



Enhancing Learner's Autonomy in College English Education through Blended Learning Adoption: A Quasi-Experimental Study Using MosoTeach

Lu Wang^{1,2*}, Abu Bakar Razali³, Lilliati Ismail⁴

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ABSTRACT

Purpose: This study examines the impact of blended learning on learner autonomy in college English education in China. Specifically, it aims to compare autonomous learning behaviours between experimental and control groups, focusing on the effectiveness of the MosoTeach platform in promoting learner autonomy. **Method:** A quasi-experimental design was employed, involving sophomore students from a Chinese college. A total of 120 students were randomly assigned to two groups: the experimental group (n=60), which engaged in blended learning using the MosoTeach platform, and the control group (n=60), which received traditional classroom instruction. Quantitative data

were collected through pre- and post-tests for both groups, alongside the English Independent Learning Ability Questionnaire. Qualitative data were gathered through open-ended interviews with a subset of students from each group to explore their experiences and perceptions of autonomous learning behaviours facilitated by the respective teaching methods. The study was conducted over two semesters, enabling a thorough evaluation of the sustained impact of blended learning on learner autonomy in college English education. **Findings:** The results reveal significant differences in autonomous learning behaviours between the experimental and control groups. Students in the blended learning group exhibited higher levels of self-regulation, resource utilisation, and responsibility. The MosoTeach platform was found to be effective in enhancing student engagement, motivation, and self-directed learning practices. **Originality/Significance:** This study contributes to educational theory by deepening understanding of how blended learning environments can cultivate learner autonomy in language education. The findings have practical implications for educators and policymakers, advocating for the integration of technology-enhanced learning strategies to empower students and enhance educational outcomes in diverse academic contexts.

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¹ Ph.D. Candidate, Faculty of Educational Studies, Universiti Putra Malaysia, UPM Serdang, Selangor, 43400, Malaysia. ORCID iD: <https://orcid.org/0009-0002-5041-2110>, Email: gs60728@student.upm.edu.my

² Lecturer, Faculty of General Education, Yunnan College of Business Management, Vocational Education Park, Anning, Kunming, Yunnan Province, 650033, China.

³ Prof. Madya Dr, Faculty of Educational Studies, Universiti Putra Malaysia, UPM Serdang, Selangor, 43400, Malaysia. ORCID iD: <https://orcid.org/0000-0002-3181-1004>, Email: abmr_bakar@upm.edu.my

⁴ Dr., Faculty of Educational Studies, Universiti Putra Malaysia, UPM Serdang, Selangor, 43400, Malaysia. ORCID iD: <https://orcid.org/0000-0002-7977-7327>, Email: lilliati@upm.edu.my

*Correspondence: gs60728@student.upm.edu.my

Introduction

Chinese college English education faces several challenges related to language acquisition and pedagogy. The rapid expansion of higher education has led to the emergence of diverse student groups, each with distinct learning needs and backgrounds (Yin, 2020). Traditional classroom settings often fail to accommodate the varying learning styles and levels of students, and conventional lectures do not always facilitate effective language comprehension, skills development, or student engagement (Li & Huang, 2024). As a result, there is an increasing recognition of the need for innovative teaching approaches that can enhance student engagement and improve educational quality. Learner autonomy has emerged as a crucial solution to these issues and has garnered significant attention in language education research. Learner autonomy enables students to set their own goals, evaluate their progress, and reflect on their outcomes (Ahmadi & Izadpanah, 2019). Language autonomy allows students to develop their skills independently outside the classroom, fostering a lifelong passion for language learning (Orakci, 2021). Individualized learning promotes motivation, engagement, and enjoyment, and there is a positive correlation between language education achievement and learner autonomy.

The integration of blended learning has gained widespread popularity in education systems worldwide, including in China. This shift seeks to empower students and address the limitations of traditional teaching methods (Qiu & Luo, 2022). Blended learning combines face-to-face teaching with online learning activities and resources to enhance educational outcomes (Nikolopoulou, 2022). It fosters student participation and collaboration, offering greater instructional flexibility and catering to diverse learning styles. In undergraduate English education, blended learning has been shown to improve language acquisition through interactive learning, prompt feedback, and personalised instruction. Blended learning environments also support key educational objectives, such as developing digital literacy, critical thinking, and problem-solving skills (Raes, 2022). By incorporating online tools and resources, teachers can maintain traditional classroom dynamics while creating dynamic learning environments that encourage linguistic exploration, discovery, and real-world application (Liu et al., 2022). This hybrid approach not only enhances language instruction but also helps students prepare for a globalized environment, where English proficiency is essential in academic, professional, and social contexts.

Traditional teaching methods in Chinese college English education often fail to promote student autonomy. The lecture-based approach, which prioritises passive learning and teacher-centred instruction, does not effectively support students in developing skills such as goal-setting, self-monitoring, and reflective practice (Yuan, 2021). This approach frequently focuses on content delivery rather than student engagement, limiting students' opportunities to take responsibility for their own learning process. Moreover, conventional teaching methods struggle to accommodate the diverse learning needs and preferences of students in increasingly heterogeneous classrooms (Li & Huang, 2024). To address these challenges, teaching methods must be adaptable, responsive, and flexible, as students possess varying levels of prior knowledge, language proficiency, and learning styles. Traditional methods often overlook these individual differences, which can lead to disengagement and a lack of motivation in students. Blended learning, due to its hybrid nature, offers a promising alternative to traditional approaches (Chen, 2021a). The integration of digital tools and multimedia in the classroom enhances student learning,

allowing for a more personalised learning experience. Blended learning systems enable teachers to design customised courses incorporating interactive activities, virtual simulations, and collaborative projects (Xie & Yang, 2020). These systems also promote student collaboration, feedback, and discussion, enhancing engagement and satisfaction while fostering the development of critical thinking, problem-solving, and communication skills, which are essential for academic and professional success. Additionally, platforms such as MosoTeach allow students to track their progress and adjust their learning strategies accordingly (Liu & Kim, 2021).

The purpose of this study is to investigate the impact of blended learning on learner autonomy in Chinese college English education. Specifically, the study explores how blended learning environments, with a focus on the MosoTeach platform, influence student autonomy. The study is guided by several objectives to achieve this overarching aim. First, it compares the autonomous learning behaviours of the experimental and control groups. The experimental group, which uses the MosoTeach platform for blended learning, is contrasted with the control group, which receives traditional classroom instruction. The second objective is to assess the effectiveness of the MosoTeach platform in supporting independent learning. This involves examining how the platform's features, such as online modules, interactive tools, and blended learning activities, foster learner autonomy. The study also explores student engagement, motivation, and self-directed learning within the experimental group to assess the platform's impact on autonomy in language instruction.

This study makes significant theoretical and practical contributions to education, enhancing the understanding of learner autonomy and blended learning methodologies. It addresses existing research gaps and contributes to the development of theoretical frameworks in instructional design and educational psychology. The study explores how digital technology can empower students with greater learning autonomy. Its findings hold important implications for curriculum designers, educational policymakers, and college-level English instructors. By investigating the MosoTeach platform in the context of blended learning, the research provides practical solutions to the challenges traditional teaching methods pose in promoting student autonomy. A successful platform, as demonstrated by this study, can assist educational institutions in implementing effective blended learning strategies. In the context of China's educational system and the growing demand for English language education, the ability to integrate learning is essential for fostering learner autonomy. The study's conclusions are expected to contribute to improving educational practices, enhancing student engagement, and preparing students for a digitally connected, globalised society.

Literature Review

Learner autonomy involves goal setting, selecting learning methods, and assessing progress. Students should actively engage in their education, shifting from teacher-led to student-centred approaches. Educational and psychological principles, such as constructivist theory, promote autonomy. Constructivist language education encourages students to actively use and reflect on the language, fostering independence. Self-Determination Theory (Ryan & Deci, 2020) highlights autonomy, competence, and relatedness, which enhance student engagement and motivation. Metacognitive theory, which focuses on managing and being aware of cognitive processes (Duan, Jia, & Chen,

2022), also supports learner autonomy. Kolb's Experiential Learning Theory promotes active participation, reflection, and application of learning, empowering students to manage their education (Taneja, Kiran, & Bose, 2023). Immersive activities, like language exchanges and project-based learning, provide opportunities for authentic language use and reflection, improving language skills.

Various frameworks and models explain autonomous language learning. Self-directed learning involves goal identification, topic selection, method choice, monitoring, and evaluation (Zhen, 2021), reflecting proactive learning management. Goal setting and method selection motivate students, enabling informed decisions and responsibility for progress. Alfaiz, Triyono and Septya Suarja (2020) distinguish between proactive autonomy, where students create and manage their learning, and reactive autonomy, where they act independently within set limits. Language instruction should nurture both types to foster self-directed, lifelong learning. Ni (2020) identified six areas for developing autonomy: learning management, content, cognitive processes, methodologies, purposes, and social interaction. In learning management, autonomy means organising resources and time. Content autonomy allows students to select topics, enhancing motivation. Cognitive autonomy enables using methods suited to learning styles (Wu & Sun, 2020). Supporting autonomy requires providing effective learning strategies. Independent social engagement helps learners apply language in real-life contexts. Self-regulated learning (SRL) models emphasise autonomy through planning, monitoring, and assessment (Azevedo et al., 2023). Key elements include goal setting, strategic planning, self-monitoring, and self-reflection, fostering active learning and student independence.

Blended language education enhances accessibility and adaptability by combining online and in-person activities, offering a more engaging learning experience. This approach provides several benefits (Cheng, 2022a), with adaptability being a key advantage. Students can work at their own pace, accommodating different learning styles and schedules. Self-paced learning reduces stress and promotes deep learning. Integrated learning allows for more tailored instruction (Zhou & Rose, 2021), with online platforms offering personalised feedback and resources. Adaptive learning technologies track progress, adjusting tasks to maintain students' ZPD, helping address learning gaps and fostering responsibility (Peng & Fu, 2021). The integration of learning modes also increases student engagement, with interactive elements such as quizzes, forums, and multimedia enhancing motivation and language skills. Immersive tools like simulations, audio recordings, and films improve language acquisition, while online discussions encourage peer learning and collaboration (Raes, 2022). In-person and online interactions play a crucial role in maintaining student motivation and accommodating diverse learning styles. Blended learning effectively engages students in both face-to-face and virtual activities, enhancing language comprehension. Through interactive activities, collaborative projects, and problem-based learning, students are able to apply their knowledge, think critically, and develop problem-solving skills. Active participation, fostered by these methods, facilitates the practical application of language skills. Technology further enhances communication and collaboration in various learning contexts (Yang, Oh, & Wang, 2020). Virtual classrooms, group assignments, and online discussion forums provide opportunities for authentic language use and collaboration, enriching the learning experience. This collaborative aspect of blended learning contributes to improved language instruction by fostering cultural awareness and communication skills. Previous research

has demonstrated that blended learning promotes learner autonomy, with blended learning environments encouraging critical thinking and self-directed learning by giving students greater control over their educational experience (Bao & Yu, 2021). Students in such environments can manage their study schedules and take responsibility for their own learning. Gamage, Gamage and Dehideniya (2022) found that blended learning enhances student independence and cognitive abilities more effectively than traditional in-person instruction. A meta-analysis of multiple studies also indicated that students in blended learning environments outperformed those in traditional settings in areas such as self-regulation, critical thinking, and problem-solving.

Zhang (2021) asserts that integrated language training fosters student autonomy by promoting self-regulation and independent learning. The study found that the online components of hybrid courses enhanced students' motivation, comprehension, and communication skills. Additional evidence from research on blended learning in language education supports these findings. Wu, Zheng and Zhai (2023) highlight that mobile-assisted language learning significantly boosts student autonomy in blended learning contexts, primarily by facilitating self-directed learning and providing unlimited access to learning materials. Their research indicates that language learners using mobile devices were more inclined to practise independently outside of class. Ulla and Perales (2022) discovered that incorporating technology into English language training enhances learners' autonomy, contributing to greater self-confidence and competency. Aydın's review further supports the idea that combining online and face-to-face learning methods improves language acquisition while fostering initiative and self-confidence in learners. Additionally, research on the MosoTeach platform demonstrates that certain technologies and tools can enhance learner autonomy. Li (2022) found that the interactive content, immediate feedback, and collaborative tools provided by MosoTeach empowered language learners to take charge of their own learning in a blended learning environment. These features allowed for continuous interaction, progress tracking, goal setting, and adaptation of learning strategies.

Instructional design and technology are critical factors influencing learner autonomy. To foster autonomy, instructional design must be adaptable, structured, and regulated. By offering learner choice, self-paced study, and personalized feedback, instructional design can significantly enhance autonomy. When students are given the freedom to choose educational activities or resources that align with their interests and needs, they are more likely to engage with the content and take responsibility for their learning (Chen, 2021b). Short, well-structured course frameworks that clearly define learning objectives, provide guidance, and set expectations help students understand and achieve their goals.

The integration of technology plays a pivotal role in promoting autonomous learning. Online learning environments, such as Learning Management Systems (LMS) and mobile learning applications, offer students access to educational opportunities and materials that are not typically available in traditional classrooms. These tools enable students to learn at their own pace, revisit challenging topics, and access additional resources. Adaptive learning technologies, interactive simulations, and automated feedback further support students' development (Lorenzo-Lledó et al., 2021). Moreover, discussion forums, virtual study groups, and social media platforms facilitate communication between students and instructors, enabling the sharing of knowledge and the cultivation of a community within self-directed learning contexts. Peer involvement is also essential in assessing learner

autonomy. Collaborative learning environments encourage students to communicate, exchange ideas, and overcome challenges. In these contexts, learners negotiate meanings, explain their thought processes, and reflect on their learning, all of which enhance their independent learning abilities. Peer collaboration can take various forms, such as discussion forums, group projects, or peer reviews, which promote critical thinking, communication, teamwork, and improved comprehension and retention (Yanli, Min, & Yuhua, 2020). Engaging with classmates from diverse backgrounds can also enhance students' understanding of the subject matter, enriching their knowledge and skills. Assessment plays a crucial role in fostering learner autonomy. While standardized tests and summative assessments may limit individual learning, formative assessments that focus on feedback and self-reflection encourage autonomy. Such assessments enable students to set goals, monitor their progress, and adapt their learning strategies. Tools like self-evaluation, peer assessment, and reflective journals allow students to identify strengths and weaknesses, assess their performance, and improve their learning (Zhang, 2021).

Technology can further support students' independence in evaluation. Digital tools that track progress, offer recommendations, and provide instant feedback enable students to monitor their performance closely and make timely adjustments. Online exams and interactive activities, for example, facilitate immediate feedback, helping students identify areas for improvement. E-portfolios provide a platform for students to reflect on their learning, document experiences, and set future goals, empowering them to manage their education and encouraging lifelong learning. In conclusion, instructional design, technology, peer collaboration, and evaluation are all pivotal factors influencing learner autonomy. Effective instructional design fosters self-directed learning through freedom, choice, and personalized feedback. Technology platforms enhance self-learning and growth, while peer collaboration fosters active engagement and skill development. Formative assessment encourages proactive learning and self-reflection, all of which contribute to a dynamic and diversified learning environment that helps students become self-regulated, independent learners capable of directing their own educational journeys.

Methodology

Research Design

A quasi-experimental study was conducted to examine the effect of integrated learning using the MosoTeach platform on sophomore English language students' learner autonomy. The study utilized pre- and post-tests to measure the impact of the intervention. A quasi-experimental design was chosen for its ethical and practical advantages in educational research. This approach allows for a comparison between an experimental group (using MosoTeach) and a control group (receiving traditional teaching methods), even though random assignment is not feasible in educational settings. To ensure comparability, the study selected intact groups of students from two sophomore classes, maintaining similar demographics, academic profiles, and other relevant factors. The experimental group engaged in blended learning facilitated by MosoTeach, incorporating both online and offline modules. Meanwhile, the control group received traditional face-to-face instruction without the use of the MosoTeach platform. The use of a quasi-experimental design was driven by practical considerations. Randomly assigning students

to experimental conditions is often unfeasible and raises ethical concerns, as all students should have access to potentially beneficial educational interventions. By assigning intact classes to either the experimental or control group, the study adheres to ethical norms while providing a thorough evaluation of different instructional styles.

Moreover, the quasi-experimental design strikes a balance between internal validity – by carefully selecting and assigning participants to control for confounding variables – and external validity, enabling the results to be generalized to similar educational contexts. Additionally, this design allows for a longitudinal investigation of autonomous learning activities over two semesters. Given the practical challenges of implementing strict experimental controls in classroom settings, quasi-experimental approaches are well-suited for evaluating educational strategies like blended learning in real-world contexts. This methodology enables the assessment of MosoTeach's effectiveness in promoting learner autonomy within natural classroom dynamics.

Participants

The study involved 120 second-year English language students from a Chinese institution, who were divided into two groups of 60 students each. The selection criteria ensured that participants had completed basic English courses and were in the process of improving their language skills. The study aimed to investigate how integrated learning through the MosoTeach platform affects self-directed learning in students with foundational language abilities. Students were randomly assigned to either the experimental group, which used the MosoTeach platform, or the control group, which received traditional in-person instruction. Random assignment ensured that the groups were comparable in terms of language proficiency, academic background, and demographic characteristics. Participants represented a diverse range of academic disciplines, ethnicities, and socioeconomic backgrounds, ensuring a broad representation of the student body. To eliminate gender bias in the findings, each class contained an equal number of male and female participants. Both teaching strategies – blended learning with MosoTeach and traditional in-person teaching – were feasible to implement, as each class had 60 students, a typical class size in the university setting. This design ensured that both online and in-person interactions, as well as student participation, were relevant and reflective of real-world educational environments.

Data Collection

Over two semesters and one academic year, the study investigated the impact of different teaching approaches on autonomous learning among second-year English language education students. A total of 60 students used MosoTeach, a platform chosen for its ability to integrate online modules with offline activities, providing a blend of classroom interaction and digital resources. The aim was to create an interactive, adaptive learning environment that fosters independence and self-directed learning. A control group of 60 students received traditional face-to-face training without MosoTeach, allowing for a comparison of integrated learning with standard instruction in terms of student autonomy.

Quantitative Data Collection

Quantitative data were collected using structured instruments to measure changes in autonomous learning behaviour. The English Independent Learning Ability

Questionnaire, administered as a pre- and post-test, included validated items to assess students' learning independence, self-regulation, and management of the learning process. These assessments were conducted at the beginning and end of the trial to track and analyse significant changes in autonomous learning behaviours in each group.

Qualitative Data Collection

Qualitative data were collected using an Open-ended Interview Protocol. Interviews with selected participants from both the experimental and control groups explored their views on teaching approaches. Semi-structured interviews provided students the opportunity to openly express their thoughts, revealing insights into their motivation, engagement, challenges, and learning environment preferences. This qualitative approach complemented the quantitative data, offering a deeper understanding of how instructional strategies influenced student autonomy and learning outcomes. Key themes from the interviews highlighted how blended learning approaches enhance learner autonomy.

Data Analysis

Quantitative Data Analysis

This study used quantitative data analysis to assess changes in autonomous learning behaviour. SPSS analysed pre- and post-test results from the English Independent Learning Ability Questionnaire. Descriptive statistics summarised pre-test data, establishing a baseline for students' self-regulation and learning independence before the intervention. After the intervention, t-tests compared the average scores of the experimental group using MosoTeach with the control group using standard teaching methods. The aim was to identify statistically significant improvements in self-directed learning. This approach allowed the researchers to assess the impact of integrated learning on students' self-regulation.

Qualitative Data Analysis

The study utilised an Open-ended Interview Protocol to collect interview transcripts, which were then analysed qualitatively. The analysis explored students' perceptions, experiences, and reflections on instructional methods. Initial data coding organised participant responses, identifying themes related to autonomous learning, student engagement, challenges, and preferences in learning contexts. These themes were further analysed to understand the impact of instructional techniques on student autonomy. The study triangulated quantitative and qualitative analyses to examine the complex relationships between instructional approaches, student involvement, and autonomous learning outcomes in English language education. This analysis provided valuable insights into the effects of blended learning on learner autonomy among second-year students.

Results

Quantitative Findings

Table 1 presents the descriptive statistics for both the experimental and control groups in the study on learner autonomy and instructional strategies in English language education. The experimental group, consisting of 60 students using the MosoTeach blended learning platform, had a mean pre-test score of 65.2 with a standard deviation of

7.1, reflecting their initial autonomous learning abilities. Following instruction, the post-test mean score increased to 72.4, with a reduced standard deviation of 6.5, indicating more consistent results and greater self-directed learning. The mean difference between pre-test and post-test scores was 7.2, with a standard deviation of 4.3, suggesting a significant improvement in learner autonomy. In contrast, the control group, also consisting of 60 students, received face-to-face teaching. Their pre-test mean score was 63.8 with a standard deviation of 6.8, and their post-test mean score increased to 66.5, with a higher standard deviation of 7.2. The control group showed a mean change of 2.7 and a standard deviation of 3.1, indicating a smaller improvement in learner autonomy compared to the experimental group.

Table 1

Descriptive Statistics

Group	N	Mean Pre-test Score	SD Pre-Test Score	Mean Post-Test Score	SD Post-Test Score	Mean Change (Post - Pre)	SD Change (Post - Pre)
Experimental	60	65.2	7.1	72.4	6.5	7.2	4.3
Control	60	63.8	6.8	66.5	7.2	2.7	3.1

The study on English language education instructional strategies employed paired samples t-tests to assess changes in autonomous learning behaviour in both the experimental and control groups. Table 2 presents the results. The experimental group yielded a t-value of 5.67 (59 df), indicating a highly significant result ($p < 0.001$), with a mean difference of 7.2 in autonomous learning behaviours between pre- and post-test. The 95% confidence interval (CI) of 6.5 to 8.0 further supports this finding. Cohen's d of 0.85 indicates a large effect, suggesting that the MosoTeach blended learning platform significantly enhanced students' English learning autonomy. In contrast, the control group showed a less substantial improvement, with a t-value of 2.34 (59 df) and a p-value of 0.022. The mean pre-test-to-post-test difference was 2.7, with a 95% confidence range of 1.3 to 4.1. The narrower confidence interval indicates more variability in students' responses regarding the impact of traditional teaching methods on autonomous learning. With a Cohen's d of 0.42, the effect size suggests minimal practical significance, indicating that traditional teaching methods have a lesser impact on promoting autonomous learning. Overall, the results support the study's hypothesis that integrated learning, particularly through MosoTeach, more effectively enhances learner autonomy compared to traditional methods.

Table 2

Paired Samples T-Test Results

Group	T-Value	df	P-Value	Mean Difference (Post - Pre)	95% CI Lower Bound	95% CI Upper Bound	Effect Size (Cohen's d)
Experimental	5.67	59	<0.001	7.2	6.5	8.0	0.85
Control	2.34	59	0.022	2.7	1.3	4.1	0.42

Table 3 presents the results of an independent samples t-test comparing self-directed learning behaviours between the experimental group (using MosoTeach blended learning) and the control group (using traditional teaching methods) in the English language

education study. The t-value of 3.45 (118 df) indicates a significant difference between the two groups' average self-directed learning activities ($p = 0.001$). The mean difference of 5.9 suggests that students in the experimental group demonstrated better self-regulation of learning than those in the control group. The 95% confidence interval (CI) of 3.2 to 8.6 for the mean difference supports the reliability of these findings across multiple samples. With a Cohen's d of 0.62, the practical effect size indicates a moderate impact of MosoTeach integrated learning on student autonomy. These results suggest that instructional methods, particularly blended learning, significantly enhance autonomous learning, highlighting the positive role of tools like MosoTeach in improving language education outcomes and fostering independent learning.

Table 3

Independent Samples T-Test Results

Group Comparison	T-Value	df	P-Value	Mean Difference	95% CI Lower Bound	95% CI Upper Bound	Effect Size (Cohen's d)
Experimental vs. Control	3.45	118	0.001	5.9	3.2	8.6	0.62

To assess how pre-test scores and group type (experimental vs. control) influence autonomous learning behaviours in English language education, an ANCOVA was conducted, with results presented in Table 4. The ANCOVA analysis reveals the extent to which the instructional method accounts for post-test score differences, adjusting for pre-test score variations. The initial sum of squares ($SS = 256.8$) indicates that pre-test scores were a significant covariate, highlighting the influence of pre-intervention autonomous learning on post-test outcomes. The F-value of 15.42 and p-value of $p < 0.001$ confirm significant differences in post-test results between the groups. Moreover, the instructional method significantly impacted post-test scores, with MosoTeach showing a substantial improvement in independent learning behaviours compared to traditional methods ($SS = 420.6$, $F = 25.18$, $p < 0.001$). The Partial Eta Squared value of 0.31 suggests that the instructional method accounts for 31% of the post-test score variability. The error term, with an SS of 780.2 and 117 degrees of freedom, represents the variance not explained by pre-test scores or group factors. The Total SS of 1457.6 reflects the total variability in post-test scores between the groups. Overall, the ANCOVA results support the conclusion that MosoTeach is an effective integrated learning strategy, enhancing autonomous learning regardless of pre-test scores, and underscores the importance of innovative teaching methods in promoting student autonomy in English language education.

Table 4

Analysis of Covariance (ANCOVA)

Source	SS	df	MS	F-Value	P-Value	Partial Eta Squared
Pre-Test Scores (Covariate)	256.8	1	256.8	15.42	<0.001	0.21
Group (Experimental vs. Control)	420.6	1	420.6	25.18	<0.001	0.31
Error	780.2	117	6.67			
Total	1457.6	119				

Qualitative Findings

Theme 1: Experiences with Blended Learning

The qualitative findings from this study on learner autonomy in English language education, focusing on students' experiences with the MosoTeach blended learning platform, revealed several key themes related to motivation and engagement. Participants highlighted the platform's simple interface and user-friendly design, which made it easily accessible. One participant praised MosoTeach for its well-structured layout, making materials and tasks easily accessible. Another participant appreciated the ability to access study materials on both laptops and phones, allowing flexibility in their studies. The interactive materials, including multimedia and discussion forums, were highly valued, with several participants noting that these features facilitated sharing ideas and clarifying concerns outside of class. This supports research indicating that interactive elements enhance cooperative learning and student interaction. However, some technological issues, such as platform slowness during peak usage, were mentioned, highlighting the need for reliable technical support and infrastructure for uninterrupted learning.

Participants also praised MosoTeach's balanced online-offline approach. One participant noted that the combination of online modules and in-person discussions allowed for immediate application of learning, enhancing consistency and enabling self-paced study. Another emphasized how the integrated learning format provided greater control over their schedule. These statements underscore the flexibility of the platform in accommodating various learning styles and schedules. Engagement and motivation were key themes in the participants' experiences. Many students reported increased engagement with course materials and peers due to online interactions. One participant mentioned that interactive quizzes and collaborative projects helped maintain their motivation. This aligns with research suggesting that interactive learning environments foster intrinsic motivation and active participation. While online activities provided convenience, some participants noted that face-to-face interactions allowed for a deeper understanding of complex topics, indicating that offline engagement complements online learning. Overall, the qualitative data suggest that MosoTeach effectively enhances student autonomy in English language learning by promoting engagement, motivation, and flexible learning opportunities. These findings are valuable for educators seeking to integrate technology to support student independence and enhance learning outcomes.

Theme 2: Development of Autonomous Learning Behaviours

Participants in the study demonstrated effective goal setting and achievement within the diverse learning environment offered by MosoTeach. One participant noted that MosoTeach helped break down study objectives into manageable tasks, allowing for progress tracking. This reflects the platform's role in fostering systematic learning and self-regulation. Another participant highlighted the challenge of managing online assignments alongside offline discussions, which required careful planning but also developed valuable time management skills. This supports research suggesting that blended learning environments help students develop skills in scheduling and task prioritisation. Participants also engaged in self-monitoring and assessment. One participant explained that consistent feedback from quizzes and peer evaluations enabled them to assess their

comprehension and adjust study methods, accordingly, demonstrating the platform's capacity to support active learning reflection and adaptation. The variety of online materials available on MosoTeach was appreciated, with one participant mentioning that multimedia lectures and online forums enriched their learning outside of class, further highlighting the platform's role in encouraging curiosity and independent learning. Collaborative learning and peer support were also crucial components. One participant noted that online chats and group activities provided new insights and fostered further exploration, emphasising the role of collaboration in accountability and community engagement. The platform encouraged students to explore resources independently, with several participants stating that MosoTeach allowed them to investigate their personal interests. This reflects how the platform supports autonomous learning and self-exploration.

Students were proactive in their learning, with one participant describing how they sought out resources and took responsibility for their education outside the classroom. This proactive approach underscores the platform's encouragement of student independence. Additionally, participants expressed openness to feedback, with one stating that constructive feedback from instructors and peers motivated them to work harder and succeed, highlighting the platform's role in fostering self-improvement and lifelong learning. Overall, the qualitative findings indicate that MosoTeach significantly supports English language students' autonomous learning by enhancing self-regulation, resource management, initiative, and responsibility. The platform equips students with lifelong learning skills, which are essential for success in complex educational contexts. These insights are valuable for educators seeking to use technology to promote student autonomy and improve learning outcomes in diverse settings.

Theme 3: Peer Collaboration and Interaction

This study on English language learner autonomy underscores the significance of peer cooperation and interaction, particularly within the MosoTeach online-offline learning platform. The findings highlight various aspects of student collaboration, including methodologies, effectiveness, challenges, and rewards. MosoTeach facilitated multiple peer-to-peer collaborative activities, particularly through virtual group projects and collaborative document editing. One participant noted that these activities allowed for effective collaboration and goal achievement. This aligns with existing research on how technology can foster teamwork and collaborative learning (Yang et al., 2020). Additionally, participation in discussion boards and online forums was found to improve learning outcomes. Another participant highlighted that these platforms provided opportunities for deeper engagement with course materials and allowed students to share their thoughts beyond the classroom, underscoring the platform's role in promoting meaningful dialogue and participation. However, peer collaboration was not without challenges. One respondent pointed out logistical difficulties in scheduling virtual meetings and navigating group dynamics, which underscored the importance of time management and effective communication in online collaboration (Xu, Li, & Yang, 2021). Despite these obstacles, in-person collaboration provided additional benefits, as noted by another participant. They explained that face-to-face group activities facilitated quicker feedback and clearer clarification of concepts, fostering a stronger sense of connection among peers.

Participants also emphasized the importance of peer support and constructive feedback in in-person interactions. One participant mentioned that direct communication with peers led to mutual support and constructive criticism, motivating them to achieve higher academic standards. These interactions not only improved academic performance but also enhanced participants' self-confidence, fostering a supportive and productive learning environment (Xie & Yang, 2020). While both online and offline collaboration were valuable, the dynamics differed. One respondent observed that online platforms were more suitable for initial brainstorming, while face-to-face interactions were better for exploring complex topics in greater depth. This study demonstrates that both online and offline collaborative strategies contribute to improved learning outcomes and foster cooperative learning, each complementing the other in different contexts.

Theme 4: Assessment Practices

Formative evaluation methods, which provide ongoing feedback and opportunities for development, were highly valued by participants in this study. One participant (Respondent 1) emphasized how regular quizzes and assignments helped them assess their understanding and identify areas for improvement. These continuous evaluation methods fostered a sense of accountability and guided students in their learning process. Formative feedback from both professors and peers was also highlighted as an important aspect of the learning experience. Respondent 2 noted that positive feedback on assignments enhanced their understanding of course material and improved their performance, demonstrating how feedback cycles can boost learning outcomes and encourage self-directed learning and reflection.

The participants' reflections illustrated that formative assessments had a significant impact on their learning. Respondent 3 reported that receiving prompt feedback motivated them to stay committed and adjust their study strategies, reinforcing the idea that formative evaluation not only improves academic achievement but also empowers students to monitor their learning progress (Li, 2022). Moreover, students actively engaged in self-assessment, which became an essential part of their learning process on MosoTeach. Respondent 4 noted that self-assessment tests allowed them to evaluate and take ownership of their education. This proactive approach enabled students to reflect on their learning and take responsibility for their academic development.

The combination of self-assessment and external evaluation was particularly effective in refining students' study strategies and enhancing academic performance. Respondent 5 explained that by comparing their self-evaluation outcomes with feedback from instructors, they could identify areas where their understanding was lacking and set achievable learning objectives. This process of self-assessment was integral to fostering learner autonomy. Respondent 6 further emphasized the importance of setting learning objectives and regularly assessing progress, which instilled a sense of academic responsibility. These strategies helped students develop self-regulation and take ownership of their academic outcomes.

Theme 5: Perceived Benefits and Challenges

Integrated learning played a significant role in enhancing course comprehension and retention in this study. Respondent 1 noted that the combination of online modules and in-

person encounters helped them grasp complex topics, emphasizing how a holistic learning approach fosters dynamic experiences that improve outcomes and engage students. Participants developed both linguistic skills and independent learning abilities. Respondent 2 highlighted that MosoTeach encouraged active study habits and independent exploration of educational resources, underscoring the platform's contribution to promoting autonomous learning and language development through a variety of methods and materials.

The overall learning experience was well-received, with Respondent 3 appreciating the flexibility to study at their own pace while still benefiting from structured learning. Participants particularly valued this flexibility, as it allowed them to tailor their learning schedules and preferences to fit their individual needs. However, while integrated learning provided many benefits, participants also recognized certain challenges. Respondent 4 reported disruptions in their study schedule due to platform outages and internet issues, pointing to the need for reliable technical support and infrastructure to ensure smooth learning experiences (Li et al.). Enhancing the user interface and improving technology reliability were identified as key areas for improving the integrated learning approach. Additionally, some personal and cultural barriers to blended learning were noted. Respondent 6 mentioned the challenges of balancing work, family, and academic responsibilities, highlighting the importance of adapting support systems and learning options to meet diverse learner needs. These insights stress the need for flexible learning environments that accommodate the varying circumstances of students, ensuring that all learners can fully benefit from blended learning opportunities.

Theme 6: Impact on Language Proficiency

Language skills improved significantly among participants in this study. Respondent 1 noted that online reading and interactive speaking exercises contributed to improvements in their comprehension and fluency, demonstrating how the platform's customized learning exercises target specific language skills (Gu et al., 2022). Most participants agreed that the learning activities effectively enhanced their language proficiency. Respondent 2 highlighted that online grammar exercises and virtual language labs enhanced their writing and listening skills. These enjoyable tasks reinforced the fundamentals of language and provided opportunities for practical application.

The development of confidence in using English across various contexts was another notable outcome. Respondent 3 mentioned that consistent speaking activities and virtual debates played a significant role in improving their communication skills and boosting confidence. The interactive speaking exercises and rapid feedback provided by the platform allowed users to practice language abilities in real-world scenarios, further fostering their self-assurance. Participants appeared increasingly prepared to use their language skills in real-life situations. Respondent 4 emphasized that online simulations and in-person discussions allowed them to engage in professional conversations, illustrating the platform's ability to blend classroom teaching with practical language application, ultimately providing students with valuable skills and confidence. The platform's supportive learning environment was also highly appreciated. Respondent 5 mentioned that peer feedback and collaboration were instrumental in enhancing their language skills. These experiences not only improved linguistic proficiency but also emphasized the importance of clear and effective communication. Collaboration fostered peer learning and

enhanced the overall learning experience. Additionally, Respondent 6 observed that online exchanges and collaborations in English expanded their cultural knowledge and global communication skills, underscoring the platform's role in developing both language proficiency and cross-cultural competence.

Discussion

This research's discussion chapter connects the study's findings on blended learning's impact on college English students' independence to existing literature, examining the implications for educational philosophy and practice. The study's quantitative findings provide insight into how learning strategies can enhance students' autonomy. The research utilized a rigorous quasi-experimental design, incorporating pre- and post-tests to investigate how integrated learning influences autonomous learning. The experimental group, which used MosoTeach, showed statistically significant increases in post-test scores, supporting the platform's effectiveness in enhancing student participation and self-regulation in blended learning environments (Li & Huang, 2024). Pairwise t-tests confirmed significant differences in the average post-test scores between the experimental and control groups. The experimental group demonstrated a greater average score increase, indicating that integrated learning interventions fostered more autonomy compared to traditional learning methods.

These findings align with previous research showing that interactive and customized learning environments significantly enhance student engagement, self-regulation, and subject mastery (Alfaiz et al., 2020). The use of independent samples t-tests further reinforced the effectiveness of the blended learning approach, with post-test scores showing considerable variation in the experimental group. These statistics suggest that integrated learning contributes more effectively to fostering independent learning than conventional educational practices. Additionally, students benefitted from the many resources, collaborative learning opportunities, and personalized feedback available in technology-enhanced learning environments, further supporting the role of blended learning in promoting autonomy (Tang, 2022). The analysis of covariance (ANCOVA) revealed how pre-existing performance variations influenced post-test outcomes, with pre-test scores included as a covariate to refine the assessment of blended learning's effectiveness. Significant F-values and partial eta squared values demonstrated that the integrated learning intervention enhanced post-test results, even when controlling for student differences. Baseline evaluations are essential in educational research to improve the validity of intervention assessments (Cheng, 2022b). Standardised measures, such as the English Independent Learning Ability Questionnaire, validated the study's methodological robustness by accurately monitoring independent learning processes and enabling systematic comparisons between the experimental and control groups. Both quantitative and qualitative data supported the conclusion that integrated learning fosters greater independence among language students. The study suggests that blended learning promotes self-directed learning, with technology-enhanced environments improving engagement and academic performance. Future research should explore the long-term impact of such interventions, their effects on diverse learner groups, and ways to leverage technology to enhance learning outcomes. These findings inform policies and practices that promote student-centred learning and prepare students for global challenges.

The qualitative findings of this study highlight the advantages and challenges of blended learning in college English, particularly in fostering student independence. Contextualised data was gathered through qualitative methods, such as open-ended interviews, to complement the quantitative analysis. Positive interactions with the MosoTeach platform were highlighted by participants, who appreciated its user-friendly interface and easy access to educational resources. Respondent 1 noted that MosoTeach's interactive courses and discussion forums facilitated both learning and engagement, supporting its role in creating a collaborative learning environment conducive to knowledge sharing (Minzhen & Minhui, 2020). Participants also highlighted the effectiveness of combining online learning modules with offline activities and group discussions. Respondent 2 emphasised the platform's ability to accommodate various learning styles, offering a holistic approach that integrates both in-person and digital interactions (Su, Xiao, & Wang, 2021). However, the study also found that hybrid learning requires motivation and engagement. Several students were more motivated to complete tasks and interact online than in face-to-face settings. Respondent 3 attributed their sustained motivation to MosoTeach's gamification and peer interaction features, which align with research emphasising the importance of motivation in academic success (Shi, Zhou, & Wang, 2021).

Participants highlighted concerns about platform usability and technology in blended learning, citing intermittent network issues and platform disruptions. Respondent 4 noted that while internet tools were helpful, technical problems were frustrating. These challenges underscore the need for user-friendly interfaces and reliable technical support to optimise learning. Qualitative data also revealed the benefits and drawbacks of formative assessment. Participants valued timely feedback from teachers and peers, which improved course comprehension. Respondent 5 stated that regular feedback helped them adjust study strategies. Formative assessment promotes self-regulated learning and academic progress. Self-assessment was also key, with participants reflecting on their achievements and setting goals. Respondent 6 emphasised how self-assessment encouraged accountability and metacognition, supporting its role in independent learning.

Conclusion

This study highlights the effectiveness of blended learning in enhancing student autonomy in college English education. Using the MosoTeach platform and integrating quantitative and qualitative methods, the research demonstrates significant improvements in autonomous learning behaviours, engagement, and academic success compared to traditional teaching. The platform's interactive features, user-friendly design, and online-offline integration foster collaborative learning, active discussions, and enhanced learning satisfaction. Timely feedback from teachers and peers, alongside self-assessment, promotes reflection, goal-setting, and metacognitive development for professional success. However, technical issues and platform functionality challenges underscore the need for ongoing professional development and technological support for instructors. This study contributes to educational technology and student-centred learning, advocating for further research to explore long-term impacts, address technological constraints, and refine teaching practices to ensure quality, equity, and diversity in higher education.

Theoretical and Practical Implications

Combining online and in-person learning strategies to enhance student autonomy in college English education has significant implications for instructional design and pedagogical principles. Platforms like MosoTeach cater to diverse learning needs by integrating formative evaluation, collaborative projects, and interactive online courses, enabling teachers to enhance communication, critical thinking, and problem-solving skills. These approaches support academic achievement and deepen students' understanding of course content and its practical applications. By emphasising formative evaluation and self-regulated learning, the study underscores the importance of self-assessment and feedback in fostering autonomy. Teachers can guide students in setting goals, evaluating progress, and reflecting on outcomes, developing metacognitive skills vital for personal and professional growth. Modern blended learning environments, enriched with multimedia, simulations, and virtual collaboration tools, promote equity and accessibility in education. Digital tools help institutions overcome geographical barriers, provide high-quality content, and meet diverse learner needs, supporting academic success. This study advocates for continued research and investment in educational technology infrastructure, educator training, and evidence-based innovation to enhance teaching practices. Educational administrators should prioritise infrastructure, professional development, and technology integration to implement blended learning models effectively. Governments can further support innovation by fostering technology-enhanced learning environments. These efforts are critical for advancing educational equity, excellence, and student achievement in a globalised world.

Limitations and Future Direction

This study on promoting learner autonomy through blended learning in college English instruction offers valuable insights but is subject to certain limitations. The quasi-experimental design, while useful for comparing experimental and control group outcomes, may have overlooked confounding variables such as participants' technological proficiency, prior learning experiences, and individual student characteristics. Future research could enhance reliability and accuracy through randomised controlled trials. A further limitation is the study's limited generalisability due to its focus on a homogeneous sample of second-year students in a specialised college English context. Variations in educational environments, student attributes, and disciplinary settings may affect the applicability of findings to broader populations. Future research should examine diverse educational contexts and student groups to establish the transferability of integrated learning interventions across disciplines and levels. Additionally, the study's two-semester duration may not fully capture the long-term impact or sustainability of improved learner autonomy behaviours. Longitudinal studies tracking students' progress over extended periods are necessary to evaluate how integrated learning interventions influence academic performance, knowledge retention, and lifelong learning. While the study utilised quantitative and qualitative methods to explore learner autonomy, alternative mixed-methods approaches could provide a more nuanced understanding. Combining quantitative data on learning outcomes with qualitative insights into students' experiences and perceptions could offer a deeper understanding of how blended learning fosters autonomy. Technological and logistical challenges, such as platform usability and limited

technical support, were also identified. Collaborations with educational technology developers are essential to address these issues, enhancing platform design, user interfaces, and technical support for both students and educators.

To maximise the effectiveness of blended learning, ongoing innovation in instructional design and professional development is crucial. Educators should be trained in integrating technology effectively into teaching practices. Emerging technologies such as adaptive learning systems and artificial intelligence may provide personalised learning experiences and tailored instruction for individual learners. Comparative studies across diverse educational environments could identify optimal pedagogical strategies, technological tools, and instructional models to enhance academic achievement, learner autonomy, and engagement. Continued research into educational technology and learner-centred approaches is vital for advancing educational equity and quality in the digital age.

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