Digital Learning According to Blended Learning on Chinese Languages for Beginner Level in Primary School

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ABSTRACT
The purposes of this research were to: 1) develop and determine the efficiency of the digital learning according to blended learning on Chinese languages for beginner level in primary school, 2) compare the students' learning achievement test after using the digital learning according to blended learning on Chinese languages for beginner level in primary school, and 3) evaluate the students' satisfaction with the digital learning according to blended learning on Chinese languages for beginner level in primary school. The sample group selected via purposive sampling due to their affiliation with the digital learning according to blended learning on Chinese languages for beginner level in primary school 30 Grade 5 primary school were recruited. The research instruments used in the study were 1) the digital learning according to blended learning on Chinese languages for beginner level in primary school, 2) The Chinese language learning achievement tests (pre-test and post-test); and 3) The questionnaires on students' satisfaction. The statistics used in data analysis were E_1/E_2, mean, and data analysis methods comprised mean, standard deviation, percentage, coefficient of variation, and t-test dependent. The findings revealed that 1) The efficiency of the digital learning according to blended learning on Chinese languages for beginner level in Primary school was 82.07/81.67 which was higher than the criteria set. 2) The post-test score of the students who went through the instruction with digital learning according to blended learning on Chinese languages for beginner level in primary school was 81.67, SD. 3.73 which indicated a higher score than those in the pretest 40.80, SD. 5.38, and the t-test between the pre-test and post-test was 35.01 which showed a significant level at the .05, 3) The students' satisfaction toward the E-Learning platform in learning Chinese languages skills via blended earning received a high satisfaction level as a whole at the average of 4.49.
Keywords: digital learning, blended learning, chinese languages, beginner, primary school

INTRODUCTION

As Thailand's global impact expands, proficiency in various languages has emerged as a vital competitive asset for students. English functions as a global lingua franca, whereas Thai holds particular importance in Southeast Asia, particularly because to the strengthening economic relations between China and Thailand. For Thai students, Chinese languages fluency is a fundamental prerequisite in the market, although familiarity with Thai can facilitate career opportunities in Thailand and other Southeast Asian nations. An increasing number of companies regard multilingual proficiency as a vital factor in recruitment, especially in industries such as tourism, international trade, and diplomacy. Acquiring proficiency in Thai and Chines languages not only improves linguistic abilities but also cultivates a profound comprehension of the respective cultures. This cultural awareness improves students' cross-cultural communication skills, enabling them to adapt to and excel in varied cultural settings (Wei, L., &Wu, C, 2020). The Thai government is placing greater emphasis on foreign language instruction, especially at the fundamental level, with the prominence of the Chinese language continuing to increase. Concurrently, the advancement of the Belt and Road Initiative is elevating the study of Thai, as investments in pertinent courses and educational resources are progressively rising. The increasing tourism and cultural exchange between China and Thailand enables students proficient in Thai to enhance their participation in the cultural and economic contacts between the two nations. This not only facilitates personal growth but also fortifies the amicable relations between China and Thailand. Bilingual education, particularly in Thai and Chinese, is essential for Thai students within the context of globalisation and economic development. Effective bilingual education enables pupils to improve their linguistic skills, expand their viewpoints, and augment their future career competitiveness (Li, Y., 2022) Consequently, fostering the expansion of bilingual education in Thailand is crucial for both personal and national progress. Research indicates that bilingual education, especially in Chinese English, is proliferating in Thailand and is seen as advantageous for linguistic and cultural competence; nonetheless, its efficacy and execution encounter obstacles and necessitate additional empirical validation. Students find it challenging to comprehend the

economic and cultural advantages of studying Chinese, sometimes expressing trivial objectives such as communicating with non-Chines-speaking relatives and foreigners (Koh, S., Hoon, C., & Haji-Othman, N., 2020). In the context of education, Blended Learning refers to a paradigm that combines traditional classroom instruction with online classroom training. By utilizing online platforms for independent study and participation, students are able to receive direct teaching from teachers while they are in the classroom. Education in the modern era is significant because it gives students the opportunity to learn at their own pace and provides them with a personalized experience. The use of a variety of digital tools increases the level of student involvement and motivation. Utilizes cutting-edge technologies in order to prepare students for the careers they will pursue in the future. Several studies have demonstrated that Blended Learning is effective in enhancing both the retention of information and the application of skills. considers the diverse experiences and requirements of students, so enabling the creation of individualized educational opportunities (Xiong,Y.,&Wei,C., 2021). Helps pupils develop their capacity for self-management, which is essential in a setting that is constantly changing. It is becoming increasingly important in today's education system to use blended learning since it allows for the fulfillment of the personalized needs of students while simultaneously improving educational accomplishments. In the years to come, it will continue to play a crucial role in the field of education (Chen,H., 2022). When it comes to language instruction, modern education typically makes use of a considerable number of digital resources. Examples include the language learning platforms Duolingo and Babbel, which provide learners with gamified experiences to assist them in the acquisition of vocabulary and grammar. Coursera and edX are two examples of online services that offer language classes at the university level that include interactive content. Zoom and Microsoft teams are examples of platforms that make it possible for students and teachers to communicate and receive teaching online in real time. Study groups and the exchange of resources are both conducted on social media platforms such as Facebook and Reddit. Students can acquire linguistic competencies in a more effective manner because of the utilization of these tools, which enhance the interaction and flexibility component of language acquisition. In conclusion, blended learning helps Chinese students learn Thailand and Chinese while improving their language and cultural skills. Blended Learning lets students learn at their own pace and review and expand their information with online resources after class, meeting diverse learning needs. Through face-to-face coaching and online exercises, students may apply what they've learned in real life, enhancing their language skills. Students master digital tools and platforms through blended learning, preparing them for academic and professional success in the digital age. Online learning offers additional movies, audio, and interactive exercises to assist students grasp language and culture. Student cooperation through online conversations and group projects enhances social learning in this paradigm. Learning Thai and Chinese requires cultural awareness. Blended Learning helps pupils understand both languages' cultures through online materials and interaction. Students must self-regulate and monitor their learning progress in blended learning to develop (Graham, C.R., 2019).Traditional language instruction persists within contemporary educational frameworks. This methodology encounters numerous obstacles. Conventional pedagogy frequently employs a "one-size-fits-all" methodology, which fails to accommodate the diverse learning needs and paces of individual students, hence hindering certain learners from keeping pace with the course progression. In-person classroom instruction often restricts student connection and diminishes a sense of engagement, potentially resulting in reduced learning motivation. Numerous conventional pedagogical approaches inadequately leverage contemporary technology, restricting students' access to a variety of learning tools. Conventional pedagogy frequently emphasizes the memorization of grammar and vocabulary, neglecting the development of actual language application. Students may have a deficiency in confidence during authentic communication. Language acquisition encompasses more than merely the language itself. Conventional education frequently fails to thoroughly examine pertinent cultural contexts, hence impacting students' cross-cultural communication skills. The conventional assessment technique mostly depends on examinations and inadequately evaluates students' linguistic proficiency and practical application skills. In conventional classrooms, educators predominantly serve as the primary conveyors of knowledge, exhibiting a deficiency in flexibility and originality, which hampers the cultivation of students' independent learning capabilities. These obstacles compel the educational world to investigate more adaptable, interactive, and individualized pedagogical approaches, such as hybrid learning, to enhance the efficacy of language acquisition. Blended learning integrates online and in-person instruction, enabling students to progress at their own pace and according to their specific needs, so providing a more tailored educational experience. Digital platforms facilitate student involvement via discussion forums and collaborative activities, hence augmenting engagement and motivation. Blended Learning leverages digital tools and resources, such as videos, apps, and online courses, providing students with access to a variety of learning materials. Blended Learning prioritizes practical language application via interactive online activities and real-world experience, enhancing students' confidence in utilizing the language. Blended Learning frequently integrates cultural elements into its materials, facilitating students' comprehension of the cultural context behind the language and improving cross-cultural communication abilities. Blended Learning provides many assessment modalities, including online quizzes, self-assessments, and project-based evaluations, thereby offering a more holistic evaluation of students' language proficiency. In Blended Learning, educators assume the roles of facilitators and guides instead of exclusive knowledge producers, promoting student autonomy in their educational

journey. By tackling these problems, blended learning fosters a more adaptable and efficient educational setting, enhancing language acquisition and overall student performance (Li, Z,& Zhu, Y., 2021)

Despite substantial study on blended learning, there is a paucity of studies regarding its applicability in teaching Thai and Chinese to Thai students. This study examines the impact of digital learning elements in a blended learning framework on enhancing language acquisition among bilingual Chinese students. Consequently, academics investigate digital and hybrid learning on Thai and Chinese Language in Thailand. Due to shifts in globalization and the growing interdependence of language acquisition, the demand for foreign language proficiency has markedly risen. For Chinese students, proficiency in various languages, including Thai and Chinese, enhances academic, cultural, and professional prospects. Trends in digital learning has emerged as a crucial instrument in contemporary education, offering adaptable and accessible educational experiences. The implementation of digital learning platforms in Thailand has progressed swiftly, demonstrating the extensive incorporation of technology into the nation's educational framework. Hybrid education, blended learning, encompassing both online and in-person instruction, has gained recognition as an effective approach for language acquisition. This thesis analyzes the implementation of blended learning in instructing Thai and Chinese to Thai students, utilizing digital tools alongside conventional classroom methods. This study evaluates the efficacy of digital learning in a Blended Learning model for instructing Thai and Chinese to Thai students. The aim is to ascertain the benefits, obstacles, and optimal strategies for incorporating digital learning into language instruction in Thailand.

LITERATURE REVIEW

Blended Learning in Language Education
Blended learning, particularly for elementary school Chinese language instruction, is a promising approach for those starting Chinese language classes. Blended learning, which combines traditional in-person instruction with digital resources and aspects presented online, has evolved as a formidable paradigm in education in the modern era. Implementing this technique is especially advantageous in language instruction because it creates an environment that is adaptable, dynamic, and fascinating for learning, and it can fit a variety of learning styles. Using blended learning in the classroom to teach Chinese to primary school students provides several pedagogical benefits that improve language acquisition, cultural comprehension, and digital literacy.

 1. The combination of digital instruments and instructional methods in the classroom. A hybrid approach can enhance accessibility and enjoyment for young learners on their Chinese language journey. In a conventional blended learning classroom, students may utilize diverse online resources, including animated videos, interactive vocabulary games, stroke-order animations for Chinese characters, and digital flashcards, while engaging in teacher-led activities such as pronunciation practice, role-play, and storytelling—the role of digital tools in science teaching, comparing traditional methods with technology-enhanced methods. Secondary school interventions using digital simulations and interactive platforms improved academic achievement, student involvement, and comprehension of complex scientific concepts (Ardhita, I., & Khanafi, I., 2024). While learning a tonal language like Chinese, these digital tools offer visual and audible clues that are extremely helpful in learning the language. Character-writing programmes and stroke order animations allow students to practice writing with direction and fast feedback, improving their ability to recall information and hone their writing skills. Additionally, using digital resources in conjunction with more conventional instructional methods in the classroom is beneficial. When it comes to young students just starting on their journey with the Chinese language, the utilization of a hybrid approach has the potential to enhance both accessibility and enjoyment. Animated films, interactive vocabulary games, stroke-order animations for Chinese characters, and digital flashcards are some examples of online materials that students working in a traditional blended learning classroom may use. Furthermore, students have the opportunity to take part in activities that the instructor directs. These activities may include practicing pronunciation, role-playing, and telling stories. Using digital technologies in conjunction with more conventional instructional methods in the classroom can dramatically improve accessibility and enjoyment for young students, particularly those making their first attempts at learning a new language such as Chinese. A greater level of engagement, comprehension, and skill development can be achieved by utilizing hybrid approaches that integrate interactive digital resources with instructor-led activities. The advantages of using hybrid methods of instruction. digital resources such as animated films, interactive games, and digital flashcards make learning more dynamic and engaging, catching students' attention and pushing them to participate. This results in increased engagement and enjoyment. Learning outcomes That are improved, students who use digital resources typically demonstrate a larger improvement in their academic achievement than students who only use traditional means. For instance, digital tools have increased advances in numerical and scientific comprehension and test results. Enhanced accessibility, students can learn quickly and have flexible access to learning materials thanks to the availability of online resources and digital platforms. This supports a wide range of learning demands. Digital tools and activities that are useful benefits of using digital tools and activities for students. Animated videos and interactive games

reference this. Increase participation and give physical form to less tangible ideas, such as Flashcards and animations, according to stroke order. Encourage the learning of linguistic skills through memorization and practice the platforms for online education. Provide a wealth of resources and allow for independent study. Pronunciation, role-playing by the instructor, providing comments, and encouraging speaking reinforce skills. The use of technology in classrooms by 65 seventh- to 10th-grade Mathematics and English Language Arts teachers across six states. It identifies six major digital instructional strategies and 16 related tactics, and their relationship with the opportunity to learn. The study highlights the importance of understanding the relationship between technology use and learning opportunities. The study explores a digital pedagogical strategy for teaching Social Sciences, involving data collection from educational authorities, teachers, and students. The strategy uses various digital tools for communication, content generation, assessment, and dynamic presentations. A comparative study validates the strategy's innovation, relevance, and improvement in student learning (Tomala, C., Intriago, J., & Campuzano, M., 2024).

2. Personalised instructional methods and personalised reinforcement for every student. Students can advance at their own pace when they participate in blended learning. People starting in Chinese may have trouble pronouncing novel words, varying their tones, and communicating using characters. Through digital platforms, students can review classes, repeatedly listen to pronunciations, and revisit complex subjects without feeling pressured. Educators can utilize Learning Management Systems (LMS) to monitor students' advancement, give tailored homework, and deliver specific feedback. This individualised training ensures that students build a solid foundation in Chinese, which is especially important at the beginner level, where consistent practice is essential. A pre-test, post-test, experimental, randomised control group design was designed to investigate the impact of a blended learning environment on the English language acquisition of Chinese adult learners. A blended learning environment was established during the research project's preliminary phase. This environment comprised three components: traditional classroom-based learning, online learning based on tasks, and peer learning based on groups. Then, the research selected two classes at random, one as the Experimental Class (EC) and the other as the Control Class (CC), both had English skills that were not significantly different. A single instructor was responsible for instructing both the EC and the CC over the subsequent term, using either a blended or a traditional learning environment. After the semester, the research investigated the students' English skills in the aforementioned classes. The results of this study showed that students in English as a second language (EC) did much better than students in Chinese as a second language (CC), particularly in terms of their ability to write in English. Specifically, the findings suggest that a mixed learning environment can potentially enhance the English language skills of Chinese adult learners, particularly their practical English abilities. The combination of online and offline components in blended education has become a focal point in teaching Chinese as a foreign language. This came about due to technical breakthroughs such as "Internet Plus," which have made it possible to combine online and offline components. This study first aims to summarise the present application status of blended teaching in teaching Chinese as a foreign language and then to analyse three common concerns in this context. This study adopts a literature analysis approach. The following section presents recommendations for applying blended teaching in teaching Chinese as a foreign language. These recommendations are based on the viewpoints of instructional design models, the implementation of teaching techniques, and the evaluation of teaching effectiveness. The final topic of discussion is the potential development prospects of blended education in the context of teaching Chinese to students who are teaching it as a foreign language. With the increasing globalisation and the integration of blended learning models, academic English writing has become a critical skill introduced at the high school level. This study investigates how Chinese international high school students develop and apply effective English language learning strategies to address the specific challenges of academic English writing in a blended learning environment. Blended learning environments combine offline English as a Foreign Language (EFL) instruction with online English as a Second Language (ESL) instruction. A qualitative research design was utilized to conduct this study, and three individuals who participated in this unique blended learning environment were chosen as specific instances. Interviews with a semi-structured format, student learning diaries, and classroom observations were the methods that enabled the collection of data. According to the findings, students in this unique blended learning environment apply various tactics to solve challenges. These strategies include cognitive, metacognitive, and social strategies simultaneously. In addition to emphasising the efficacy of blended learning in assisting students with their academic writing, the study emphasises the significance of combining traditional teaching techniques with technological advancements. The insights presented here provide significant information for educators in the process of improving teaching practices and for policymakers in developing supportive educational frameworks (Wei, Y., Sulaiman, N., & Ismail, H., 2024).

3.Promoting independent and cooperative learning. Blended learning fosters learner autonomy by motivating students to assume responsibility for their own advancement. For example, online modules may encompass brief exams, vocabulary enhancement exercises, or language games that students undertake autonomously. Blended environments facilitate collaborative learning via virtual group work, online chats, or paired speaking assignments, thereby enhancing students' communicative competence in authentic circumstances. Encourage the development of instructional approaches that are both independent and collaborative. The purpose

of blended learning is to instill a sense of responsibility in students, so that they can take charge of their own development, which in turn allows for the development of learner autonomy. It is possible for online modules to consist of, for example, brief examinations, exercises meant to develop vocabulary, or language games that students are responsible for completing on their own. Blended environments make it feasible for students to engage in collaborative learning through activities such as online chats, virtual group projects, or partnered speaking assignments. This gives students the opportunity to improve their ability to communicate effectively in scenarios that are based in the real world. Blended learning environments are meant to encourage both independent and cooperative learning, so fostering students' autonomy while simultaneously improving their capacity to work together in a group setting. The integration of various approaches leads to a number of results, including improvements in academic achievement, changes in motivation, and enhancements in social skills. Learner autonomy and independence also. Independence and self-determination: Independent learning is a method of education that encourages students to take responsibility for their own growth, which in turn assists students in developing skills in critical thinking and self-reliance. Through the utilisation of activities such as self-paced online modules, quizzes, and vocabulary exercises, it is possible to efficiently grow these abilities at one's own pace. Students who participate in independent learning frequently exhibit increased motivation and the ability to govern their own learning processes. This is a significant step in the development of abilities. The advantages of participating in cooperative learning, both academically and socially, are as follows Cooperative learning, in which students work together in smaller groups, consistently results in academic success that is either equal to or higher than that of the traditional style of education. This is the case when compared to the traditional method of education. Furthermore, it improves the quality of one's self-esteem, as well as the quality of one's connections with other people. When students take part in activities that include persistent cooperative learning at school, they experience an increase in their intrinsic motivation, satisfaction, and sense of relatedness. Students have reported having great experiences, such as working together, experiencing something new, and having fun; however, it is possible that some students may also experience disappointment if the dynamics of the group are not entirely beneficial. The benefits of cooperative learning are demonstrated across all age groups, subject areas, and types of activities, including problem-solving and memory abilities. This is in addition to the fact that cooperative learning is widely applicable (Abramczyk, A., & Jurkowski, S., 2020).

Cultural context and multimedia content. Instructing in the Chinese language necessitates the incorporation of cultural education. Digital tools provide virtual tours of Chinese cities, footage of traditional events, and narratives that immerse pupils in the cultural richness of the language. These immersive encounters are challenging to reproduce alone inside a conventional classroom setting. Incorporating these cultural components into the language curriculum enables educators to enhance students' interest and motivation, while simultaneously enriching their international comprehension.

4.There are several challenges and considerations. On the other hand, despite the apparent benefits of blended learning, its effectiveness in teaching Chinese to novices is contingent on the fact that it is carried out with great care. Educators must obtain training in the appropriate utilization of digital resources, and the instructional materials they employ should be developmentally appropriate and tied to educational goals. Preventing digital inequities requires educational institutions to ensure all students can access electronic devices and internet connectivity. There is an innovative and practical approach to teaching Chinese to students who are just starting in basic education, and that approach is blended learning. In a dynamic, individualised, and culturally rich context, it encourages the development of language skills by combining the benefits of digital learning with traditional teaching methods. Through rigorous preparation and ongoing help, this system can significantly enhance the earliest stages of teaching the Chinese language and foster a long-lasting excitement for language acquisition. The expansion of Thailand's comprehensive national strength has resulted in an increasing number of individuals from other countries studying Chinese. This paper incorporates technology by integrating the flipped classroom and blended learning into the teaching of Chinese as a foreign language (TCFL). The goal of this paper is to develop teaching Chinese as a foreign language (TCFL) and add more energy to this relatively new field of study. There are clear implementation strategies for the flipped classroom, which can effectively extend the amount of time students spend learning. Combining more traditional Chinese teaching models, such as the 3P teaching model and task-based language instruction, with the guiding principle of blended learning, which is to strike a balance between teaching and learning, and based on an analysis of the subject's adaptability, the paper integrates these two approaches. It is common practice to implement the blended learning paradigm, which is based on the flipped classroom, when instructing students in Chinese as a foreign language. It is a demonstration of the notion of Technological Pedagogical Content Knowledge (TPACK) in the process of integrating technology into topic teaching that the implementation of the new teaching model represents the deep integration of teaching content, teaching techniques, and technical assistance. It is evident that the benefits brought about by the creation of teaching models under technological integration are evident, and in this day and age, it is plain to see that the integration of technology and teaching exploration is the required approach to optimise the teaching process. It is an invention of TCFL that is worth promoting since it is true and effective, and the classroom feedback is positive.

The deployment of this model in the classroom of TCFL at several universities demonstrates that it is true and successful. There are a number of obstacles and different things to think about. The flip side of the coin, in spite of the apparent benefit (Hu, Z., Zhang, Y., & Dong, D., 2024).

METHODOLOGY
Purpose of the Study
The objectives of the study are as follows:

1. To investigate the efficiency of digital learning according to blended learning on Chinese languages for beginner level in primary school.

2. To compare students' achievements before and after learning through digital learning according to blended learning on Chinese languages for beginner level in primary school.

3. To examine students' satisfaction with of using digital learning according to blended learning on Chinese languages for beginner level in primary school.

Research Questions and Hypothesis

1. the digital learning according to blended learning on Chinese languages for beginner level in primary school, was posttest higher that pretest after study form the digital learning according to blended learning on Chinese languages for beginner level in primary school, enhances the learning achievement which is different significantly on statistics at the level .05.

2. The satisfaction of the students towards the digital learning according to blended learning on Chinese languages for beginner level in primary school, enhances the learning achievement of primary school is in average of 4.50, considerable level.

Conceptual Framework
Conceptual framework of the effect of using the digital learning according to digital learning according to blended learning on Chinese languages for beginner level in primary school.

Independent variables	Key dependent variables affected	Description of the relationship
Digital learning modes	Language ability, academic performance, learning participation, learning motivation & attitudes.	Different digital platforms and online tools directly affect knowledge acquisition, skill training, and the level of student engagement.
Blended Learning Strategies	Language ability, academic performance, intercultural communicative competence	The effective integration of online and offline teaching methods enhances language input/output as well as cultural understanding.
Use of digital learning tools	Language ability, academic performance, learning participation, cognitive load	Multimedia resources and AI-assisted tools can improve the efficiency of information delivery but may also increase students' cognitive load.
Learner characteristics	Academic performance, learning motivation & attitudes, learning participation.	Students' learning styles, motivation, and digital literacy influence how effectively they adapt to and benefit from blended learning environments.
Language complexity	Language ability, cognitive load	The differences in phonetics, writing systems, and grammatical structures between Chinese and Thai languages affect learning difficulty and the cognitive processing required.
Learning environment	Language ability, academic performance, learning participation, intercultural communicative competence.	Factors such as teacher technological proficiency, classroom interaction, and home support collectively determine teaching effectiveness and the overall learning experience.

Figure 1: Conceptual framework of the digital learning according to Blended learning on Chinese languages for beginner level in primary school.

Research of Methodology

1. The research methods used in this paper include literature analysis, observation, interview, and field research. Mainly based on article analysis and practical teaching experience, this paper explores the value and significance of the digital learning according to Blended Learning on Chinese languages for beginner level in Primary school. The population, the population of this study was 120 students in the academic year 2024 of Primary school. The sample group selected via purposive sampling due to their affiliation with the digital learning according to blended learning on Chinese languages for beginner level in primary school 30 Grade 5 primary school were recruited in Thailand during the school year 2024. The sample group selected via purposive sampling due to their affiliation with the digital learning according to blended learning on Chinese languages for beginner level in primary school.

2. The research instruments consisted of (1) the effect of using the digital learning according to blended learning on Chinese languages for beginner level in Primary school, and (2) the content and media quality questionnaire for the digital learning according to Blended Learning on Chinese languages for beginner level in Primary school., and (3) learning achievement questionnaire of students between pretest and post-test scores using the digital learning according to blended learning on Chinese languages for beginner level in primary school., and (4) satisfaction questionnaires to assess the student's level of the digital learning according to blended learning on Chinese languages for beginner level in primary school.

3. The data were analyzed using E1/E2, mean, standard deviation, and t-test. Independent variables are the digital learning according to blended learning on Chinese languages for beginner level in primary school. dependent variables are (1) the learning achievement of students towards the digital learning according to blended learning on Chinese languages for beginner level in primary school. Content of the integration of the digital learning according to blended learning on Chinese languages for beginner level in primary school not only enhances the theoretical framework but also propels the further development of information technology. By investigating this amalgamation, we gain a better understanding of the practical application of the digital learning according to blended learning on Chinese languages for beginner level in primary school, as well as its ongoing development and changes. This also helps to identify any critical issues in current information teaching and to summarize teaching experiences, mitigating the shortcomings of traditional teaching methods while exploring the teaching theory within the context of information technology. As such, this enriches and enhances the theory of education and teaching informatization, ultimately leading to an effective improvement in the digital learning according to blended learning on Chinese language scores performance. Data amassment; the researcher experimented with an experiment was one group pretest and post-test test scores design; the population was selected by purposive sampling. The measure and statistics and assessment are the digital learning according to blended learning on Chinese languages for beginner level in primary school subject, pretest-posttest test scores, questionnaire of satisfying data were E1/E2, mean, standard definition, t-tests the dependent sample statistics. Amassment statistics data after the experiment and calculate (O1) and (O2) for the mean ($\bar{x}$) and the digital learning according to blended learning on Chinese languages for beginner level in primary school to enhance learning achievement of students to learn by themselves. (1) a request for cooperation with 120 students from Primary school., (2) plan to use the digital learning according to Blended Learning on Chinese languages for beginner level in primary school., and (3) process learning by using the digital learning according to blended learning on Chinese languages for beginner level in primary school; there are three steps: the goal of learning, creative thinking, construction knowledge; pretest; post-test; assess students' satisfaction; check pretest and post-test.

4. Data analysis; the statistics used to analyze data. (1) To The efficiency of using the digital learning according to blended learning on Chinese languages for beginner level in primary school according to criteria experiment by E1/E2.,(2) Compare the learning achievement of students using digital learning according to blended learning on Chinese languages for beginner level in primary school in teaching Chinese subjects between pretest and post-test by t-test., and (3) To assess the students' satisfaction through the digital learning according to blended learning on Chinese languages for beginner level in primary school by mean and standard deviation.

Definition Perspective

The study discusses the digital learning according to digital learning and blended learning on Thai and Chinese languages for Chinese students in Thailand August-July 2024. Computer networks and software store, transfer and apply data. Current research outputs and accomplishments in a sector or subject are compiled and analyzed to determine research status at home and abroad. Theoretical foundations guide field research and practice. It contains several theoretical perspectives and models established by researchers and practitioners via significant research. the digital learning according to digital learning and blended learning on Thai and Chinese languages for Chinese students in Thailand, refers to the technologies and tools involved in processing, storing, transmitting, and managing information. These technologies include computer science and software development, hardware devices, network communications, and technical applications related to information. It plays a vital role in modern society. It covers a range of fields, including but not limited to the following aspects (1) computer science, including programming, algorithm design, data structure, artificial intelligence, computer graphics, etc., dedicated to the

development and improvement of computer software and hardware.,(2) network communication; involves the construction, management, and maintenance of computer networks, including the Internet, local area network, wide area network, etc., to achieve the transmission and sharing of the digital learning according to digital learning and blended learning on Thai and Chinese languages for Chinese students in Thailand between different devices., (3) database management; this field focuses on how to organize, store, and manage large amounts of data, ensuring its security and accessibility., (4) software development; develop applications, mobile applications, websites, etc., to meet the needs of people in different fields., (5) information security; Focuses on protecting information from unauthorized access, tampering and destruction, including network security, data encryption, etc., (6) hardware technology; includes the design, manufacture, and maintenance of computer hardware components, e.g., processors, memory, storage devices, etc., (7) human-computer interaction; creating user-friendly interfaces for computer systems and applications., and (8) digital transformation, helping organizations and enterprises use information technology to optimize business processes and improve efficiency to meet the requirements of modern digitalization.

The ADDIE model is a widely used instructional design framework that stands for Analysis, Design, Development, Implementation, and Evaluation. It provides a structured approach to creating effective educational materials and courses. When applying the ADDIE model of the digital learning according to blended learning on Chinese languages for beginner level in primary school, follow these steps (1) analysis, the analysis identified the specific needs and objectives of the digital learning according to blended learning on Chinese languages for beginner level in primary school teachers related to IT teaching and learning for the Chinese languages for beginner level in primary school e subject. Understand existing knowledge and skills. Identify the most relevant and useful tools, technologies, and IT resources to enhance Chines language teaching., (2) design a comprehensive plan that outlines the overall structure of the digital learning according to blended learning on Chinese languages for beginner level in Primary school subject. Define the scope, learning objectives, and expected outcomes. Decide on the appropriate instructional strategies, methods, and content that align with the needs and goals of the teachers. create a syllabus or curriculum outline that outlines the topics to be covered and the sequence of instruction., (3) development of teaching materials and real resources, creating presentations, videos, interactive events, online modules, and other content. Choose the IT tools and platforms to use to deliver recommendations, such as learning management systems. Communication tools and collaboration platform., (4) implementation, delivering IT guidance to the digital learning according to blended learning on Chinese languages for beginner level in Primary school professors, hosting workshops, training, and online webinars. Providing access to online resources and the support and guidance needed to effectively use IT tools and technologies in teaching English., and (5) evaluation; IT teaching affects Thai teacher tech integration. Assess and improve help the digital learning according to blended learning on Chinese languages for beginner level in primary school instructors customize courses. Technology-based Chinese instruction boosts teachers' IT skills and confidence. The Chinese subject encompasses teaching content and objectives centered around the Chinese language. Typically, the subject covers listening, speaking, reading, writing, comprehension, and communication skills. It aims to enhance students' Chinese language proficiency, including vocabulary, grammar, and pronunciation. In the education system, Chinese is taught from primary school, with the teaching objectives and content varying according to the student's age and learning stage. Chinese-related courses are also available at the university level to develop students' intercultural communication skills and professional Chinese proficiency. Watsmuharatsadonjarean School is a primary school located in Thanyaburi district, Pathum Thani province, Thailand. play active roles in school management and community service. They assume leadership positions in organizing various educational activities, shoulder social responsibilities, and make valuable contributions to the school's development and the local society's prosperity.

Significance of the Study
The ADDIE methodology is being utilized in teaching Chinese to beginners, combining traditional methods with big data analysis. This approach offers benefits like online collaboration, multimedia learning, and virtual practical experiences, enhancing teaching efficacy and addressing foreign language education issues.

Research Result
Blended learning is a digital approach used in primary schools to teach Chinese languages to beginner level students. This method is effective in improving learning achievement and satisfaction among students. The study compares pre-test and post-test scores, highlighting the effectiveness of blended learning in teaching Chinese languages.

Table 1. Results of evaluation efficiency of digital learning according to blended learning on Chinese languages for beginner level in primary school.

Items	n	$\bar{x}$	Percentage	Standard	E1/E2
Ongoing score	100	86.10	86.10	80	82.40
Post-test score	20	16.22	81.33	80	81.33

From Table 1, A substantial improvement in Chinese languages learning in primary school was observed, with an average mean score of 82.40 and 81.33 in ongoing and post-tests. This online learning approach, based on 80/80 criteria, was evaluated by three content experts using a 5-point rating scale.

Table 2. Results of evaluation of investigate the efficiency of digital learning according to blended learning on Chinese languages for beginner level in primary school by three content experts

Evaluation Items	$\bar{x}$	SD.	Result Interpretation
1. Consistency between content and learning objectives on Chinese languages.	5	0.00	Excellent
2. The content on Chinese languages is interesting.	4.5	0.00	Excellent
3. Content on Chinese languages and activities are appropriate for learners.	4.7	0.58	Excellent
4. The amount of content on Chinese languages in each activity is appropriate.	4.55	0.58	Excellent
5. Content on Chinese languages sorting is appropriate.	4.38	0.58	Excellent
6. Content on Chinese languages accuracy.	5.00	0.00	Excellent
7. Activities are consistent with the content on Chinese languages.	5.00	0.00	Excellent
9. There is a presentation format to stimulate the learners' interest.	4.67	0.58	Excellent
10. The overview of the content on Chinese languages is complete.	5.00	0.00	Excellent
Total	4.78	0.23	Excellent

From Table 2, three content experts evaluated the quality of digital learning on Chinese languages for beginner level in primary school. The overall quality was excellent, with consistency between content and learning objectives, interesting content, accuracy, appropriate Chinese subject teaching, activities consistent with Chinese languages, and a complete overview. The media experts used a 5-point rating scale to represent their opinions on the content.

Table 3 Results of evaluation of digital learning according to blended learning on Chinese languages for beginner level in primary school from by three media experts.

Evaluation Items	$\bar{x}$	SD.	Result Interpretation
1. Learning through digital learning according to blended learning on Chinese languages for beginner level in primary school subject easy to understand.	4.85	0.58	Excellent
2. The sequence of activities and content on Chinese languages is appropriate.	4.53	0.58	Good
3. Easy to use, uncomplicated.	4.67	0.58	Excellent
4. The images are consistent with the content on Chinese languages.	4.33	0.58	Good
5. The images convey the meaning clearly.	4.42	0.58	Good
6. The activities are appropriate for the learners.	4.00	0.00	Good
7. Interesting content on Chinese languages.	4.64	0.58	Good
8. Interest in learning.	4.33	0.58	Good
9. Makes it possible to understand the content on Chinese languages more.	4.33	0.58	Good
10. The details are clear and easy to understand.	4.85	0.58	Excellent
Total	4.50	0.58	Good

From Table 3. the results of the media quality assessment of the digital learning according to blended learning on Chinese languages for beginner level in primary school, evaluated by three media experts. The overall quality was excellent level ($\bar{x}$=4.50, SD. = 0.58). When considering each item, it was found that learning through digital learning according to blended learning on Chinese languages for beginner level in primary school is easy to understand, easy to use, uncomplicated and the details are clear and easy to understand were excellent level ($\bar{x}$= 4.85, SD. = 0.58), respectively. Compare students'achievements between before and after learning through digital learning according to blended learning on Chinese languages for beginner level in primary school. By completing the tests ,students' achievements between before and after digital learning according to blended learning on Chinese languages for beginner level in primary school, which was consistent with objective 2, illustrating the results of analysis as shown in Table 4.

Table 4 Comparison of average score before and after of the students using the digital learning according to blended learning on Chinese languages for beginner level in primary school.

Items	n	$\bar{x}$	SD.	df	t-test	Sig. (2-tailed)
Pre-test	30	8.80	2.33	29	20.86	0.05
Post-test	30	16.27	1.48			

**p< .05

From Table 4, blended earning on Chinese languages significantly improved beginner level students' learning achievement in primary school. The digital learning according to blended learning on Chinese languages for beginner level in primary school significantly improved performance, resulting in a high post-test score of 16.27 and a statistically significant difference of 20.86.

Table 5. Result of evaluation of satisfaction with digital learning according to blended learning on Chinese languages for beginner level in primary school.

Evaluation Items	$\bar{x}$	SD.	Result Interpretation
1. Thai teaching in digital learning according to blended learning on Chinese languages for beginner level in primary school can be personalized learning.	4.40	0.51	Strongly Agree
2.Thai teaching in digital learning according to blended learning on Chinese languages can get rich learning resources.	4.60	0.50	Strongly Agree
3. Thai teaching can be guided by digital learning according to blended learning on Chinese languages.	4.50	0.51	Strongly Agree
4. Thai teaching in digital learning according to blended learning on Chinese languages can be collaborative and communicative.	4.37	0.51	Agree
5. Digital learning according to blended learning on Chinese languages teaching allows for immediate feedback and evaluation.	4.53	0.51	Strongly Agree
6.Thai teaching in digital learning according to blended learning on Thai languages can get multimedia teaching tools.	4.50	0.51	Strongly Agree
7.Teaching Thai in digital learning according to blended learning on Thai languages can have to learn management and tracking.	4.53	0.51	Strongly Agree
8. Thai teaching in digital learning according to blended learning on Thai languages can be innovative teaching methods.	4.67	0.48	Strongly Agree
9. Thai teaching in digital learning according to blended learning on Thai languages can be intercultural teaching.	4.43	0.50	Agree
10.Thai teaching in digital learning according to blended learning on Chinese languages can be rethought and improved.	4.57	0.50	Strongly Agree
Total	**4.51**	**0.50**	**Strongly Agree**

From Table 5 the results of evaluation of students' satisfaction with digital learning according to blended learning on Chinese languages for beginner level in primary school by 30 students. The overall students' satisfaction was

strongly agree level ($\bar{x}$=4.51, SD. = 0.50). When considering each item, it was found that Thai teaching in digital learning according to blended learning on Chinese languages for beginner level in primary school can be innovative teaching methods was strongly agree level ($\bar{x}$= 4.67, SD. = 0.48) and .Thai teaching in digital learning according to blended learning on Chinese languages for beginner level in primary school can get rich learning resources was strongly agree level ($\bar{x}$= 4.60, SD. = 0.50), respectively. The study evaluated students' satisfaction with blended learning for Chinese languages at beginner level in primary school. The results showed that Chinese teaching in digital learning can be innovative and provide rich learning resources, enhancing students' understanding of Chinese languages.

Independent variables	Dependent variables affected	Description of the relationship
Digital learning modes	Language ability, Academic performance, Learning participation, Learning motivation, attitudes	Different digital platforms and online tools have a significant impact on knowledge acquisition, skill development, and student engagement levels.
Blended learning strategies	Language ability, Academic performance, Intercultural communicative competence	The effective integration of online and offline teaching methods enhances both language input and output, as well as cultural understanding.
Use of digital learning tools	Language ability, Academic performance, Learning participation, Cognitive load	Multimedia resources and AI-assisted tools can improve the efficiency of information delivery but may also increase students' cognitive load.
Learner characteristics	Academic performance, Learning motivation and attitudes, Learning participation	Students learning styles, motivation, and digital literacy influence how effectively they adapt to and benefit from blended learning environments
Language complexity	Language ability, Cognitive load	The differences in phonetics, writing systems, and grammatical structures between Chinese and Tai languages affect learning difficulty and the cognitive processing required.
Learning environment	Language ability, Academic performance, Learning participation, Intercultural communicative competence	Factors such as teaching technological proficiency, classroom interaction, and home support collectively determine the effectiveness of teaching and the overall learning experience.

Figure 2 Conceptual framework of digital learning and blended learning on Thai and Chinese languages for Thai students in Thailand.

CONCLUSION AND DISCUSSION
Conclusion
The study aimed to improve Chinese language proficiency in Grade 5 students in primary school by evaluating the efficiency of blended learning in Chinese languages. The research used a sample of 30 Grade 5 primary school students, including an e-learning module, Chinese language achievement tests, and questionnaires to assess students' satisfaction with the digital learning approach. The findings suggest that blended learning can enhance students' learning outcomes and satisfaction in learning Chinese languages. Conceptual framework of the effect of using digital learning and blended learning on Thai and Chinese languages for Thai students in Thailand.

Face-to-Face Learning   Online Learning   Blended Learning

Figure 2: Digital learning according to blended-learning teaching and learning models on Chinese languages for beginner level in Primary school

Discussion
The research explores the integration of digital learning in Chinese language instruction for beginner-level students in primary schools. It identifies a framework using an ICT platform for beginner Chinese languages. The study

evaluates student satisfaction and effectiveness, revealing that blended learning improves Chinese proficiency among fifth-grade students. However, the lack of digital learning in introductory courses leads to reduced motivation.

The findings revealed that 1) the efficiency of the digital learning according to blended learning on Chinese languages for beginner level in primary school was 82.07/81.67 which was higher than the criteria set., 2) the post-test score of the students who went through the instruction with digital learning according to blended learning on Chinese languages for beginner level in primary school was 81.67, SD. 3.73 which indicated a higher score than those in the pretest 40.80, SD. 5.38, and the t-test between the pre-test and post-test was 35.01 which showed a significant level at the .05, and 3) the students' satisfaction toward the digital learning according to blended learning on Chinese languages for beginner level in primary school in learning Chinese language skills via blended learning received a high satisfaction level as a whole at the average of 4.49.This aligns with the research objectives and hypotheses that elucidate the research outcomes as follows utilising the digital learning framework for blended learning in Chinese language for beginners in primary education to enhance Chinese proficiency among fifth-grade students will transform classroom dynamics, in alignment with the study's aims. The implementation of digital learning via blended learning for introductory Chinese language instruction in primary schools improves students' understanding of lesson content with greater ease and independence. The digital learning framework for blended learning in Chinese language for beginners in primary education offers explicit and concise instructions for achieving proficiency in each session. It is also invigorating for pupils and fosters heightened participation in academic pursuits. The absence of digital learning in blended learning for beginner Chinese language courses in primary schools results in diminished student motivation, due to the unengaging and tedious nature of course book content, corroborated by survey results highlighting challenges faced by students learning Chinese. The efficacy of employing digital learning through blended learning for Chinese language instruction at the introductory level in primary schools to enhance Chinese proficiency among students has a coefficient of 80/80.

Recommendation
The study investigates the development of a digital learning framework for blended Chinese language instruction in primary education for Grade 5 students. The framework aims to improve Chinese proficiency among students by providing clear guidelines and promoting engagement in educational activities. The study found that the framework effectively enhances students' understanding of lesson content and increases their motivation. The students demonstrated curiosity, involvement, and support in using the platform for educational purposes. The implementation of the framework also improved Chinese language skills for fifth-grade students, with an average pre-test score of 40.80 percent and a standard deviation of 5.38. The students expressed high satisfaction with the e-learning platform, citing engaging learning activities that combined knowledge acquisition with entertainment. The learning process for 5 Grade Chinese language learners can be enhanced through an e-learning platform, promoting a relaxed learning environment and enhancing student engagement. This approach, unlike traditional instruction, encourages collaborative learning among students. The pedagogical framework of blended learning principles and e-learning platforms can be implemented across various educational contexts, catering to diverse student demographics. However, educators must ensure internet accessibility and provide necessary computer skills for students. Further research is needed to evaluate the efficacy of blended learning methodologies and compare them with alternative curriculum standards.

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