Mansour, 2024; Steenkamp & Brink, 2024; varkey et al., 2024), articulate their ideas (Culbreth & Martin, 2025; Kidron & Kali, 2024), respond to discussion partners (Alsayer, 2023; Frey & Bloch, 2023), elaborate on existing ideas (Moon et al., 2024), propose alternative solutions (Huang & Liu, 2024; Lio et al., 2023), and participate outside of class hours (Callaghan et al., 2026; Cuduz, 2024). This study also employs translanguaging, in which vocational students are not required to use only English to communicate their ideas. Translanguaging provides a space for students to draw on their linguistic repertoire to express their ideas (Garcia & Wei, 2012; Li & Luo, 2017; Wei, 2028). They use it to explain technical concepts, clarify meanings, articulate complex ideas, connect disciplinary knowledge with local knowledge, and interact with peers in discussions. The use of flexible multilingual practices can provide space for students to engage in meaning-making in ESP learning.

However, using English in ESP discussions can be challenging when students must articulate ideas that are conceptually more complex than their English proficiency allows. Therefore, translanguaging is considered a pedagogical resource that enables students to draw on their entire linguistic repertoire to engage in thinking and innovation. Previous research has examined the use of asynchronous discussions via Google Classroom to observe how students engage in translanguaging in vocational contexts. Previous research has examined how translanguaging can help students express environmental meaning-making and technology in agriculture, as well as how they use different languages for different purposes (Mutiaraningrum et al., 2026a,b,c). This study differs from previous research by investigating how agribusiness students can utilize translanguaging to foster innovation for future improvements within their academic discipline, specifically agribusiness. This study focuses on innovative thinking and idea development in the context of vocational ESP.

2. Method

This study employs a case study approach, focusing on students' responses during their interactions in Google Classroom. The study relies solely on data from students' responses in Google Classroom. The case study method is considered appropriate for this research because it captures how and why the phenomena under discussion occur. Online discussions often reveal social interactions, group dynamics, or the natural formation of opinions, even within the framework of assigned class tasks. The context of this study is also specific and unique, focusing on the depth of the context in which online discussion forums have their own distinct culture and norms, especially when combined with local languages and Indonesian. Consequently, these online discussions provide authentic social interactions that differ from

questionnaires or interviews, which are often spontaneous, honest, and emotional. This approach can capture real-time responses to an issue. Although consisting solely of conversational text, data from online discussions contains rich layers of information, ranging from the main text and replies to threads to the use of emojis and punctuation. However, in this study, we did not focus on emojis or punctuation but concentrated solely on words referring to innovative thinking in the agribusiness context.

The student discussion was guided by the question: "As an agribusiness student, please tell me about your future innovation for sustainable food security." The discussion generated 61 comments from students. Not only did the discussion yield comments directed at students, but it was also evident that students responded to their peers and then responded again. This was not merely a one-way conversation. Students waited for responses from their peers, provided feedback, and revisited the discussion; this back-and-forth process demonstrated that, in this discussion forum, students were genuinely engaging in dialogue, not merely completing an assignment from the instructor. The rules for the discussion were simple: students were to respond in the language they felt comfortable with, but within the context of ESP, where they were required to use English while supplementing it with other languages they found comfortable for expressing their ideas. This study employs thematic analysis as outlined by Braun and Clarke (2006), presenting the analyzed data in a table that shows the findings, subthemes, and their codes. This is followed by original quotes from the Google Classroom thread that exemplify translanguaging, with their English translations in the adjacent column.

3. Results and Discussion

3.1 Results

3.1.1 Authentic and Future-Oriented Tasks Stimulate Innovation

Questions about future innovations for sustainable food security encouraged students to draw on their agribusiness expertise to develop solutions for the future. Their responses were not limited to a single solution; they explored several potential innovations to address food security issues. The students not only generated solutions but also proposed several possibilities, such as vertical farming, precision agriculture, smart greenhouses, AI, and blockchain. Students positioned innovation as a future possibility and generated a variety of technological alternatives for food security. Their innovative ideas were directly linked to local issues in Sambas, particularly seasonal uncertainty and water availability for agriculture. This demonstrates that students connected their coursework to local conditions by applying their academic knowledge of agribusiness. The students' responses showed an exploration of various alternatives, allowing for more than one possible solution. A thematic analysis of the students' responses is presented in Table 1.

Table 1. Sub-themes and Codes for Authentic and Future-Oriented Tasks

Finding / Theme	Sub-theme / Code	Original Quote from the Data	English Translation
Authentic and Future-Oriented Tasks Stimulate Innovation	Future-oriented imagination	"These are just a few ideas, but I'm excited to see how the future of agrobusiness will unfold!" — Student 7	"These are just a few ideas, but I'm excited to see how the future of agribusiness will unfold!"

Finding / Theme	Sub-theme / Code	Original Quote from the Data	English Translation
	Local-context-based innovation	“My future innovation is create a bendungan and machine turbin yang can flowing farm on full years to increase produktivity penghasilan tanaman pangan di sambas no tergantung pada season yang tidak tentu” — Student 12	“My future innovation is to build a dam and a turbine that can provide a steady water supply to farms year-round to increase the productivity and yield of food crops in Sambas, regardless of unpredictable seasons.”
	Multiple possible solutions	“One potential innovation is Vertical Farming... Another idea is Precision Agriculture... Alternative Protein Sources juga menjadi salah satu solusi... Smart Greenhouses juga bisa menjadi salah satu inovasi...” — Student 7	“One potential innovation is vertical farming... Another idea is precision agriculture... Alternative protein sources are also a solution... Smart greenhouses could also be an innovation...”

3.1.2 Peer Interaction Supports Idea Expansion and Refinement

The responses students provide in asynchronous discussions are not limited to their own ideas; they also respond to their peers' ideas. For example, one peer's response both acknowledged and expanded upon the implications of the initial idea regarding dams and turbines. Peer interaction is not merely about agreement; it also involves incorporating other technologies that can be combined with the initial innovation. There are extensions of ideas stemming from peers' responses. Students add new elements to the initial ideas expressed by their peers; for example, one student explained the concept of dams and turbines, and subsequently, another student added the idea of using drones and other agricultural technologies to strengthen the irrigation system. Peer questions guided students in explaining the mechanisms and feasibility of their ideas, thereby shifting the discussion from mere proposals to elaboration.

Furthermore, students did not merely agree with or add to their peers' ideas; some also asked how a classmate's proposed digital platform could help achieve fairer pricing. Such questions opened the door to further elaboration and more creative ideas. Peer responses questioned the affordability and implementation of innovations, indicating an evaluation of feasibility rather than mere acceptance of the idea. The results also showed that students evaluated their peers' ideas; for example, they asked what would happen if the technology were too expensive or complicated, and whether smallholder farmers could use it. The results of the thematic analysis on peer interaction are presented in Table 2.

Table 2. Sub-themes and Codes for Peer Interaction

Finding / Theme	Sub-theme / Code	Original Quote from the Data	English Translation
Peer Interaction Supports Idea Expansion and Refinement	Peer feedback	“Your innovation is very interesting. Building a dam and turbine system to provide continuous water for farms is a great idea.” — Student 19	“Your innovation is very interesting. Building dams and turbine systems to provide a sustainable water supply for farmland is a great idea.”

Finding / Theme	Sub-theme / Code	Original Quote from the Data	English Translation
	Idea extension	“In addition, farmers also need to take advantage of modern technology so they won’t be left behind. For example, agricultural drones and other advanced tools can help monitor crops, increase efficiency, and support your irrigation innovation even better.” — Student 19	“In addition, farmers also need to take advantage of modern technology so they don’t fall behind the times. For example, agricultural drones and other advanced tools can help monitor crops, improve efficiency, and further support your irrigation innovation.”
	Critical questioning	“@xxx How will this digital platform membantu petani mendapatkan harga yang lebih adil?” — Student 2	“@xxx, how will this digital platform help farmers get fairer prices?”
	Critical evaluation of feasibility	“Tapi as a student, aku mikir problem utamanya ada di implementasinya. Teknologinya udah high-tech, AI soil sensors, biofertilizer, plus solar-powered vertical farming, tapi kalau ujungnya too expensive atau ribet buat petani kecil, ya susah buat jalan.” — Student 9	“But as a student, I think the main issue lies in its implementation. The technology is already advanced—AI-based soil sensors, biofertilizers, plus solar-powered vertical farming—but if it ends up being too expensive or complicated for small-scale farmers, it’ll be hard to put into practice.”

3.1.3 Translanguaging Supports Meaning-Making and Idea Communication

English is used for technological terms and technical concepts, while Indonesian is used to develop conceptual explanations. Students use English to convey agribusiness ideas while providing concrete elaborations through examples of agricultural practices. Indonesian is used flexibly to elaborate on the implications and benefits of innovations in greater detail. For example, the terms “IoT” and “AI” are used in explanations of soil, weather, and crop monitoring. A mix of languages is also used when students explain how a technology can be applied under specific conditions. This flexible use of language helps students explain how the concept of precision agriculture translates into concrete and simple solutions. The results of the analysis are shown in Table 3.

Table 3. Sub-themes and Codes for Meaning-Making and Idea Communication

Finding / Theme	Sub-theme / Code	Original Quote from the Data	English Translation
Translanguaging Supports Meaning-Making and Idea Communication	Technical terminology in English	“ <i>With the use of IoT and AI, kita bisa memantau kondisi tanah, cuaca, dan tanaman secara real-time, sehingga kita bisa mengoptimalkan penggunaan input dan</i> ”	“With the use of IoT and AI, we can monitor soil, weather, and crop conditions in real time, allowing us to optimize the use of inputs and reduce waste.”

Finding / Theme	Sub-theme / Code	Original Quote from the Data	English Translation
		<i>mengurangi limbah.</i> ” — Student 7	
	Mixed-language explanation	<i>“I want to create an intercropping innovation in food crops. For example, we plant chili peppers, but we intercrop them with corn in order to gain greater profits, improve land efficiency, and obtain other benefits.”</i> — Student 19	“I want to create an intercropping innovation for food crops. For example, we plant chili peppers, but we intercrop them with corn to increase profits, improve land efficiency, and gain other benefits.”
	Elaborating complex ideas through translanguaging	<i>“I wanted farmers to know when to water, fertilize, or control pests without having to guess. I hoped this technology would stabilize production, lower costs, and protect the environment.”</i> — Student 3	“I wanted farmers to know when to water, fertilize, or control pests without having to guess. I hoped this technology would stabilize production, lower costs, and protect the environment.”
	Contextual meaning-making	<i>“That’s why I wanted to develop a truly simple precision agriculture system—just inexpensive sensors, a smartphone app, and automated analysis.”</i> — Student 3	“That’s why I wanted to develop a truly simple precision agriculture system—just inexpensive sensors, a smartphone app, and automated analysis.”

3.1.4 Translanguaging-Oriented Discussion Facilitates Participation and Innovation

Students use their available linguistic repertoire to convey their positions and ideas without having to stick exclusively to a single language. Translanguaging emerges in the presentation of innovative ideas tailored to the real needs of smallholder farmers. Students use the languages available to them to actively participate in discussions. They do not always stick strictly to English but also incorporate local languages and Indonesian to convey their ideas. Students not only generate ideas but also reflect on the limitations of implementation, cost, and usability of the innovations. The discussions led to refinements of the initial ideas: innovations must not only be technologically advanced but also affordable, simple, and practical. The results of the analysis are presented in Table 4.

Table 4. Sub-themes and Codes for Participation and Innovation Facilitated by Translanguaging-Oriented Discussions

Finding / Theme	Sub-theme / Code	Original Quote from the Data	English Translation
Translanguaging-Oriented Discussion Facilitates Participation and Innovation	Participation through flexible language use	<i>“... saya believe sustainable food security really butuh innovations that are not only great on paper but actually practical in the field.”</i> — Student 9	“...I believe that sustainable food security really requires innovations that aren’t just great on paper but are actually practical in the field.”

	Idea generation	<i>“My proposed innovation is a low-cost smart irrigation system for small farmers...” – Student 12</i>	“My proposed innovation is a low-cost smart irrigation system for small farmers...”
	Critical reflection	<i>“But as a student, aku mikir problem utamanya ada di implementasinya... kalau ujungnya too expensive atau ribet buat petani kecil, ya susah buat jalan.” — Student 9</i>	“But as a student, I think the main problem lies in its implementation... if it ends up being too expensive or complicated for small farmers, it’ll be hard to get off the ground.”
	Idea refinement	<i>“So menurutku, the real key is making it affordable, simple, and actually practical di lapangan.” — Student 9</i>	“So in my opinion, the real key is making it affordable, simple, and actually practical in the field.”

3.1 Discussion

This study demonstrates that the design of asynchronous online discussions can integrate authentic tasks, a future-oriented focus, peer interaction, and diverse resources. The strategies and approaches employed in this study provide a space for students to develop ideas oriented toward future innovations that can solve problems in local communities within the context of vocational ESP education. These findings are crucial because language activities are directed not only toward English proficiency but also toward using the language in discipline-specific ways to generate relevant solutions in students' fields of expertise.

The characteristics of the issue raised in class during asynchronous discussions revolve around "future innovation for sustainable food security." This is designed to encourage students to provide open-ended answers. The possible answers to this topic cannot be limited to a single solution; students must identify innovations based on their knowledge within their respective academic disciplines. This open-ended assignment allows language to move beyond merely providing answers to questions toward exploration and the proposal of potential solutions. In doing so, students must apply the academic knowledge they have learned in class, read up on the latest technologies, and research environmental and social issues in their local context. This study found that the ideas proposed by students during these discussions were not abstract, as they were tied to the local context. For instance, ideas regarding dams and turbines were explicitly linked to agricultural needs in Sambas Regency and farmers' dependence on unpredictable weather patterns. This demonstrates that students' authentic assignments can connect academic knowledge and areas of expertise to issues they consider relevant in their local environment (Kazazoglu, 2025; Lowell & Moore, 2020; Woodroffe et al., 2017).

Peer interaction was also a key finding in this study, as students were able to expand and evaluate their ideas through feedback from peers (Anderson et al., 2001; Xiong et al., 2025). Innovative ideas were developed not only through individual responses to the project but also through interactions with peers (Davies et al., 2024; Pi et al., 2025), which took various forms, ranging from providing support for conceptual ideas and posing questions to evaluating the feasibility of an innovation. Typically, topics such as dams and turbines were first raised by students. Then, other students added insights on the use of other agricultural technologies to

support the irrigation system. Subsequently, another student responded with a more critical interaction, questioning how small-scale farmers could obtain the technology at a lower cost. This was then responded to by another student who discussed the Smart Eco-Farming System, prompting a follow-up question from a classmate asking what would happen if that technology were expensive and complicated. Thus, peer-to-peer interactions not only serve as a form of social participation but also provide a space for elaboration, questioning, evaluation, and refinement (Chen et al., 2026; Maia et al., 2024).

Students use language flexibly during the asynchronous discussion. When developing and explaining innovative ideas, Indonesian and English are used together to explain data in context. Technical terms in English appear within the explanatory structures of Indonesian language usage. This pattern indicates that language use is not limited to a choice among English, Indonesian, or local languages in isolation; rather, students mobilize available linguistic resources to maintain distinct communicative functions within the context of vocational higher education. These findings suggest that linguistic resources are used to connect disciplinary knowledge in language studies with thought processes (Kobayashi & Rinnert, 2012; Nhongo, 2024). Multicultural resources not only resolve linguistic issues but also explain communication concepts and provide solutions to food-related problems.

Further findings elaborate on the development of innovation-oriented thinking, in which students demonstrate the relationship between flexible language use and the interactive processes occurring during discussions. The data show that students can utilize multi-linguistic resources when generating ideas, providing responses, asking questions, evaluating, and proposing improvements to their peers' ideas, thus fostering translanguaging-oriented discussions. These findings indicate that innovation-oriented thinking in discussions is reflected not only in the quantity or novelty of ideas but also in the process by which language enables students to question, evaluate, and refine concepts. Thus, the primary contribution of this pedagogical design in education lies not merely in the use of translanguaging or Google Classroom in isolation, but in how open-ended tasks, authentic contexts, peer interactions, and linguistic flexibility work together to create a space for discussion.

4. Conclusion

This study concludes that discussions of asynchronous, translanguaging-oriented approaches can provide a pedagogical space for agribusiness ESP students at universities to develop and communicate ideas focused on future innovations to find solutions relevant to society, viewed through the lens of agribusiness in accordance with their disciplinary fields. This study also shows that task design plays a crucial role in creating such a space. Authentic, open-ended, and future-oriented tasks encourage students to generate ideas and solutions that connect their concepts to local and contextual realities. The study found that peer interactions significantly influence students' ability to expand their ideas and evaluate them in light of peer feedback. Students can combine various languages to convey technical terms related to idea development and contextualize the solutions they propose. Overall, this study demonstrates that innovation-oriented thinking can emerge through the integration of authentic problems, collaborative interactions, and flexibility in language use. However, because this study employs a qualitative case study design, it cannot prove a causal relationship between translanguaging and innovation-oriented thinking. Rather, it should be understood as an illustration of how translanguaging-oriented discussions can serve as an interactive space for the development of innovative ideas among professional agribusiness ESP.

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