FOSTER JELT
Journal of English Language Teaching

Vol. 7, No. 2, April 2026
***e*-ISSN: 2723-4126**
***p*-ISSN: 2776-8880**

UNDERSTANDING VOCATIONAL STUDENTS' INTEREST IN DEEP LEARNING-BASED ENGLISH INSTRUCTION: A SEQUENTIAL EXPLANATORY MIXED-METHODS STUDY IN INDONESIA

Hilda Kalvin[1*], Roni La'biran[2], Rigel Sampelolo[3]
[1,2,3]Universitas Kristen Indonesia Toraja, Makale, Indonesia

hildakalvin06@guru.smk.belajar.id

ABSTRACT

This study investigates vocational students' interest in learning English through a deep learning approach and explores the motivational factors influencing their engagement in an Indonesian vocational context, where English proficiency is increasingly important for workforce readiness. A sequential explanatory mixed-methods design was employed. Quantitative data were collected from 20 students using a validated Likert-scale questionnaire measuring five dimensions of learning interest. Qualitative data were obtained through semi-structured interviews with eight purposively selected students and analyzed using thematic analysis. The quantitative findings showed consistently high levels of student interest across all dimensions, with motivational interest scoring the highest. The qualitative results identified eight key motivational factors: collaborative learning, critical thinking, interactive teaching style, contextual learning, real-world projects, supportive environment, technology integration, and vocational relevance. Among these, interactive teaching style emerged as the most influential factor, as most participants highlighted its importance in sustaining engagement. Importantly, the qualitative findings revealed a motivation–behavior gap that was not captured in the quantitative data alone. The study contributes to the literature by demonstrating that teaching style functions as a critical mediator in enhancing students' engagement with deep learning. These findings provide practical implications for improving vocational English instruction.

Keywords: Deep Learning Approach, Indonesia, Mixed Methods, Student's Interest, Vocational English Education

INTRODUCTION

The landscape of vocational education in Indonesia is undergoing a profound transformation as the nation seeks to prepare its workforce for an increasingly globalized and digitized economy. Under the Merdeka Belajar policy framework introduced by the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek, 2022), vocational schools have been repositioned as strategic engines of human capital development, with English proficiency identified as a critical competency for graduates entering technology-intensive professional fields. In this context, the challenge of creating

FOSTER JELT
Journal of English Language Teaching

Vol. 7, No. 2, April 2026
***e*-ISSN: 2723-4126**
***p*-ISSN: 2776-8880**

English learning environments that are simultaneously meaningful, motivating, and vocationally relevant has emerged as a central pedagogical priority for researchers and practitioners alike. This challenge is particularly acute in rural and semi-urban regions such as Tana Toraja, where access to quality English instruction and technology-enhanced learning resources remains uneven compared to major urban centers.

English functions as the lingua franca of technical documentation, software interfaces, digital communication, and international collaboration in virtually all contemporary technology sectors (Ibrahim, 2025; Novikova & Suima, 2025). For students in programs such as Computer and Network Engineering, English competence is not an abstract academic requirement but a concrete professional necessity: reading hardware and software documentation, communicating with international vendors and clients, accessing global open-source repositories, and participating in professional online communities all demand functional English proficiency. Yet vocational students in Indonesia frequently exhibit disengagement from English instruction, perceiving it as disconnected from their vocational identities and future career trajectories (I Wayan, 2026; Poedjiastutie et al., 2026). This disconnects between language instruction and vocational relevance constitutes a significant pedagogical problem demanding theoretically grounded and empirically validated solutions.

Deep learning, as a pedagogical approach distinct from surface learning, offers a promising framework for addressing this challenge. Rooted in the seminal work of Marton and Saljo (1976), deep learning is characterized by students' orientation toward understanding meaning, critically engaging with content, connecting new knowledge to prior understanding, and transferring learning to novel contexts. In contrast, surface learning which dominates many traditional English classrooms in Indonesian vocational settings emphasizes rote memorization, procedural reproduction, and compliance-driven task completion without genuine comprehension (Entwistle, 2018). The pedagogical implications of this distinction are profound: while surface approaches may produce short-term measurable outputs such as test scores, they consistently fail to generate the durable, transferable competencies that vocational graduates require for professional practice. In the domain of English language education specifically, deep learning approaches engage students with authentic materials and contexts, encourage active meaning-making, promote critical reflection on language use, and connect linguistic knowledge to real-world communicative purposes (Zebua, 2025). These features align naturally with the applied, practical orientation of vocational learners, suggesting that deep learning-based English instruction may be particularly effective in vocational contexts where the relevance of English to students' professional futures can be made explicit and immediate.

A critical examination of recent empirical research reveals both promise and persistent gaps. Wintolo Apoko et al. (2025) documented positive responses among Indonesian vocational students to deep learning principles emphasizing mindfulness, meaningfulness, and enjoyment, reporting increased perception of English as relevant to their lives. (Bal & Öztürk, 2025) demonstrated that integrating problem-based learning with deep learning approaches significantly enhanced learning interest and problem-solving abilities in vocational settings, positioning the combined approach as strategically responsive to twenty-first-century skill demands. Villabona & Cenoz (2022) and Heras-Fernández et al.

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Journal of English Language Teaching

Vol. 7, No. 2, April 2026
***e*-ISSN: 2723-4126**
***p*-ISSN: 2776-8880**

(2025) found that facilitator teaching style correlates most strongly with student motivation in Indonesian English classrooms, suggesting that how teachers enact deep learning principles may be as important as the principles themselves. Xiong (2025)extended this line of inquiry by demonstrating that teacher immediacy behaviors significantly predict students' willingness to communicate and academic engagement. García-Cazorla et al. (2025) reported that the vast majority of students in well-designed collaborative learning environments feel more engaged, with meaningful improvements in speaking and reading performance.

However, a careful synthesis of this emerging literature reveals several significant limitations that the present study directly addresses. First, existing studies have focused predominantly on cognitive outcomes such as conceptual understanding and problem-solving, with comparatively little attention to the full multidimensional structure of student interest. While researchers have measured whether students learn more effectively through deep learning, far less attention has been paid to how students feel about the approach, whether their motivation is sustained over time, and whether internal motivation translates into active behavioral participation. The affective, motivational, and sustainability dimensions of student interest remain underexplored, leaving an incomplete picture of deep learning's pedagogical impact. Second, the voices of students themselves are underrepresented in the literature.

Quantitative surveys can measure the level of student interest but cannot explain why students are interested or what specific features of instruction they find most engaging. Without qualitative exploration, a finding that teaching style matters provides insufficient guidance for teacher preparation programs; what is needed is specification of which teacher behaviors students experience as encouraging or discouraging. Third, the specific context of vocational English education in rural and semi-urban settings such as Tana Toraja has received minimal scholarly attention. Most existing studies have been conducted in urban vocational schools with relatively abundant resources, leaving questions about deep learning implementation in resource-constrained contexts largely unanswered. Fourth, the gap between motivational interest and behavioral engagement, a theoretically significant discrepancy with important instructional implications has not been systematically investigated in Indonesian vocational English contexts. Understanding why students may report high motivation but demonstrate lower participation requires methodological integration that most previous studies lack.

Student interest, as a central construct in educational psychology, provides the theoretical lens for addressing these gaps. Decades of research have demonstrated the robust association between interest and academic engagement, persistence, and achievement (Ahad et al., 2025). Interest is conceptualized as a multidimensional psychological state characterized by affective components (positive emotional responses to learning), cognitive components (focused attention and conceptual engagement), behavioral components (active participation and effort), motivational components (intrinsic drive and enthusiasm), and sustainability components (continued engagement beyond immediate tasks). Understanding which dimensions of interest are most powerfully activated by deep learning-based English instruction is essential for instructional design in vocational English

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Journal of English Language Teaching

Vol. 7, No. 2, April 2026
***e*-ISSN: 2723-4126**
***p*-ISSN: 2776-8880**

education(Guo & An, 2025; Harackiewicz et al., 2016). Self-Determination Theory provides a complementary motivational framework, identifying three basic psychological needs competence, autonomy, and relatedness whose satisfaction is essential for intrinsic motivation and sustained engagement. Deep learning approaches that provide intellectual challenge, student choice and agency, and collaborative and supportive social environments are theoretically predicted to generate higher intrinsic motivation than surface oriented instructional environments (Alamer et al., 2025; Lyu, 2026).

The present study is significant for three interrelated reasons. From a theoretical perspective, it extends the application of deep learning theory to the underexplored context of Indonesian vocational English education in rural South Sulawesi, testing whether theoretical predictions about student engagement hold in this distinct institutional setting. The multidimensional measurement of interest enables examination of which dimensions are most and least responsive to deep learning instruction, a distinction with implications for interest theory itself. From a methodological perspective, the study responds to calls for mixed-methods research in language education by integrating quantitative breadth with qualitative depth.

The sequential explanatory design explicitly connects statistical patterns to student explanations, generating findings that are both generalizable within the study context and richly explanatory. This methodological integration is particularly valuable for understanding the motivation-behavior gap, where quantitative scores alone cannot explain why students fail to translate internal motivation into active participation. From a practical perspective, the study provides evidence-based guidance for teachers, curriculum developers, and policymakers. For teachers, it identifies which specific pedagogical behaviors most effectively activate student motivation. For curriculum developers, it indicates how English materials can be designed to maximize vocational relevance for technology-oriented programs. For policymakers, it offers direction for allocating professional development resources toward deep learning facilitation skills rather than content knowledge alone.

Accordingly, this study addresses two research questions. The first question asks what level of vocational students' interest in learning English through the deep learning approach is at Class X TKJ SMKN 1 Tana Toraja. This question is necessary because without establishing the baseline level of student interest across multiple dimensions, claims about deep learning's effectiveness remain unsubstantiated. By disaggregating interest into five dimensions, this question also enables identification of which aspects of interest are most and least responsive to deep learning instruction. The second question asks what factors influence vocational students' interest in learning English through the deep learning approach. This question is necessary because quantitative scores alone cannot explain why students are interested or what specific features of instruction, they find most engaging. Understanding the factors that shape interest is essential for designing interventions that can be replicated across contexts. By integrating answers to both questions, this study provides a comprehensive, student-centered account of what makes deep learning based English instruction engaging in Indonesian vocational contexts.

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METHODS

Research Design

This study employed a sequential explanatory mixed-methods design, in which quantitative data collection and analysis preceded and informed qualitative inquiry (Cresswell, 2018). The sequential explanatory design was selected for three reasons. First, it allowed the study to establish the breadth and distribution of student interest levels across the full class before purposively selecting qualitative participants whose responses would explain and contextualize the statistical patterns. Second, the design aligns with the study's theoretical framework, in which interest dimensions (measured quantitatively) are understood as outcomes of motivational factors (explored qualitatively). Third, as an emerging area of inquiry in Indonesian vocational English education, the field benefits from the credibility and generalizability afforded by quantitative foundations combined with the explanatory richness of qualitative inquiry, a methodological integration advocated for educational research addressing complex pedagogical phenomena (Tisdell et al., 2025).

Research Setting and Participants

The study was conducted at SMKN 1 Tana Toraja, a public vocational high school located in the administrative capital of Tana Toraja Regency, South Sulawesi, Indonesia. The school serves students from the broader Tana Toraja and neighboring districts, many of whom represent first-generation secondary students from agricultural and small-business family backgrounds. The TKJ program enrolls students who have chosen a technology specialization, creating a student population with both practical technology orientation and significant vocational English needs.

The quantitative phase involved all 20 students in Class X TKJ who had experienced deep learning-based English instruction during the current academic year, constituting a complete enumeration of the available population rather than a sample, which eliminates sampling error within this phase. Complete enumeration was appropriate given the study's focus on a specific intact class rather than a wider population(Haq & Yasin, 2025). The qualitative phase involved eight students selected through purposive maximum variation sampling (Ahmad & Wilkins, 2024), with selection criteria designed to ensure representation of diverse interest levels (two from the Very High category, four from the High category, and two from the Moderate category based on quantitative scores), gender balance (four male, four female), and variation in English proficiency level as assessed by the class teacher. This selection strategy ensures that the qualitative findings reflect the full range of student experience rather than privileging the perspectives of the most engaged or articulate students.

Data Collection Instruments

Quantitative data were collected using a structured 15-item questionnaire measuring five dimensions of student interest: affective interest (3 items; e.g., 'I feel happy and enthusiastic when learning English through the deep learning approach'), motivational interest (3 items; e.g., 'I feel enthusiastic when English lessons involve problem-solving or

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projects'), behavioral engagement (3 items; e.g., 'I actively participate in all activities during English learning'), cognitive engagement (3 items; e.g., 'I focus my attention and thinking during deep learning-based English lessons'), and sustainability and evaluation (3 items; e.g., 'I feel that learning English through this approach has increased its importance in my life'). The instrument used a five-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree).

The instrument was developed on the basis of Hidi, four-phase interest model and validated through a two-stage process(Hidi & Renninger, 2026). First, content validity was established through expert review by three specialists in English language education and educational psychology, with items revised based on their feedback. Second, construct validity was assessed through item-total correlation analysis, with all items demonstrating acceptable item-total correlations ($r \geq .40$). Internal consistency reliability was assessed using Cronbach's alpha coefficient, with results presented in Table 3.

Qualitative data were collected through semi-structured individual interviews conducted in Indonesian to enable full and natural expression(Campbell et al., 2020). The interview protocol, developed through iterative refinement and piloted with two students not included in the main sample, comprised four thematic areas: (a) general perceptions of and experiences with deep learning-based English instruction; (b) factors perceived as enhancing interest and motivation; (c) factors perceived as impeding interest or participation; and (d) the role of teaching style, collaborative activities, technology, and vocational relevance in shaping engagement. Each interview lasted 45-60 minutes, was audio-recorded with informed consent, and was transcribed verbatim within 48 hours of recording.

Data Analysis

Quantitative data were analyzed using IBM SPSS Statistics version 26.0. Descriptive statistics, including mean scores, standard deviations, and frequency distributions, were computed for all items, dimensions, and the overall instrument. Mean scores were classified using a five-level interpretive scale adapted from educational research conventions: Very High (4.50-5.00), High (3.50-4.49), Moderate (2.50-3.49), Low (1.50-2.49), and Very Low (1.00-1.49). Internal consistency was assessed using Cronbach's alpha coefficient, with values of .70-.79 interpreted as acceptable, .80-.89 as good, and .90 and above as excellent (Daryanto, 2025).

Qualitative data analysis followed Miles, Huberman, and Saldana's interactive model comprising three concurrent analytical activities: data condensation (systematic reduction and transformation of the data corpus through coding and categorization), data display (organization of condensed data into matrices and thematic networks), and conclusion drawing and verification (interpretation of patterns and relationships with ongoing verification against the data). Initial coding employed a combination of deductive codes derived from the theoretical framework (interest dimensions, SDT needs) and inductive codes emerging from the data (Saldaña, 2021). Codes were refined through constant comparison across transcripts and organized into higher-order themes through thematic synthesis. Trustworthiness of qualitative findings was established through member-checking (participants reviewed summaries of their interview data), thick description

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Vol. 7, No. 2, April 2026
***e*-ISSN: 2723-4126**
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(detailed contextual reporting enabling transferability assessment), and inter-coder reliability (a second researcher independently coded two randomly selected transcripts, yielding 85% initial agreement with full consensus reached through discussion).

Integration of quantitative and qualitative findings followed a convergent interpretation approach at the point of joint display, with qualitative themes interpreted in systematic relation to quantitative dimensional scores. Where qualitative findings explained quantitative patterns (the explanatory function of the sequential design) and where they raised new questions not addressed quantitatively (the generative function of qualitative inquiry), both functions are explicitly identified in the Results and Discussion sections.

RESULTS

Instrument Reliability

Prior to reporting substantive findings, internal consistency reliability coefficients for the five-dimension questionnaire are presented in Table 3. All dimensions demonstrated good to excellent Cronbach's alpha values, confirming the instrument's reliability for this sample and context.

Table 1. Internal Consistency Reliability of the Interest Questionnaire (N = 20)

Dimension	No. of Items	Cronbach's α	Interpretation
Affective Interest	3	.821	Good
Motivational Interest	3	.847	Good
Behavioral Engagement	3	.803	Good
Cognitive Engagement	3	.836	Good
Sustainability & Evaluation	3	.819	Good
Overall Instrument	15	.911	Excellent

Note. Cronbach's α interpretation: ≥ .90 = Excellent; .80–.89 = Good; .70–.79 = Acceptable (George & Mallery, 2003).

Quantitative Findings: Level of Student Interest

The quantitative analysis revealed a high overall level of student interest (M = 3.87, SD = 0.412) in learning English through the deep learning approach. All five dimensions fell within the high category (3.50-4.49), indicating consistently positive student responses across affective, motivational, behavioral, cognitive, and sustainability dimensions. Descriptive statistics by dimension are presented in Table 1.

Table 2. Descriptive Statistics of Students' Interest by Dimension (N = 20)

Interest Dimension	Mean	SD	Category
Motivational Interest	3.98	0.642	High
Cognitive Engagement	3.92	0.662	High
Sustainability & Evaluation	3.88	0.658	High
Affective Interest	3.85	0.687	High
Behavioral Engagement	3.73	0.668	High
Overall Interest	3.87	0.412	High

Note. Scale interpretation: Very High = 4.50–5.00; High = 3.50–4.49; Moderate = 2.50–3.49; Low = 1.50–2.49; Very Low = 1.00–1.49.

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***e*-ISSN: 2723-4126**
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Motivational Interest registered the highest dimensional mean (M = 3.98, SD = 0.642), with item 5 ('I feel enthusiastic when English lessons involve problem-solving or projects') receiving the highest individual item score across the entire instrument (M = 4.05). This finding indicates that the project-oriented and problem-solving elements of the deep learning approach are particularly powerful activators of student motivation in this context, consistent with SDT's prediction that activities satisfying competence and autonomy needs generate heightened intrinsic motivation (Ryan & Deci, 2020).

Cognitive Engagement scored second highest (M = 3.92, SD = 0.662), with item 10 addressing focused attention during learning receiving M = 3.95. This finding suggests that the deep learning approach successfully engages students' cognitive resources and sustains concentration, a result consistent with Marton and Säljö's (1976) characterization of deep learning as fundamentally oriented toward active meaning-making rather than passive reception. The high sustainability and evaluation score (M = 3.88) further indicates that students perceive increased importance and long-term value in English learning through this approach, representing movement toward what Hidi and Renninger (2006) describe as emerging individual interest.

Behavioral Engagement scored lowest among all dimensions (M = 3.73, SD = 0.668), with item 7 ('I actively participate in all classroom activities') receiving the lowest individual item score (M = 3.65). The gap of 0.25 scale points between Motivational Interest and Behavioral Engagement statistically meaningful within a five-point scale represents a theoretically significant finding: students' internal motivational orientation toward the deep learning approach is not fully translated into observable participatory behavior. This motivation-behavior discrepancy is a central focus of the qualitative analysis reported below.

The frequency distribution of individual student mean scores revealed that 2 students (10.0%) fell into the Very High category, 16 students (80.0%) fell into the High category, and 2 students (10.0%) fell into the Moderate category. No students fell into the Low or Very Low categories, confirming that 90% of the class demonstrated high to very high overall interest in English learning through the deep learning approach.

Qualitative Findings: Factors Influencing Student Interest

Thematic analysis of interview data from eight students identified eight interconnected factors that shape student interest in English learning through the deep learning approach. These factors span instructional design, teacher characteristics, content relevance, social dynamics, and environmental conditions. Table 2 presents a summary of the themes and their key findings.

Table 3. Themes in Factors Influencing Student Interest in Deep Learning-Based English Instruction

Meaningful & Contextual Learning	Students valued understanding context and real-life usage over memorization. Deep learning helped connect English to cultural meaning and daily situations, making learning substantive rather than mechanical.

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Vol. 7, No. 2, April 2026
***e*-ISSN: 2723-4126**
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Interactive Teaching Style	The most dominant factor, cited by five of eight students as the primary influence. Energetic, communicative, and clear teachers generate enthusiasm, confidence, and comfort. Passive lecture-only methods reduced motivation significantly.
Real-World Problems & Projects	Project-based learning enabled students to practice English in authentic situations and perceive its direct usefulness for the workplace and daily life. TKJ vocational tasks amplified perceived relevance.
Collaborative Learning Activities	Group discussions and pair work increased active participation, courage to express opinions, and peer mutual support. Collaborative structures reduced fear of making mistakes.
Vocational Relevance (TKJ)	Explicit connections between English materials and TKJ major—reading technical manuals, communicating with international clients—activated career-oriented motivation and increased perceived value.
Technology Integration	Technology made lessons more engaging and accessible, supporting vocabulary and pronunciation learning. Independent access to additional videos and articles extended learning beyond classroom boundaries.
Critical Thinking Opportunities	Opportunities to analyze, evaluate, and express personal opinions increased active engagement and made learning feel intellectually substantial beyond surface language practice.
Supportive Learning Environment	Clear and constructive feedback, positive peer dynamics, comfortable classroom atmosphere, and fair progress-based evaluation created psychological safety for learning risk-taking.

Interactive Teaching Style as the Dominant Factor

Interactive teaching style emerged as the most dominant single factor across the qualitative corpus, explicitly identified by five of the eight interviewed students as the primary determinant of their interest and motivation. Students consistently described how teachers who communicated energetically, provided real-world examples, responded to student confusion with clarity and patience, and created a psychologically comfortable classroom atmosphere generated qualitatively different learning experiences than teachers relying on lecture-dominated, textbook-bound instruction. One student articulated this contrast: 'When the teacher explains with real examples and lets us ask questions freely, I feel like I want to know more. But when they just read from the book, I stop listening.' This testimony directly operationalizes the distinction between deep-learning-facilitative and surface-learning-perpetuating pedagogical styles.

The primacy of teaching style is quantitatively reflected in the high Motivational Interest score (M = 3.98), which captures students' enthusiasm for the instructional approach, and in the Affective Interest score (M = 3.85), which reflects the emotional quality of the learning experience. These quantitative patterns gain explanatory depth through qualitative data: it is not simply that the deep learning approach generates motivation in the

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Vol. 7, No. 2, April 2026
***e*-ISSN: 2723-4126**
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abstract, but that interactive, responsive, and connecting teachers are the primary vehicles through which deep learning principles generate motivational effects in this vocational context.

The Motivation-Behavior Gap: A Cross-Method Finding

The quantitative gap between Motivational Interest (M = 3.98) and Behavioral Engagement (M = 3.73) is illuminated by qualitative findings concerning the social contingency of participation. Students reported that their willingness to actively participate was significantly conditioned by peer dynamics, fear of negative evaluation from classmates, and the quality of collaborative task design. Several students described experiencing high internal enthusiasm for English learning tasks while simultaneously restraining their participation out of concern for appearing incompetent before peers. One student stated: 'In my heart I want to answer, I know the answer, but I'm afraid my friends will laugh if I make a mistake in pronunciation.' This testimony reveals behavioral engagement as a socially contingent achievement rather than a direct expression of internal motivation, extending sociocultural framework into the domain of interest research(Krath et al., 2021; J. Xu & Zhang, 2025).

DISCUSSION

The findings of this study contribute to a growing body of evidence supporting the effectiveness of deep learning approaches in vocational English education while simultaneously revealing important nuances that challenge simplistic assumptions about technology and motivation in language learning. The discussion proceeds by addressing each major finding in relation to existing theoretical frameworks and empirical evidence, including both supporting studies and contrasting perspectives where relevant.

High Overall Interest: Supporting and Contrasting Evidence

The finding of high overall student interest (M = 3.87) in deep learning-based English instruction is consistent documentation of positive responses among Indonesian vocational students to deep learning principles (Zhou et al., 2023). Similarly, Dewi et al. (2025) reported enhanced learning interest when problem-based learning was integrated with deep learning approaches in comparable vocational settings. These convergent findings suggest that the deep learning approach has genuine motivational affordances in Indonesian vocational English contexts that transcend individual teacher or school characteristics.

However, it is important to contextualize these findings within the limitations of the research design and to consider contrasting evidence. The relatively small sample (N = 20) drawn from a single class at one school precludes generalization to the broader population of Indonesian vocational students. Studies from other contexts have reported more mixed findings, Bachtiar et al. (2025) found that deep learning approaches generated anxiety in some English language learners who were habituated to surface learning expectations, and Putra et al. (2025) noted that technology-enriched deep learning environments could increase cognitive load for learners with limited digital literacy. These contrasting findings underscore the importance of context-sensitivity in interpreting the present results and

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***e*-ISSN: 2723-4126**
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highlight the need for studies examining a broader range of vocational schools, including those in more disadvantaged infrastructural contexts (Husni, 2026).

Teaching Style as Critical Mediator

The emergence of interactive teaching style as the dominant motivational factor carries significant theoretical implications. Feng's finding that teacher immediacy behaviors predict students' willingness to communicate and academic engagement provides direct empirical support for the present study's qualitative evidence, establishing that the mechanism through which deep learning generates motivational effects is substantially mediated by the quality of teacher-student communicative interaction (Feng et al., 2023). These finding challenges curriculum-centric accounts of deep learning that locate its effectiveness primarily in instructional design features (project-based tasks, authentic materials, collaborative structures) rather than in the human pedagogical relationship through which these features are enacted (Nelson et al., 2026).

From the Xu's perspective, interactive teaching style likely activates all three basic psychological needs simultaneously: it creates intellectual challenge that satisfies competence needs, provides student voice and agency that satisfies autonomy needs, and establishes warmth and connectedness that satisfies relatedness needs (F. Xu et al., 2025). The comprehensive satisfaction of all three needs generates the conditions for maximal intrinsic motivation, explaining why teaching style exerts such dominant influence relative to other instructional factors. Bachtiar et al. (2025) similarly found that teachers' professional philosophies and interpersonal orientations significantly shaped student motivation in Indonesian English classrooms, reinforcing the primacy of the teacher variable.

The Motivation-Behavior Gap: Implications and Extensions

The theoretically significant motivation-behavior gap identified across both quantitative and qualitative data extends existing research in important ways. Zeng and Chen in their research Found that peer support mediates collaborative learning's effect on engagement provides a structural explanation for the gap: when peer support is strong, motivation translates readily into behavior; when peer dynamics involve threat of negative evaluation, behavioral inhibition emerges despite high internal motivation. The present study's qualitative findings specify the psychological mechanism fear of social judgment regarding language errors, that connects this structural insight to the lived experience of vocational English learners (Zeng & Chen, 2026).

Students operating at the edge of their competence require not only appropriately challenging tasks but also scaffolding and social safety to attempt responses that carry risk of error. In deep learning environments where authentic production is required, the social climate of the classroom becomes a critical determinant of whether students' behavioral engagement reaches the level that their motivational engagement suggests is possible. This finding has direct implications for collaborative learning design in vocational English settings (Cui & Sachan, 2025).

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Vol. 7, No. 2, April 2026
***e*-ISSN: 2723-4126**
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Vocational Relevance and Sustainable Motivation

The high Sustainability and Evaluation score (M = 3.88) and the prominent qualitative theme of vocational relevance together suggest that the deep learning approach, when effectively implemented with explicit TKJ connections, activates what Hidi and Renninger (2006) describe as emerging individual interest a relatively durable disposition that extends beyond immediate situational triggers. Billett's (2020) workplace-mirroring argument provides a complementary framework: when classroom English instruction genuinely mirrors the communicative demands students will face in TKJ professional contexts (reading manuals, communicating with international partners, accessing English-language technical resources), the learning environment generates the motivational conditions characteristic of authentic workplace learning.

Syaheera et al. (2024) finding that TVET students' English motivation is primarily driven by professional advancement goals is directly supported by the present study's qualitative data, in which students explicitly connected their enthusiasm for English to career aspirations. However, Rahman et al. (2025) cautions that perceived vocational relevance of English may be culturally and contextually variable, and its motivational potency may diminish in contexts where English is less clearly linked to immediate employment prospects. Future research should examine whether the vocational relevance finding replicates in vocational programs with less obvious English-language professional demands than TKJ.

CONCLUSION

A significant motivation-behavior gap was revealed among vocational students learning English through the deep learning approach at SMKN 1 Tana Toraja, Indonesia. Qualitative data explained this gap as a product of social contingency and fear of peer evaluation rather than an absence of genuine motivation, providing a more nuanced understanding of how and why student engagement fluctuates in deep learning contexts.

The principal contribution is a cross-method demonstration that interactive teaching style serves as the critical mediator through which deep learning generates motivational effects in Indonesian vocational English education. Content delivered through passive, lecture-dominated instruction consistently fails to produce meaningful engagement, whereas the same content achieves strong motivational outcomes when delivered through interactive, facilitative, and vocationally connected pedagogy. This finding carries direct and practical implications for teacher preparation programs, which must attend as systematically to pedagogical enactment and interpersonal communication as to curriculum frameworks and content knowledge. Without such balanced attention, even well-designed deep learning curricula risk failing to achieve their intended motivational impact.

Several limitations warrant acknowledgment. These include the small sample size (N=20), single-site design which limits generalizability to other vocational contexts, reliance on self-report instruments that are subject to social desirability bias, and a cross-sectional design that cannot establish causal relationships between instructional features and student

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***e*-ISSN: 2723-4126**
***p*-ISSN: 2776-8880**

interest levels. Despite these constraints, the findings offer valuable and actionable insights for vocational English pedagogy in Indonesian classrooms and similar educational settings.

Future research should address these limitations through larger multi-site studies across different vocational majors and regions. Longitudinal designs are needed to track whether sustained interest predicts actual English proficiency gains over extended periods. Experimental or quasi-experimental studies comparing deep learning approaches with surface learning methods in matched vocational classes would also help establish causal evidence for the instructional strategies identified in this research.

ACKNOWLEDGMENT

The authors express sincere gratitude to Universitas Kristen Indonesia Toraja for the institutional support, academic guidance, and research environment that made this study possible. Heartfelt appreciation is also extended to the principal, teachers, and students of SMKN 1 Tana Toraja whose generous participation and cooperation were essential to the completion of this research.

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