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Examining the Efficacy of Blended Learning Inputs in Enhancing Saudi Students' English Language Skills

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***Abstract*—The application of blended learning is increasingly becoming an essential aspect of the pedagogical approaches for English language instruction at all stages of learning, from elementary school to university. As only a few research studies have explored blended learning's efficacy in enhancing English skills, this current study seeks to investigate the efficacy of various blended learning inputs in enhancing the English language proficiency of business students. The study adopted an experimental design with five intact classes as experimental and control groups. 197 participants from intact classes were selected through purposive sampling from the College of Business Administration, Prince Sattam Bin Abdulaziz University, Saudi Arabia. Participants from five intact classes were exposed to different blended instructional inputs: the rotation instructional input, flex instructional input, self-blend instructional input, and enriched-virtual blended instructional input, with a fifth class using the communicative language teaching approach as a control. Data were collected through standardized TOEFL pre-and post-tests. Results of the study demonstrated significant improvements in English proficiency across all groups, with the rotation model proving most effective. These findings offer valuable insights for curriculum designers, training program developers, and other stakeholders in various disciplines.**

***Index Terms*—blended learning's efficacy, curriculum designers, English proficiency, significant improvements, various blended learning inputs**

I. Introduction

The global status of English as a lingua franca in business, science, and technology underscores its critical importance in higher education, particularly in professional disciplines where communication and the dissemination of knowledge are predominantly conducted in English (Dewey, 2007; Lee & Carter, 2020). In Saudi Arabia, business students often struggle to achieve proficiency despite the widespread use of English in professional and academic settings, which hampers their academic performance and career prospects (Alam et al., 2024). In response to this educational need, the current study conducts an in-depth exploration of the efficiency of various blended learning approaches in enhancing the English language proficiency of engineering students. Blended learning, integrating traditional classroom methods with digital and online resources, offers adaptive and interactive methods for language learning.

Blended learning transforms educational practices by integrating conventional classroom interactions with online educational choices. This method is especially advantageous in higher education because it combines actual classroom attendance with digital interactions (Garrison & Kanuka, 2004). Graham (2006) talked about how this paradigm integrated internet-based learning with classroom instruction to offer a more dynamic education. Blended learning operates because it blends digital and physical educational contexts to enhance one another (Hrastinski, 2019). This method enhances learning results and makes education more adaptable and easily accessible, facilitating students' self-paced learning from anywhere (Horn & Staker, 2014). Blended learning streamlines learning and facilitates meaningful interactions (Boelens et al., 2015). It optimizes teaching methods, lowers costs, and satisfies an assortment of educational requirements (Joosten et al., 2014). This model lets students choose when, where, and what to learn

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depending on their schedule and life obligations (Osguthorpe & Graham, 2003). Blended learning's synchronous and asynchronous modes enable students with other obligations to study without continuous in-person attendance (Ausburn, 2004; Rovai, 2003). This approach to instruction stimulates engaged, self-directed learning and accommodates numerous styles of learning.

A. Research Problem

The study assesses blended learning inputs to determine the best methods to enhance language skills. Business professionals are required to be technically competent in interacting in multi-disciplinary and multicultural settings where English is the dominant language. This study addresses curriculum designers, educational policymakers, and language trainers who must establish programs that better prepare business professionals for the global workplace. This study addresses an important need by analyzing the impact of innovative methods of instruction on language competency and contributes to the conversations on optimizing language education, resulting in more competent and confident professional graduates.

B. Research Purpose Statement

This study assesses and contrasts four blended learning inputs—rotation, self-blend, flex, and enriched-virtual—to determine how each one impacts students' English language skills.

II. Literature Review

A. Types of Blended Learning Inputs

Blended learning in higher education is defined by its versatility and adaptability, meeting diverse educational needs through several well-established inputs, each according to the framework laid out by Staker and Horn (2012). First, The Rotation Model engages students by alternating between different learning environments, combining online elements with traditional classroom activities such as lectures and one-on-one tutoring, thus offering a rich blend of digital and interpersonal learning experiences (Staker & Horn, 2012; Graham, 2006). Second, The Flex Model emphasizes predominantly online delivery of content, complemented by the availability of in-person support when necessary, allowing for a highly personalized learning trajectory that accommodates individual student needs and pacing (Bergmann & Sams, 2012; Staker & Horn, 2012). Third, The Self-Blend Model offers students the autonomy to supplement their conventional coursework with online modules of their choosing, thereby tailoring their educational journey to better fit personal aspirations and academic requirements (Hrastinski, 2019; Horn & Staker, 2014). Lastly, The Enriched Model creates a hybrid structure of remote and in-person sessions, integrating online learning with conventional social interactions, enhancing both flexibility and collaborative learning opportunities (Osguthorpe & Graham, 2003; Graham, 2006). These models collectively illustrate how blended learning can seamlessly integrate online and conventional instructional methods, enhancing educational flexibility, personalization, and engagement in academic settings. Staker and Horn's (2012) frameworks provided unique insights into the fusion of digital and traditional teaching methods, reflecting evolving educational practices in higher education. Together, these models showcase the capacity of blended learning to create adaptive, personalized, and effective educational environments.

B. English Language Proficiency for Business Students

Excellent English skills are essential for students aiming for global career opportunities. Poor language skills hinder effective communication, leading to challenges in understanding technical specifications and collaborating on international projects (Swales, 2014; Bhatia, 2014). Consequently, students must acquire not only a basic understanding of English but also proficiency in the specific terminologies and communication styles pertinent to the engineering field (Dudley-Evans & John, 1998; Hyland, 2009). Professional communication skills and technical language skills for various contexts are essential components of any successful English language learning program (Pinker, 2015). This educational approach may also need to challenge existing pedagogical norms to better suit the technical and dynamic nature of different professions (Winsor, 1990). Moreover, proficiency in English for students extends beyond grammatical accuracy; it involves understanding the cultural and pragmatic aspects of language used in professional settings (Bargiela-Chiappini & Nickerson, 2014; Kachru, 2005). For instance, the ability to negotiate, explain, and persuade in English is crucial for engineers working in multinational teams or dealing with international clients (Gunnarsson, 2014; Selinker & Rutherford, 2013). Therefore, any curricula should prioritize developing students' pragmatic competence, enabling them to adapt language use to various professional scenarios (Jenkins, 2000; Alam et al., 2023). Despite the existence of numerous programs aimed at enhancing English skills among students, the effectiveness of these programs is often not empirically validated, and their outcomes are rarely studied in depth (Belcher, 2004; Alam & Usama, 2023). It indicates a pressing need for rigorous English language education tailored to develop students' language skills. The main consideration is selecting an educational model that integrates smoothly with education, effectively equipping the next generation of professionals with the English language skills necessary for successful international collaboration.

C. Earlier Studies

Multiple studies (Tosun, 2015; Banditvilai, 2016; Caruso et al., 2017; Ghazizadeh & Fatemipour, 2017; Almansour & Al-Ahdal, 2020; Noursi & Hussein, 2020; Menggo & Darong, 2022; Guo et al., 2023; Usama et al., 2024) have investigated the impact of combined instruction on the acquisition of English language skills across diverse educational settings. Employing various experimental designs, these studies consistently found that combined learning—online and in-person instruction— —significantly enhances proficiency in reading, speaking, listening, and general English skills. The research underscores blended learning's adaptability and effectiveness in boosting student engagement, autonomy, and language learning, demonstrating its advantages over traditional instructional methods.

Noursi and Hussein (2020) assessed the impact of blended instruction on the language competence of twelfth-grade students in the United Arab Emirates. Utilizing a true experimental design, the study involved a sample of 63 male students, partitioned into experimental and control cohorts. The experimental group experienced instruction through blended instruction modalities, whereas the control group was subjected to conventional teaching methodologies. The results demonstrated statistical improvements in the English language proficiency of the experimental group, as evidenced by post-test IELTS scores, indicating that blended learning substantially enhances language competencies in the EFL context. This research emphasizes the advantages of synergizing technology with traditional face-to-face pedagogical methods to promote the engagement of students and success in English language acquisition. In addition, Banditvilai (2016) studied the efficacy of a blended learning framework in augmenting students' language skills in Thailand. Employing a quasi-experimental design, the research encompassed 60 English majors in their second year at Kasetsart University. Through the use of both a control and an experimental group, Banditvilai evaluated the outcomes via pre-and post-test assessments alongside student questionnaires. The findings showed that the group undergoing experimentation, which received additional e-learning in conjunction with traditional classroom instruction, exhibited significantly greater improvements in language proficiency relative to the control group, which was instructed solely through customary methods. This investigation advocates for the incorporation of blended instruction to promote language proficiency and autonomy for learners within educational environments. Furthermore, Ghazizadeh and Fatemipour (2017) examined the ramifications of blended instruction on the reading skills of Iranian learners through a quasi-experimental framework. 60 intermediate-level students were grouped into two categories for the study: one group underwent blended reading instruction, while the other group received conventional education. Both groups were evaluated making utilization of the PEST's reading section before and following the instructional period. Statistical analysis conducted via SPSS established that the group experimenting achieved significant improvements in reading proficiency compared to the control group, suggesting that blended instruction exerts a significant positive impact on reading skills. The study advocates for the integration of blended learning strategies to enhance reading proficiency within English language education. Similarly, Almansour and Al-Ahdal (2020) examined whether blended learning enhanced the speaking skills of Saudi Arabian ESP undergraduates. This study, triggered by the shift to online learning materials due to COVID-19, involved 30 participants who engaged in a blended method of instruction. The results indicated notable enhancements in the participants' ESP speaking skills after the intervention. This investigation underscores the potential of blended learning not only to bolster specific language proficiencies but also to adapt to the demands of remote education, offering instructors valuable perspectives, policymakers, and academic personnel in the adaptation of curricula to blended learning paradigms. Tosun (2015) also conducted a study into the efficacy of blended learning for vocabulary development among EFL students at the Middle East Technical University in Turkey. The research encompassed 40 intermediate-level learners who were allocated into experimental and control cohorts. The experimental cohort interacted with the target vocabulary through blended learning methodologies, whereas the control cohort adhered to conventional instructional approaches. Subsequent assessments and semi-structured interviews evaluated the results and student perceptions regarding blended learning. The findings revealed no meaningful differences in vocabulary knowledge advancement between the two groups. This finding calls into question the presumption that blended learning is superior to traditional techniques for vocabulary acquisition, implying that the effectiveness may fluctuate based on various elements, including student engagement and the particular blended learning strategies implemented.

Menggo and Darong (2022) examined the efficacy of the blended learning approach within ESL/EFL educational contexts, particularly emphasizing the quantitative advancements in learners' English proficiency, autonomy in learning, motivation, and information and communication technology (ICT) literacy. The research sample comprised 198 students pursuing a degree in elementary education at Universitas Katolik Indonesia Santu Paulus Ruteng. A random selection procedure chose 74 participants for the research. The study utilized pre-and post-tests to assess blended learning, which included six in-person and six Zoom sessions.

The findings indicated significant enhancements in English proficiency, with the mean post-test score attaining 82.57, learning autonomy at 88.57%, motivation at 80%, and ICT literacy at 71.43%, thereby underscoring the diverse advantages of blended instruction environments in the advancement of language education. Furthermore, Guo et al. (2023) conducted a quasi-experimental study on how blended learning-based methods of scaffolding impacted EFL students' self-efficacy and willingness to communicate (WTC). The study endeavor involved 232 persons, some as controls and others as experimental responders, comprising both intermediate and advanced learners. Their research illustrated that both language proficiency and particular educational interventions significantly affected the efficacy measurements. However, language proficiency did not exhibit a substantial effect on WTC scores, whereas the

instructional type did. The experimental group demonstrated markedly superior results compared to the control group, implying that blended learning scaffolding effectively bolsters both self-efficacy and WTC among language learners. Moreover, Caruso et al. (2017) evaluated the success of blended learning in establishing and evaluating second-language listening skills. Online listening assessments in initial Italian courses at the University of Western Australia were the subject of this study. To broaden students' educational experiences and encourage them, engaging and responsive strategies to practice and evaluate listening comprehension were created. The application of these quizzes facilitated a more effective utilization of in-person instructional time. An extensive online student survey revealed that the quizzes enhanced pupils' listening skills. Students also opted for hybrid delivery over in-class assessments, which met their educational needs. Usama et al. (2024) contrasted web-based instruction (WBI) to mixed-mode instruction (MMI) to enhance medical students' English language skills. The study engaged 90 students who were randomly allocated into three groups: one employing communicative language teaching as a control, one utilizing WBI, and another implementing MMI. The results indicated that learners engaged in the blended instruction approach (MMI) exhibited markedly superior enhancements in comprehensive English language skills compared to both the web-based (WBI) and control groups. These findings imply that a mixed-mode instructional strategy, integrating both online and conventional instruction, can more effectively elevate English proficiency within medical educational environments.

Despite numerous studies exploring the efficiency of blended modes of learning such as self-blend, rotation, flex, and enriched-virtual models to enhance various language aspects, research is insufficient specifically comparing these blended learning inputs concerning language proficiency among students. This oversight is significant given the unique demands and professional expectations placed on students, who require specialized language skills to succeed in their global and technically complex fields. Further studies are needed to evaluate and compare these specific blended learning models to determine the most effective strategies for improving English proficiency in this distinct academic and professional cohort.

III. Method

A. Research Question

How are experimental blended learning inputs compared with the control group in terms of English language proficiency improvements from pretest to posttest among business students?

B. Participants and Sampling

The study involved 197 participants from five intact classes who were purposively selected based on their academic and linguistic backgrounds. Next, these participants were distributed at random to one of four experimental groups or a control group. All were first-semester undergraduate students enrolled in various business disciplines. As native Arabic speakers, they have been learning English as a Foreign Language (ESL) last ten years. Informed consent was obtained from each participant before the study. None of the students had any prior experience residing in English-speaking countries. Their admission to the technical courses was secured through the successful completion of an entrance test, demonstrating a baseline competence in their field of study.

C. The Procedure of the Study

The research was performed using a methodological framework adapted from Ahmed et al.’s (2024) research, incorporating specific modifications to align with the study's goals. Firstly, a pretest assessed the English competence of all participants. The pretest served two primary purposes: first, it aimed to ensure that all five groups commenced the study with comparable levels of English skills, thereby establishing a uniform baseline for subsequent comparisons. Secondly, it sought to establish fundamental benchmarks of English competence at the start of the study. The tests utilized the standardized Longman's TOEFL English proficiency exam, with multiple modules to assess English skills. These modules contain 30 hearing, 30 reading, and 40 integrated grammar and writing items.

After the initial assessment of their general English skills through the pretest, the five groups commenced a structured instructional program employing diverse teaching techniques. All educational sessions took place in a designated language lab, providing a common environment for students from all groups to converge and learn. The training unfolded over eight weeks, consisting of three sessions per week, each lasting one hour and forty minutes. This comprehensive and rigorous training schedule was meticulously organized and facilitated by the five instructors already assigned to these students, ensuring continuity and consistency in the teaching process.

The treatment administered to Class I, an experimental group, through the rotation blended input, was structured in a series of steps designed to enhance their English language skills. Initially, students participated in online training sessions that provided interactive tasks for learning languages, such as multimedia material and activities, which were essential for enhancing language skills. The next step involved in-person classes where the instructor delivered targeted lessons on grammar and vocabulary, providing detailed explanations and immediate feedback to clarify complex language rules. Finally, group projects were integrated as a key component of the treatment. In these sessions, students worked collaboratively on assignments that required the application of their listening, reading, and writing skills in real-life situations. This method not only reinforced personalized learning but also encouraged peer learning, where students could practice language skills interactively and dynamically. Each step in the rotation model was carefully aligned to

build upon the previous one, ensuring a cohesive and progressive learning experience that targeted all key aspects of English language proficiency.

The treatment for Class II, another experimental group using the Flex blended input, was methodically organized in a sequence of integrated steps to improve participants' listening, reading, grammar, and writing skills. Initially, students accessed a digital platform equipped with many English language learning tools. This platform included engaging lessons with multimedia resources designed to engage students in self-directed learning, encouraging them to individually explore different language aspects according to their own schedules and learning speeds. As a crucial complement to the digital resources, scheduled in-person sessions were conducted where students could interact directly with teachers. These sessions were essential for addressing specific questions, providing personalized guidance, and reinforcing the materials covered online. This combination of self-directed online learning with supportive, teacher-led interactions was crafted to ensure comprehensive development across all key language skills, from grammar mastery to enhanced writing capabilities.

In the treatment applied to the third experimental group, Class III, using the Self-Blend input, the process started with students independently selecting online courses and resources. These were specifically chosen to complement their existing English curriculum and were tailored to match their individual learning goals and interests. This approach allowed for a personalized educational pathway, integrating self-paced digital learning into their traditional studies. To support and enhance this independent learning, regular check-in sessions were conducted with experienced language instructors. During these sessions, instructors assessed the students' progress, provided individualized feedback, and addressed any challenges, thereby bridging the gap between autonomous online study and structured classroom learning. This method strategically leveraged a combination of digital resources and direct instructor guidance to improve student's English proficiency across key areas such as listening, reading, grammar, and writing within the self-blend structure.

The enriched-virtual blended input, utilized by the fourth experimental group (Class IV), employed a blended approach that combined on-campus and online learning to improve English language skills. This model facilitated a holistic learning experience by integrating interactive in-person classes and self-paced online modules. Students split their time between attending on-campus sessions, where they engaged in direct interaction and group activities, and accessing digital resources that allowed for individualized learning at their own pace. Additionally, the model included online forums for discussion and platforms for interpersonal engagement to foster collaboration among students. This meticulously designed intervention sought to utilize the positive aspects of both in-person and online instructional environments, thereby effectively enhancing the students' English language competence within the framework of the enriched virtual blended input.

In the classroom setting, Class V, the control group, employed the communicative language teaching (CLT) approach to learning English. This strategy stresses interaction as the main technique and objective of language education. This method was implemented by engaging students in activities designed to facilitate meaningful communication. For instance, students practiced constructing and utilizing various question formats to obtain personal information about other students, which facilitated the practical and collaborative growth of their conversational skills. Such activities are rooted in the principle that learning occurs through active communication, encouraging students to engage with language in real situations. This approach not only promotes fluency but also aids in the comprehension and retention of language structures, making it a favored strategy in ESL classrooms across various educational levels.

Following the training program, students took a posttest to assess their overall English skills, using a different set of standardized Longman English language proficiency tests than those used in the pretest. This approach ensured that the assessments were fresh and not merely a recall of previous questions, maintaining the integrity of the testing process. Both the pretest and post-test were calibrated to the same level of difficulty according to recognized testing norms and were conducted in the classroom to ensure a uniform testing setting for all participants.

Throughout the training period, formative assessments were conducted to monitor participants' development and pinpoint any learning challenges they encountered. These assessments served as a tool to provide ongoing evaluation of student progress, offering valuable insights for instructors to enhance instructional methods and support student learning effectively. By allowing students to recognize their areas of strength and improvement, formative assessments helped them to set personal objectives and facilitated timely interventions by educators to address educational needs.

The pre-test and post-test both featured multiple-choice formats, with responses evaluated objectively using standardized answer sheets. Scoring for these tests was on a scale from 0 to 100.

IV. Results and Findings

For analyzing data, a one-way ANOVA (Analysis of Variance) was performed to calculate the earliest proficiency of English levels of participants across five different classes, revealing no statistically significant differences in their abilities at the start of the program, with $F(5, 191)$ ² $= 0.496$, $p = .834$. This confirmed that all classes began with similar levels of English proficiency. Following the alignment of participants based on their initial pretest scores to ensure comparability, subsequently a one-way ANOVA was performed to rigorously examine the impact of the interventions on their English language skills. This statistical approach helped determine the effectiveness of the interventions in enhancing language proficiency across the classes. This subsequent analysis indicated notable

differences in skill levels in post-intervention. F (5, 191) ² = 1.237, p = .003, suggesting that the intervention's influence on English language proficiency was not uniform across all classes, indicating a differential impact. This variability highlights that the usefulness of the blended instruction inputs differed among the classes, affecting the enhancement of English language skills in distinct and measurable ways depending on the instructional inputs employed.

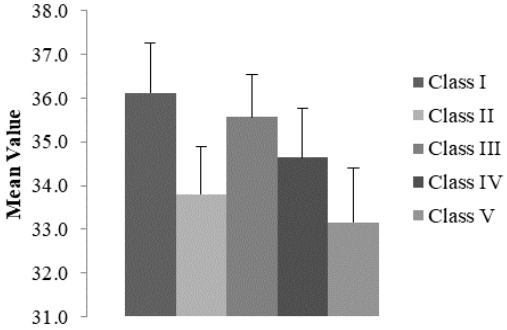

Figure 1.

Furthermore, a statistical analysis was performed to examine the relationship between the pretest and posttest scores of 197 participants. This analysis revealed a substantial correlation (r = .298, p < .001), suggesting a strong relationship between initial competencies and outcomes after the intervention. To further investigate how different blended learning inputs influenced participant performance from the pretest to the posttest, a two-way repeated measures analysis of variance (RM-ANOVA) was employed. This analysis aimed to elucidate the specific impacts of distinct instructional inputs over time, assessing their effectiveness across the testing intervals. The analysis showed that class had a significant main impact, with F(1, 37) = 117.109, p = .001, η^2p = .832, indicating that Class I, which received instruction via the rotation blended input model, outperformed Class II (treated with the Self-Blend input), Class III (treated with the Enriched Virtual blended input), Class IV (treated with the Flex blended input), and Class V (which underwent Communicative Language Teaching, or CLT) in terms of overall advancement in proficiency of English language (Figure 1). Additionally, the main impact of test time was of statistical significance, indicating that participants recorded higher average scores on the posttest compared to the pretest. This result underscores the measurable improvement in performance throughout the study. The increase indicates substantial advancements in language proficiency as a result of the intervention (Figure 2).

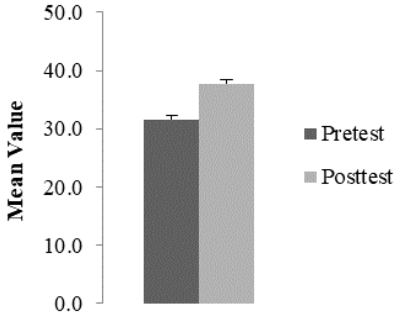

Figure 2.

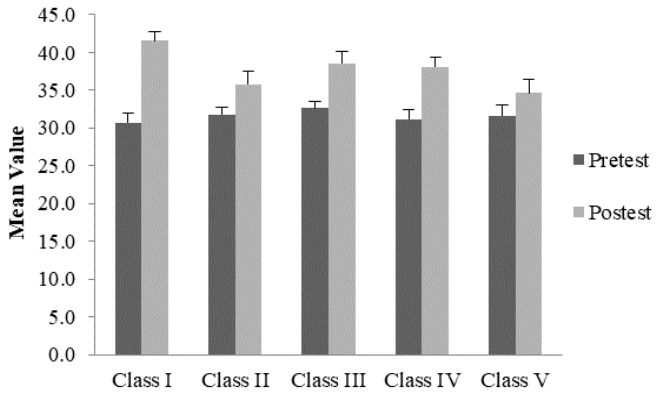

Figure 3.

The statistical analysis produced results of F (1, 41) = 121.171, with a p-value of .002 and a partial eta squared (η^2p) of .898, demonstrating a significant interaction effect between the types of tests administered (pre and post-test) and the various blended learning inputs employed (Rotation, Self-Blend, Enriched Virtual, Flex). The interaction demonstrated marked improvements in the posttest scores compared to the pretest across all classes, illustrating that each input facilitated different levels of advancement in English language proficiency. The data, presented in Figure 3, highlighted the effectiveness of the blended learning interventions, illustrating significant improvements in English language proficiency following the treatment phase. Each group demonstrated varying degrees of progress, with Class I, which was instructed using the rotation blended input, achieving the highest performance relative to the other groups. The notable difference underscores the efficiency of the rotation model in enhancing English language skills among participants, suggesting its potential superiority as an instructional strategy within this educational setting.

V. Discussion and Analysis

The findings showed different results regarding the enhancement of English language proficiency among students from the pre-test to the post-test when comparing the experimental blended learning models of flex, self-blend, rotation, and enriched-virtual with the control group utilizing the communicative language teaching (CLT) approach. The analysis revealed that the rotation model, in particular, led to the most significant improvements, consistently outperforming the other models and the control group in all tested areas of English proficiency. The flex and enriched virtual models also showed notable enhancements, surpassing the results of the self-blend model and the traditional CLT approach. In terms of language competency, the experimental groups did better overall compared with the control group, revealing how significantly blended learning strategies help students in learning English.

The superior performance of the rotation blended input model in improving English language proficiency among business students is robustly supported by key educational theories. According to Vygotsky's social constructivism, effective learning environments are those that promote active interaction and social engagement, both of which are integral to the rotation model (Vygotsky, 1978). This model facilitates dynamic shifts between various learning activities and modes, ensuring that students remain engaged and able to construct knowledge through practical and collaborative experiences. Moreover, the rotation model exemplifies the principles of cognitive load theory by distributing cognitive demands across different types of learning activities, thus optimizing cognitive processing (Sweller, 1988). Alternating between individual, peer, and group learning settings, prevents cognitive overload, making language acquisition more manageable and effective. Additionally, Mayer's multimedia learning theory suggests that the integration of multiple forms of media and instructional methods, as seen in the rotation model, can significantly enhance learning by catering to different cognitive styles and promoting deeper processing of information (Mayer, 2002). The diverse instructional approaches within the rotation model also support the tenets of differentiated instruction, which argue for adjusting teaching methods to address varied learning needs and preferences (Tomlinson, 2014). This approach corresponds to Deci and Ryan's self-determination theory, which emphasizes independence, competence, and connection to motivate students (Deci & Ryan, 1985). The rotation approach enables learners to display their competence and demonstrate their control over certain aspects of their education while creating a community, which could increase motivation and engagement.

The findings from this study underscore the efficiency of the rotation model in enhancing English language proficiency among students, aligning with broader research that supports the advantages of blended learning models. As per the meta-analysis conducted by Means et al. (2009), students who engage in blended learning environments generally outperform those online or face-to-face, a trend that the rotation model capitalizes on by mixing instructional methods. Similarly, a study by Bernard et al. (2014) found that blended approaches, particularly those involving significant synchronous or face-to-face interactions, are far more effective than courses that are completely online. The substantial improvements seen with the flex and enriched-virtual models also find support in the literature. Al-Qahtani and Higgins (2013) reported how flexibility in learning processes could increase student autonomy and engagement, leading to better educational outcomes. Further, Horn and Staker (2014) emphasize that enriched virtual models allow for customized learning in ways regular classrooms cannot. Contrastingly, the relative underperformance of the self-blend model echoes concerns raised by Dziuban et al. (2004) about the challenges students face when managing their learning without sufficient instructional support. This finding suggests that while self-blend models offer flexibility, they require well-structured support systems to be effective, particularly in academically rigorous disciplines such as engineering.

Overall, these findings offer credence to an expanding corpus of research that indicates the necessity of integrating both traditional and innovative teaching approaches. For instance, studies by Garrison et al. (2001) on the inquiry community framework illustrate how blending social, cognitive, and teaching presences can enrich learning experiences and outcomes. Similarly, a study by Baepler et al. (2014) shows that active learning spaces that combine physical and virtual elements can significantly enhance learning dynamics and student performance. This research contributes to the discourse by displaying that while all blended learning inputs tend to surpass traditional approaches, certain blended approaches, particularly those that incorporate varied learning activities and comprehensive support, are more likely to maximize educational outcomes.

VI. Conclusion

The study has demonstrated that blended learning inputs, particularly the rotation model, significantly enhance English language proficiency among business students compared to traditional communicative language teaching methods. The rotation model, with its diverse instructional strategies, was the most effective, followed by the flex and enriched virtual models, which also showed notable improvements in language skills. The self-blend model, while still beneficial, highlighted the need for robust support systems to fully realize its potential. These findings confirm the efficacy of integrating innovative digital learning tools with traditional teaching methods, emphasizing the importance of tailored educational approaches to meet specific learning needs. This study confirms the expanding corpus of education research that supports blended learning for learning different languages in engineering, medicine, and other professional realms. However, because the study was restricted to students studying courses, the findings could not extend to other academic professions or learning contexts. Given its brief length, the intervention could fail to entirely capture long-term learning advantages and retention. To confirm and extend these findings, additional studies should study the lasting advantages of blended learning models across greater educational areas and groups. To optimize methods of instruction, more investigation into which components of each blended learning model enhance language skills could offer more comprehensive perspectives. In this study, the self-blend showed potential but performed worse than other models. Variations in instructional design and learner engagement tactics should be investigated.

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