Research on the Problems and Development of Micro-learning in English Vocabulary Curriculum

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ARTICLE INFO	ABSTRACT
	This study focuses on recognizing the difficulties and considering potential solutions associated with integrating micro learning into the teaching of English vocabulary. The necessity for efficient vocabulary acquisition strategies is one of the major issues this study attempts to solve. For language proficiency, developing a strong vocabulary is essential, but conventional approaches frequently rely on rote memorization and lengthy lists of terms. The study aims to investigate the relationship between teaching competence and awareness, students' learning experience, curriculum development, and English language proficiency, with a specific focus on the role of self-determination theory in the development of effective micro-learning models. This research study explores the problems and development models of micro-learning in English vocabulary curriculum, focusing on 280 regular English teachers and 4 English professors in China. The study employed a survey questionnaire and interviews to collect data from the participating teachers, which was then analyzed using descriptive statistics and structural equation modeling. The study's findings revealed a strong connection between teacher awareness and competency, student learning, and curriculum development. The study also discovered that the association between students' learning experiences and curricular development was mediated by English language proficiency. The study also demonstrated how self-determination theory, which emphasizes the need for autonomy, motivation, and a positive learning experience, is involved in the creation of successful micro-learning models. **Keywords:** Teaching Competence and Awareness, Attitude and Personal Feelings, Language Improvement and Course Satisfaction, Students Learning Experience, English Language Proficiency.

INTRODUCTION

Micro learning has acquired popularity as a potential educational strategy recently, particularly in the field of language learning. Micro learning has specifically demonstrated promise in resolving vocabulary acquisition issues in the context of English language teaching (Romijn, Slot, & Leseman, 2021). From an educational standpoint, the goal of this study is to examine the difficulties and the growth of micro learning in the English vocabulary curriculum. Teachers and curriculum designers can use micro learning to improve language learning experiences and outcomes by recognizing the issues and potential fixes (Sobaih, Salem, Hasanein, & Elnasr, 2021). Micro-learning has become an essential tool for improving the teaching and learning process in English language education (De Wilde, Brysbaert, & Eyckmans, 2020). Nevertheless, despite the advantages of micro-learning, there are several issues with its application and efficacy in the English vocabulary curriculum (Akhmetshin et al., 2019). Delivering learners with brief, concentrated knowledge bursts via digital platforms like laptops, tablets, and smartphones is known as micro-learning. Because of its adaptability and accessibility, this method has grown in popularity in China, especially among students (Romijn et al., 2021). Many universities and schools in China have started using micro-learning as a way to enhance conventional classroom training in recent years (De Wilde et al., 2020). Micro-learning helps students learn more quickly and simply by giving them information in manageable chunks. Also, it gives students the freedom to study when and how they want, which is very useful for

individuals with hectic schedules or who are unable to attend normal classes (Sobaih et al., 2021).

Micro-learning elements include teaching competence and awareness, language improvement and course satisfaction and attitude and personal feelings (Tsay, Kofinas, & Luo, 2018). Teaching competence and awareness are critical components of micro-learning, as they involve developing the skills and knowledge necessary for effective teaching (Maqableh & Alia, 2021). This includes planning and delivering effective lessons, managing the classroom environment, and evaluating student learning outcomes. As it is imperative for teachers to possess a good command of the language they are teaching, language growth is, therefore, a crucial component of micro-learning (Zhang, Lai, B. Wang, & Z. Wang, 2019). For effective instruction, this entails enhancing vocabulary, grammar, pronunciation, and other language abilities. Creating a welcoming and encouraging learning environment that inspires students to study and accomplish their objectives is a key component of course satisfaction and attitude. This entails establishing a rapport with pupils, offering insightful criticism, and providing opportunities for participation and interaction. Personal feelings and attitudes towards teaching are also critical elements of micro-learning in education. Teachers who have a positive and reflective mindset towards teaching are better able to identify areas for improvement and make necessary changes to enhance the learning experience for their students (Ma, Stahl, & Knotts, 2018).

In order to improve the learning process and encourage student engagement, emotional support during micro learning can be quite helpful. Even while the majority of micro learning focuses on providing quick, bite-sized knowledge, emotional support shouldn't be overlooked. The student learning experience is a critical aspect of education that focuses on creating an engaging and effective learning environment for students (Syaharuddin, Mutiani, Handy, Abbas, & Jumriani, 2021). It includes a variety of elements that affect how students engage with the curriculum, such as instructional strategies, course material, the learning environment in the classroom, and student support services (Maqableh & Alia, 2021). A favorable learning environment for pupils is mostly a result of effective teaching techniques (Zhu, Zhang, Au, & Yates, 2020). The importance of English language proficiency extends beyond communication skills. It is also a significant factor in education, employment, and social mobility (Sinaga & Pustika, 2021). Overall, as teachers work to give students engaging and effective learning opportunities, micro-learning has grown to be a crucial tool in China. Its popularity is anticipated to continue to expand in the coming years, as more students and teachers become familiar with this technique and its numerous benefits (Syaharuddin et al., 2021).

Simplifying complicated ideas into manageable bits for pupils to understand encourages active learning at the student level. Because students can finish brief modules quickly, they feel more engaged and motivated. Students can concentrate on particular subjects or regions they find difficult, which encourages personalized learning. It might oversimplify difficult concepts, resulting in a limited comprehension of the subject (Akhmetshin et al., 2019). Additionally, exposure to brief modules on a constant basis may reduce possibilities for in-depth reflection and critical thinking, both of which are essential for comprehensive learning. Teachers are able to create instructional materials that are succinct and laser-focused on particular learning objectives. The process of teaching is streamlined, which makes it simpler for teachers to arrange and present knowledge. Micro learning also offers chances for formative evaluation. Teachers can add tests or other interactive exercises to the courses to help students advance and highlight areas that need more work (Zhu et al., 2020). Micro learning divides language instruction into little, manageable chunks that are simpler for students to take in and retain. In brief and focused modules, English language learners can concentrate on particular language skills like vocabulary, grammar, pronunciation, or listening comprehension. Focused practice and repetition, which are crucial for learning a language, are made possible by this method. Micro learning encourages consistent practice on a regular basis. Even if they just have a small amount of time each day, learners can participate in quick English language activities. Regular exposure to the language encourages learning and promotes steady advancement over time. Because students may access English language modules whenever and wherever they want via their smartphones, tablets, or PCs, micro learning is also a good fit for hectic schedules (De Wilde et al., 2020).

The present study determines that research on the problems and development models of micro-learning in English vocabulary curriculum in China. The current study established its own self-determination theory (Ryan & Deci, 2020). Giving students options and opportunities to exert control over their learning helps develop autonomy in the classroom. Competence can be enhanced by providing students with appropriate challenges that match their abilities (Zhu et al., 2020). Relatedness can be fostered by building positive relationships between students and teachers, as well as among students themselves (Ryan & Deci, 2020). This study aims to investigate micro learning issues and development strategies in the English vocabulary curriculum. The study's overall goal is to offer educators and practitioners useful suggestions and instructions for maximizing the use of micro learning in the creation of English vocabulary curricula.

LITERATURE REVIEW

Self Determination Theory

According to the Self Determination Theory (SDT), relatedness, competence, and autonomy are the three fundamental psychological requirements that drive human motivation (Ryan & Deci, 2020). The psychologists Edward Deci and Richard Ryan created the theory in the 1980s, and it has since been widely used in a variety of settings, including those associated with education, sports, and the workplace (Zhu et al., 2020). According to SDT, humans have an inbuilt need to fulfil their relatedness, competence, and autonomy primary psychological demands. While autonomy is the desire to be in charge of one's own life and decisions, competence is the desire to feel capable and competent in one's actions. The need to be linked to and valued by others is known as relatedness, on the other hand (Ryan & Deci, 2020). According to SDT, some motivational strategies can damage people's feelings of autonomy and intrinsic motivation. These motivational processes include interjected regulation and external regulation, which are motivated by rewards or penalties. SDT proposes that people can acquire a feeling of self-determination or the conviction that they are in charge of their own lives and decisions, in addition to describing the significance of fundamental psychological needs in motivation. Environments that promote autonomy, competence, and relatedness might help to create this sense of self-determination by offering possibilities for choice and meaningful participation in activities (Ryan & Deci, 2020). Uses of SDT can be found in a variety of fields, such as education, where they have been used to increase student accomplishment and engagement, and business settings, where they have been used to raise employee motivation and job satisfaction. SDT has been applied in sports to encourage athletes' innate desire and love of exercise.

On the other side, teachers who are less proficient in English can encounter more difficulties when learning the language, which might diminish their confidence and sense of independence (Ryan & Deci, 2020). In certain situations, it can be important to offer more assistance and scaffolding so that students can improve their language proficiency and self-assurance. Using a variety of teaching techniques to accommodate various learning styles, or letting pupils select topics that interest them, are two examples (Zhu et al., 2020). On the other hand, chances for students to practise and apply their language abilities, helpful criticism, and acknowledgement of their accomplishments could all help to enhance competence. By fostering a welcoming and inclusive learning atmosphere where students feel linked to their peers and teachers, relatedness could be promoted. SDT in language learning can also be influenced by one's command of the English language (Ryan & Deci, 2020; Zhu et al., 2020; Sinaga & Pustika, 2021).

Micro Learning Methods

To successfully distribute content, a variety of micro learning techniques can be used. Here are a few typical approaches: A well-liked micro learning strategy uses quick videos. They are interesting and useful for spreading information because they may stimulate the senses visually and aurally. Videos can be used to clearly and concisely provide examples, clarify concepts, or demonstrate procedures. Infographics are visual representations of information that distil complex ideas into eye-catching and understandable shapes (Rahiem, 2020; Lee, 2022). They are suited for quick and memorable learning since they frequently employ graphics, icons, and little text to convey vital information. Micro learning modules may have interactive quizzes that let students check their understanding of important ideas and concepts. These tests may take the shape of matching exercises, drag-and-drop games, or multiple-choice questions. To improve the learning process, learners can receive immediate feedback. Micro learning can also include quick modules with text content. These modules might include succinct explanations, important lessons, or summaries of more extensive subjects. Without being overwhelmed by a lot of content, learners may rapidly read and comprehend the key elements. As mobile technology has developed, specialized mobile apps have made micro learning easier to access (Zhu et al., 2020).

These apps frequently provide a variety of micro learning tools, including interactive exercises, quizzes, flashcards, and videos, enabling learners to access learning resources while on the go. Content is divided into little, "bite-sized" modules or bits for micro learning. With this strategy, students can concentrate on particular subjects or abilities without getting overwhelmed. It is often easier to grasp and retain information when each module addresses a specific learning purpose. Micro learning gives students access to knowledge at the precise moment they need it, enabling them to take care of pressing educational requirements. It facilitates on-demand learning, allowing students to instantly access pertinent knowledge to address issues or finish activities in the present. Micro learning can be tailored to each learner's requirements and preferences through personalization. Depending on their interests, ability levels, or particular areas of interest, learners can select modules. Personalization increases the learning experience's relevancy and enables students to interact with the content more successfully. Micro learning incorporates interactive components to promote active learning. Quizzes, exercises, simulations, or other practical activities actively engage the learner (Villegas, SaizdeLaMora, Martin, &

Mills, 2018; Rose, Curle, Aizawa, & Thompson, 2019).

This engaged engagement improves comprehension, retention, and application of the material taught. Micro learning frequently incorporates quick tests or quizzes to determine students' comprehension and offer instant feedback. These evaluations assist students in tracking their development, reinforcing what they have learned, and identifying areas that need more focus. Establish a welcoming environment where everyone is respected for their unique opinions and backgrounds. Positive language, inclusive imagery, and culturally aware content can help achieve this. Incorporate inspirational sayings or phrases into your micro-learning courses to motivate and encourage your audience. These can be used to encourage and support viewers emotionally before or after the programme. Foster possibilities for social learning by incorporating discussion boards, chat rooms, or other online communities where students may get to know one another, ask questions, and share opinions or experiences. Promoting teamwork and peer-to-peer assistance can provide people with a sense of belonging and emotional comfort (Zhang, Dai, & Wang, 2020). As learners complete the micro-learning activities, give them prompt, constructive feedback. Their self-confidence and emotional health can be boosted by praise for their efforts and positive reinforcement, which will encourage them to keep studying. Include self-reflection or self-evaluation opportunities in the micro-learning courses. Promoting emotional development and self-awareness can be achieved by asking students to consider their accomplishments, areas of strength, and areas for development (Akhmetshin et al., 2019; Sinaga & Pustika, 2021).

Students' Learning Experience and Curriculum Development

The development of the curriculum is essential in determining how pupils learn. The term "curriculum" refers to the carefully thought out program of study that specifies what will be taught, how it will be taught, and what the students will be able to do as a result of their learning (Zhang et al., 2020). Curriculum development was identified to be a key element in fostering student learning and achievement in a study by Ryan and Deci (2020). The study demonstrated that coordinating curriculum goals, material, and assessments with the targeted learning outcomes is essential for effective curriculum creation. The study stressed how critical it is to create curricula that offer students meaningful and applicable learning opportunities. According to research by Hattie and Marsh from 1996, curriculum development is crucial in fostering students' willingness to learn. The study demonstrated that a well-designed curriculum can increase students' willingness to learn and boost academic performance by giving them compelling, demanding learning experiences. According to Dong, Cao, & Li (2020), curriculum creation is crucial for fostering students' capacity for critical thought and problem-solving. The study stressed how crucial it is to create curricula that give students the chance to use their knowledge and abilities in practical contexts and to participate in inquiry-based learning. The relevance of curriculum development in fostering students' self-regulated learning was highlighted in research by Dong et al. (2020).

A teaching strategy called micro-learning concentrates on giving students brief, digestible bits of knowledge to help them quickly pick up new information or abilities (Zhang et al., 2020). A planned and organized course of study is created, put into practice, and evaluated as part of the curriculum development process (Villegas et al., 2018; Rose et al., 2019). A well-designed curriculum can give students engaging and pertinent learning opportunities that will advance their understanding, promote their personal growth, and raise their academic performance (Villegas et al., 2018; Rose et al., 2019). A well-designed curriculum should include distinct learning objectives that direct the choice of subject matter, instructional procedures,1 and evaluation tactics. These goals should be made obvious to students and should be in line with the targeted learning outcomes for the class. Students should have the chance to study actively and enthusiastically through activities like inquiry-based learning, problem-based learning, and collaborative learning in a well-designed curriculum (Akhmetshin et al., 2019; Sinaga & Pustika, 2021). This can involve utilizing various instructional techniques, incorporating technology, and offering differentiated training and assessment (Ma et al., 2018; Setyowati & Herianto, 2022).

Mediating Role of Students Learning Experience

According to Dong et al. (2020), effective teaching techniques including active learning, collaborative learning, and instructor feedback can improve students' comprehension and knowledge retention. A productive and encouraging learning environment can only be created when there is effective teacher-student communication. According to Akhmetshin et al. (2019), open lines of communication, unambiguous expectations, and instructor feedback can increase students' motivation and involvement (Ismail, 2011; Akhmetshin et al., 2019; Zhang et al., 2020; Romijn et al., 2021). Dong et al. (2020) discovered that teaching proficiency and awareness were favorably related to students' learning experiences, which were then positively related to academic accomplishment. The authors came to the conclusion that enhancing teaching proficiency and awareness can improve students' learning opportunities and academic success. Similar to this, F. G. Gilal, Zhang, Paul, & Gilal, (2019) showed that student learning experiences affected the relationship between teacher competence and academic achievement at a Chinese university. Akhmetshin et al. (2019) claim that increasing teacher competency

can provide students more opportunities to learn, which can then improve academic achievement.

As micro-learning is presented in smaller doses, pupils are more likely to retain knowledge. Students can focus on the information being provided since there is less cognitive overload. Micro-learning allows students to learn at their own speed and achieve their learning goals by being customized to their own needs. Micro-learning provides an opportunity for students to study in a fun and participatory way (Ma et al., 2018; Yaqin, Hartati, Salabi, Bahri, & Mizani, 2021; Setyowati & Herianto, 2022). Utilizing multimedia tools, such as videos, infographics, and interactive quizzes, can make learning more engaging. Because it is accessible at any time, from anywhere, and on any device, micro-learning is a flexible and useful technique of learning.

Dong et al. (2020) revealed that the relationship between academic success and language improvement as well as course satisfaction was mediated by students' assessments of their learning experiences. The authors contend that promoting an environment that values participation, cooperation, and interaction will improve language learning outcomes. Students gain a sense of purpose and direction when they are aware of what is expected of them from each module. The ability to track progress thanks to clear targets might help students become more motivated as they see themselves getting closer to their aims (Villegas et al., 2018; Rose et al., 2019). With this strategy, students experience less overload and find the learning process more approachable. Completing quick modules can increase motivation and promote continuous engagement since they give people a sense of progress and success, according to Zhang et al. (2020). Improving academic results can be achieved by creating a good learning environment that encourages student engagement and motivation. According to Syaharuddin et al. (2021)and Zhu et al. (2020) students' internal experiences, such as their mental health and sense of self-efficacy, mediated the link between their learning process and academic success. According to Zhang et al. (2020), addressing students' individual needs and fostering a positive learning environment can improve academic performance.

Moderating Role of English Language Proficiency

The term "English Language Proficiency" describes the capacity to communicate successfully in English (Ma et al., 2018). English language proficiency can provide people with access to opportunities in school, career, and travel (Ma et al., 2018; Yaqin et al., 2021; Setyowati & Herianto, 2022). Micro learning decides which language skills, such as grammar, vocabulary, pronunciation, or conversational skills, your ELP students need to improve. Then, develop concise, skill-specific lessons that focus on those skills. Use multimedia materials to engage students and reinforce learning, such as podcasts, videos, and interactive quizzes. Utilize online resources that offer learners rapid feedback, including grammar checkers or applications for pronunciation (Ma et al., 2018). Students may find it simpler to identify and correct mistakes immediately away as a result.

Concerns and interest in Chinese teachers' English language skills have grown in recent years, especially in light of the growing importance of English language education in China (Sobaih et al., 2021). Depending on criteria including their educational background, teaching experience, and exposure to English language learning opportunities, Chinese teachers' levels of English language proficiency might vary greatly. While some teachers might speak the language with a high level of ability, others might find it difficult (Maqableh & Alia, 2021). English language competency can affect how effective a teacher is because highly proficient teachers may be better able to clarify ideas, lead conversations, and give feedback in English. Conversely, less experienced teachers might find it difficult to do these responsibilities, which could have a negative impact on students' learning experiences (Ali & Watson, 2018; Lee, 2022). The Chinese government has launched numerous programs aimed at boosting English language instruction, including giving teachers opportunities for professional development, and has acknowledged the value of instructors being fluent in English (Rose et al., 2019). Lack of funding, exposure to few real-world English language learning chances, and the existing English language education system's neglect of spoken communication skills are a few of these (De Wilde et al., 2020; Romijn et al., 2021). The learning process for students and their capacity to participate in the curriculum might be influenced by their English language skills. Higher-level English language users may find it simpler to comprehend the curriculum and participate in the learning activities (Ismail, 2011). English language ability can also have an impact on the creation and delivery of the curriculum (Rahiem, 2020; Lee, 2022). To accommodate pupils with varying degrees of English language competency, for instance, teachers may need to alter their teaching methods and resources. This may have an effect on how well the program is implemented overall and how well the pupils learn (Sinaga & Pustika, 2021). This may enhance both their academic performance and capacity for peer-to-peer learning (Villegas et al., 2018; De Wilde et al., 2020).

Hypothesis Development

H1: Students' learning experience directly impacts curriculum development.

H2: Students' learning experience mediates the relationship between teaching competence and awareness

and students' learning experience.

H3: Students' learning experience mediates the relationship between Language improvement and course satisfaction and students' learning experience.

H4: Students' learning experience mediates the relationship between Attitude and personal feelings and students' learning experience.

H5: English language proficiency moderates the relationship between students' learning experience and curriculum development.

Conceptual Framework

Figure 1 displays the quantitative study conceptual framework the researcher created using the elements after reading the extensive literature review.
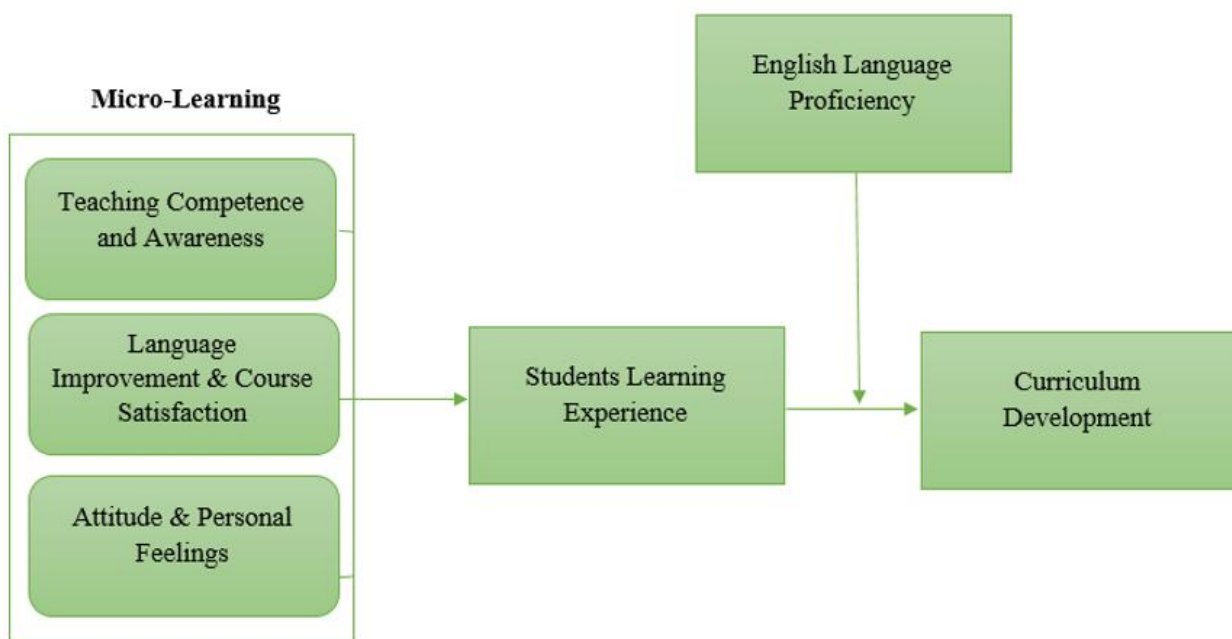

Figure 1. Conceptual Framework

METHODOLOGY

Research Design

A research strategy known as mixed-methods methodology combines quantitative and qualitative data gathering and analysis techniques to answer specific research questions or challenges. It entails combining the two methodologies to offer a more thorough and all-encompassing grasp of the study topic. Data is gathered using a range of techniques in a mixed-methods study, including surveys, interviews, focus groups, observations, and document analysis. The collection, analysis, and integration of both qualitative and quantitative data results in a more comprehensive understanding of the study problem.

Using the self-determination theory of Ryan and Deci (2020), the conceptual framework and underlying assumptions of the study were created. The study focused on attitudes and feelings, language development and course satisfaction, teaching competency and awareness, curriculum development, the role of students' learning experiences as mediators, and English language proficiency as a moderator. It also highlighted teaching competence and awareness. The headmasters, principals, and administrators initially gave their consent. A face-to-face survey, a call to action to participate, and a brief description of the study's objectives were the methods these researchers used to collect data. With the non-probability sampling technique known as convenience sampling, participants are chosen by researchers based on their accessibility and availability. Participants are picked based on accessibility or convenience rather than at random sampling. In China, 280 regular English teachers and 4 directors of English teaching will provide the information. **Figure 2** shows the Venn diagram of qualitative and quantitative research.
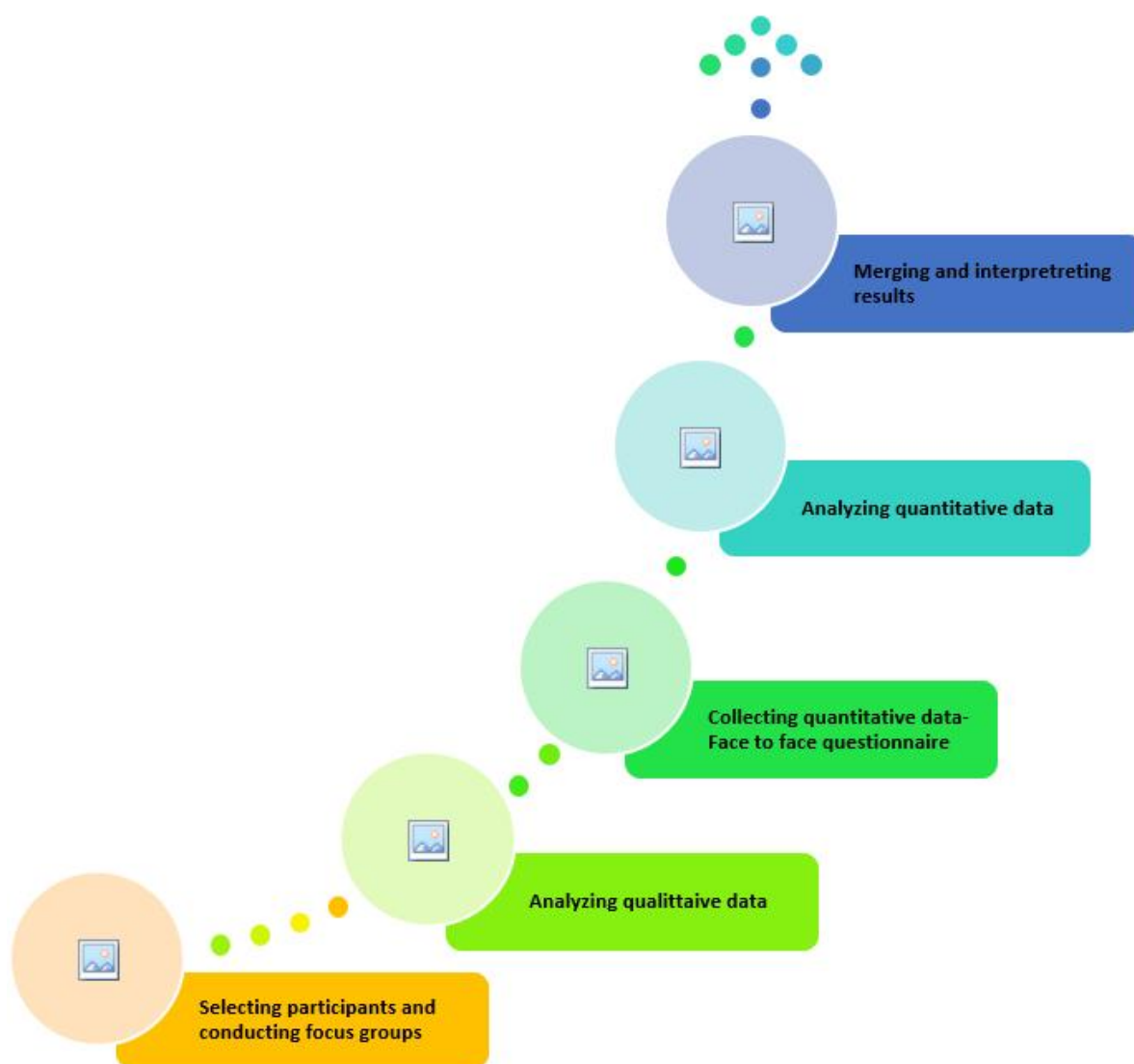
Figure 2. Venn Diagram of Research Methodology

Measurement Scale

A 22-item questionnaire was devised to determine the research on the problems and development models of micro-learning in English vocabulary curriculum, as well as how self-determination theory is involved. Teaching competence and awareness include items "Helped me develop an awareness of my teaching competence and helped me develop the actual teaching skills I will need later" adopted by Ning and Downing (2012). Language Improvement and Course Satisfaction include items "Helped me learn to organize my time and offered me a practical opportunity to teach a lesson" adopted by Romijn et al. (2021). Attitudes and Personal Feelings include the item "Made me feel embarrassed when teaching my colleagues" adopted by Ning & Downing (2012). Students' Learning Experience includes items "The staff made it clear right from the start what they expected from students and the teaching staff worked hard to make their subjects interesting" adopted by Ismail (2011). English Language Proficiency includes items "Listening proficiency and reading proficiency" adopted by Ma et al. (2018). Curriculum Development includes the item "Partnership and synergy with other schools to share resources is a good approach in curriculum development" adopted by De Wilde et al. (2020).

Five interview questions that will be followed after the questionnaire as a supplement. The self-designed learning experience. Specifically, these interview questions addressed students' overall perception of the Superstar learning experience during the vocabulary course, students' opinions of the course's pros and cons and additional comments on the curriculum design. Since all the participants are Chinese, the questionnaire and interview were conducted in Chinese language. Micro learning experience, micro learning outcome, vocabulary learning habit, etc. Some qualitative questions asked during the interview are; are there English practice materials on Superstar? What do you think could be improved on the Superstar online learning APP?, What are the advantages and

disadvantages of using video teaching to learn English words?

Participants and Data Collection

Closed-ended surveys, cross-sectional analyses, and quantitative methods are all used in this study. Regular Chinese instructors who actively seek out English language instruction are study participants. A cover letter and questionnaire survey were sent to each contact after obtaining the required departmental approval to ask for their willing involvement in this research. Because the survey was conducted in English, respondents were also asked to include information in the cover letter describing their degree of language proficiency. Additionally, just the study's overall findings were disclosed, and all respondent responses were totally kept anonymous. The 280 regular teachers who participated in the study, according to the researchers, did so voluntarily since they were at ease filling out the surveys. Data was gathered between January 20 and February 20, 2023. The researcher decided to stop gathering data due to time constraints once 280 questionnaires had been returned. For the study, a total of 280 thorough and insightful survey responses from different Chinese universities were gathered, with a response rate of 87%, or only 280 questionnaires were responded to, for a total of 320 questionnaires. The sample for the study was chosen using a thorough, intentional selection process, a method for gathering data online or through the acquisition of samples that are (Sandra Marcelline et al., 2022). The following hypothesis is tested in this study by using the PLS-SEM Smart PLS 3 method to examine the data (Ravand & Baghaei, 2016). The majority of regular teachers in this study are expected to have intermediate levels of English language ability, according to the research hypothesis. A total of 280 regular teachers who teach English as a subject will make up the sample for this study. Participants will be chosen at random from a variety of geographies, institutions, and educational levels. Data on the teachers' command of the English language will be gathered quantitatively. Descriptive statistics will be used to examine the data and identify each teacher's level of expertise in each skill area. To assess the importance of variations in proficiency levels among various groups of teachers, inferential statistics will be used (e.g., by region or level). For data analysis, statistical programs like SPSS or PLS will be employed (Avotra, Ye, Wu, Zhang, & Nawaz, 2021).

RESULTS

The current study determines that research on the problems and development models of micro-learning in English vocabulary curriculum, as well as how self-determination theory is involved. When results are presented in both quantitative and qualitative forms, it indicates that both quantitative and qualitative approaches were used to analyse the study's data. Statistical tables, graphs, and charts are common ways to convey quantitative results because they are numerical in nature. They offer a quantitative overview of the data and can be applied to find trends or connections in the data.

Demographics

Table 1 contains demographic data as well as the findings of current studies on the issues with micro-learning in English vocabulary curriculum development models and self-determination theory. Gender, age, and teaching experience were determined to be key variables for Chinese regular working instructors. **Figure 1** shows a demographic profile.

Table 1. Demographic Profile

Demography	Description	No. Of Responses	%
Gender	Male	150	54
	Female	130	46
Age	25-35	190	68
	Above 35	90	32
English Vocabulary	Readers	150	54
	Not Readers	130	46
Teaching Experience	1 Year	80	29
	2-3 Year	150	54
	More than 3 Years	50	17

In **Table 1**, 54% of the students were male and 46% were female. The average age of regular teachers was between 25 and 35 and above 35 was 32%. In China, participants who understood English was 54% and those who did not properly understand English were 46%. In China, teachers with 1-year experience were 29%, 2-3 years were 54% and more than 3 years were 17%.

Measurement model

To follow the model's development in the current investigation, structural equation modelling using partial least squares was used. This measurement was performed using Smart PLS. For determining this quality score, the "average variance extracted (AVE), confirmatory factor analysis (CFA), convergent validity, and discriminant validity" are taken into account (Nawaz & Guribie, 2022; Nawaz, Chen, & Su, 2023). Validity and reliability are the two main criteria used in PLS analysis (Sarstedt et al., 2022). This is accurate because determining the model's quality is the primary goal of model measurement (Tao et al., 2021). Convergent and discriminant validity assessments of the research construct were made. The average variance extracted (AVE) values and item loading values were used to investigate the convergent validity, also known as internal consistency, of the variables. This convergent validity analysis evaluated the dependability of the items. **Figure 3** shows the assessment of the algorithm.
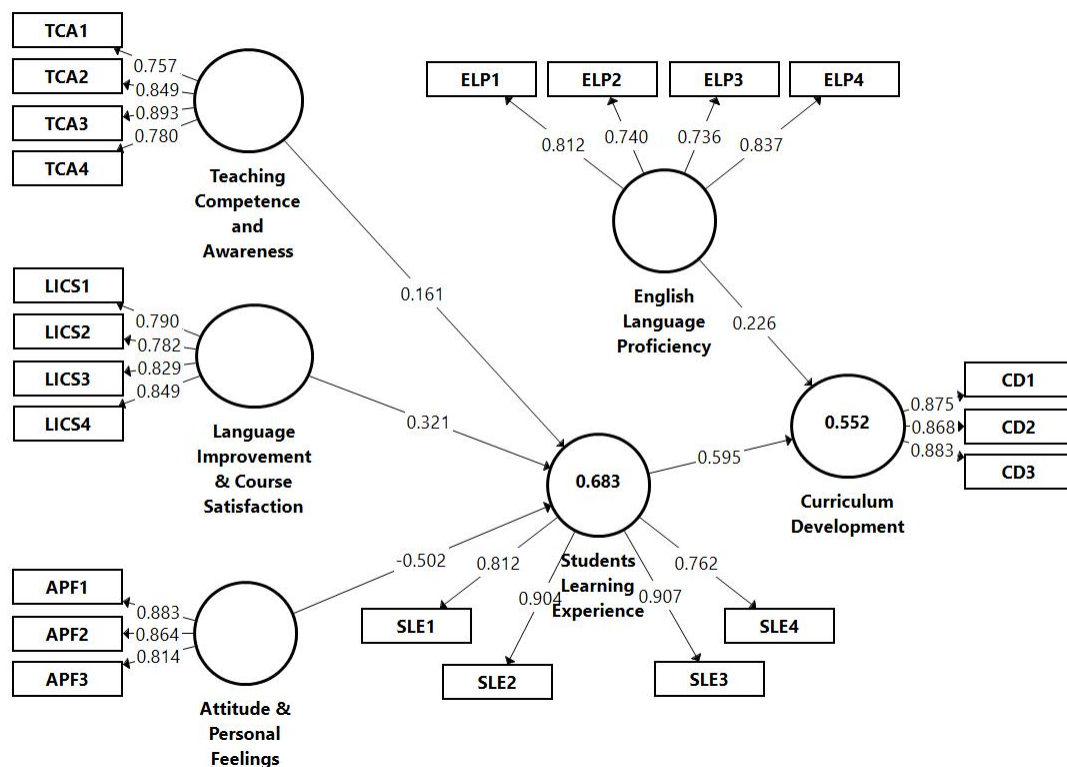

Figure 3. Assessment of Algorithm

Composite Reliability and Validity

The factor loadings, validity, and reliability of the information gathered from 280 regular teachers were also evaluated using PLS-SEM. The validity, reliability, and item factor loading of the PLS measurement model are detailed in **Table 2.** Cronbach's alpha test value, which must be 0.70 or greater, is typically used to evaluate an item's internal dependability (Sarstedt et al., 2022). Cronbach's Alpha and the composite reliability ratings for the variables under investigation were both higher than 0.70. While the average variance extracted (AVE) values for discriminant validity were higher than 0.50, convergence validity and high reliability were demonstrated (Yang et al., 2021; Nawaz et al., 2023) The composite dependability scores were higher than the cutoff range of 0.70, ranging from 0.886 to 0.911. **Table 2** Composite Reliability displays values for Cronbach's alpha and average extracted variance.

Table 2. Composite Reliability and Validity

Construct	Item	Loadings	CA	CR	AVE
Teaching Competence and Awareness	TCA1	0.757	0.838	0.892	0.675
	TCA2	0.849			
	TCA3	0.893			
	TCA4	0.780			

Construct	Item	Loadings	CA	CR	AVE
Language Improvement & Course Satisfaction	LICS1	0.790	0.829	0.886	0.661
	LICS2	0.782			
	LICS3	0.829			
	LICS4	0.849			
Attitude & Personal Feelings	APF1	0.883	0.815	0.890	0.730
	APF2	0.864			
	APF3	0.814			
Students Learning Experience	SLE1	0.812	0.868	0.911	0.720
	SLE2	0.904			
	SLE3	0.907			
	SLE4	0.762			
English Language Proficiency	ELP1	0.812	0.789	0.863	0.612
	ELP2	0.740			
	ELP3	0.736			
	ELP4	0.837			
Curriculum Development	CD1	0.875	0.848	0.908	0.766
	CD2	0.868			
	CD3	0.883			

"Note: CR=composite reliability; AVE=average variance extracted; CA= Cronbach's Alpha"

Discriminant Validity

Each research technique must additionally demonstrate its discriminant validity. The discriminant validity of one predictor variable explains why it differs from some of the other latent variables (Sarstedt et al., 2022). To assess the discriminant validity, the associated factor variability, AVE value, and other range of fundamental values must all be lower than the AVE of the independent factors (Ravand & Baghaei, 2016). When an idea is validated using discriminant validity, it is compared to other concepts. More research was conducted for structural analysis once we were certain of the variables' consistency and validity. The HTMT values in **Table 3** provide significant confirmation of the discriminant validity. The HTMT results in **Table 3** provide more evidence for the discriminant validity.

Table 3. Discriminant Validity

	APF	CD	ELP	LICS	SLE	TCA
Attitude & Personal Feelings	0.854					
Curriculum Development	-0.657	0.875				
English Language Proficiency	-0.434	0.550	0.782			
Language Improvement & Course Satisfaction	-0.445	0.602	0.597	0.813		
Students Learning Experience	-0.744	0.718	0.544	0.638	0.849	
Teaching Competence and Awareness	-0.612	0.619	0.685	0.580	0.654	0.822

R Square

The researcher's instrument for this investigation was Smart PLS 3.0. The amount of variance in the dependent variable that can be explained by the independent variable(s) in a regression model is expressed statistically as R squared (Sarstedt et al., 2022). **Table 4** shows the R square value of curriculum development was 0.552, and students' learning experience value of R square value was 0.683.

Table 4. Assessment of R Square

	R2
Curriculum Development	0.552
Students Learning Experience	0.683

Structural Equation Model

The structural model route coefficients reflecting the hypothesized correlations were statistically determined using the PLS-SEM bootstrapping approach. This study supports the PLS-SEM evaluation of school

administration development strategies influencing rural teachers' skills, motivation, and performance in China's rural schools and offers support for the self-determination theory. In relation to bootstrapping, assessments of the assumptions' plausibility, predictability, measurement variability, coefficient of determination, and other characteristics are provided (Hao et al., 2020). The sample distribution of this method can be used to estimate almost any statistic that makes use of the survey technique. An alternative to statistical procedures is typically utilized when a modelling technique is unreliable, challenging to apply, or requires the employment of complicated formulas to compute standard errors (Nawaz, Waqar, Shah, Sajid, & Khalid, 2019; Maqsoom et al., 2021). **Figure 4** shows the assessment of bootstrapping.
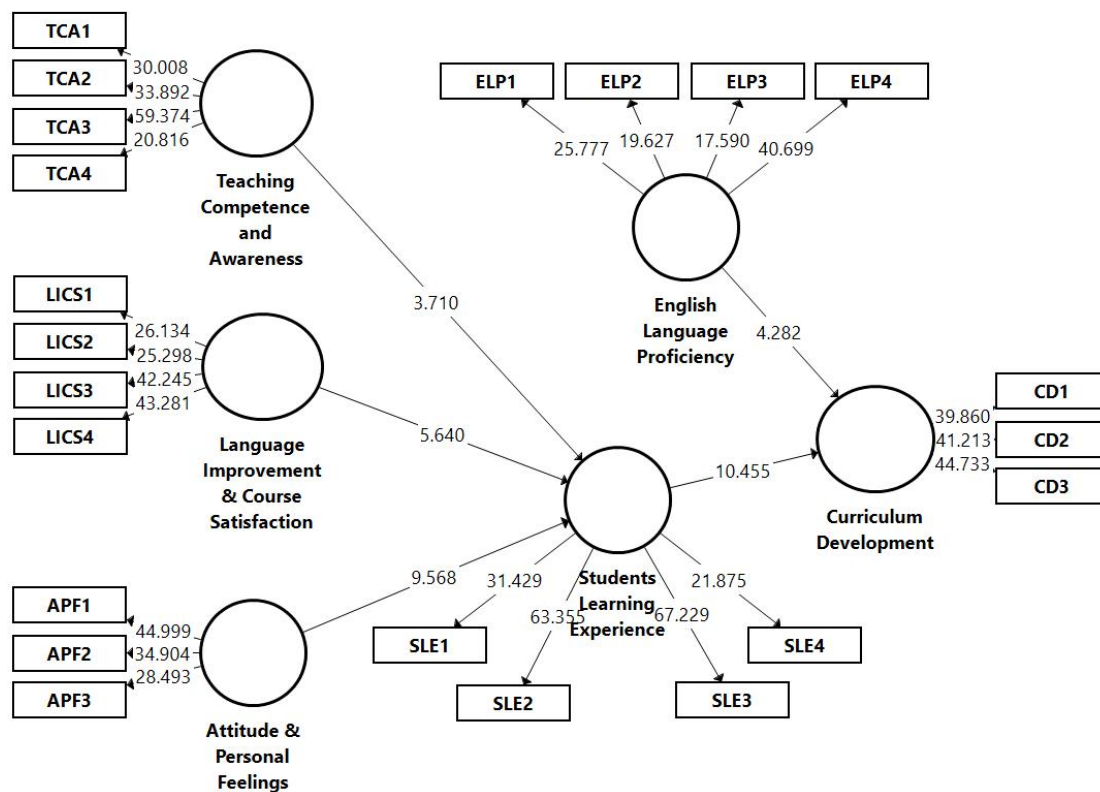

Figure 4. Assessment of Bootstrapping

Direct Relation

The findings show a connection between students' learning experience and curriculum development (β = 0.595, t = 9.825, p = 0.0001). H1 is therefore accepted. In **Table 5** direct relation of independent variables to dependent variables is shown.

Table 5. Direct Relation

	Original Sample	T Statistics	P Values	Decision
Students Learning Experience -> Curriculum Development	0.595	9.825	0.0001	Supported

Mediating Effect

In mediation, "the parties meet with a mutually agreed-upon neutral third party who aids them in the discussion of their differences," according to Ravand and Baghaei (2016). In **Table 6**, the mediating effect shows between attitude & personal feelings, language improvement & course satisfaction, and teaching competence and awareness and curriculum development. According to **Table 6**, all mediating hypothesis was accepted.

Table 6. Mediating Effect

	Original Sample (O)	T Statistics	P Values	Decision
Attitude & Personal Feelings -> Students' Learning Experience -> Curriculum Development	-0.299	6.059	0.0001	Accepted
Language Improvement & Course Satisfaction -> Students Learning Experience -> Curriculum Development	0.191	4.452	0.0001	Accepted
Teaching Competence and Awareness -> Students Learning Experience -> Curriculum Development	0.096	3.674	0.0001	Accepted

Moderating Effect

The moderation effect in PLS is the relationship between a predictor variable and a moderating variable on the result variable (Hair Jr & Sarstedt, 2021). In other words, it occurs when the levels of a third variable do not always reflect the link between the levels of the first two. PLS enables the investigation of moderation effects by including interaction terms between the predictor and moderating variables in the model. The interaction term is produced by multiplying the scores of the moderating and predictor factors. According to Hair Jr and Sarstedt (2021), a moderator variable is often used "when there is an inconsistent or weak link between the independent and dependent variables". The manual calculation of interaction terms using features, converters, and calculators limits the use of a number of methods for "testing moderating effects, such as the hegemonic regression technique". The information in **Table 7** supports this assertion by showing how the association between students' learning experience and curriculum development is moderated by English language proficiency (B = 0.267, P = 0.001). **Table 7** moderating effect shows between academic enterprise and collaborative innovation.

Table 7. Moderator Hypothesis Testing

	B-Value	T-Value	P Value	Decision
Students Learning Experience *English Language Proficiency -> Curriculum Development	0.226	4.224	0.0001	Accepted

Analysis of Teacher Interview Results

The target of the survey in the form of interviews mainly refers to English teachers. Teachers organize the whole process of microteaching, including the classification of teachers' teaching skills, students' preparation for microteaching before class, arrangement of teaching practice, organization of skills training and evaluation, and guidance for students' re-modification of microteaching plans. So teachers have a holistic understanding of microteaching. In this survey, the interview content was recorded, sorted out and analyzed, so as to make a more comprehensive and in-depth investigation of the status quo of microteaching. In the course of this survey, according to the interview outline, the following aspects are mainly discussed: Superstar as a vocabulary teaching platform to be improved, preferred English learning methods, advantages and disadvantages of video teaching, Superstar online learning platform can be improved, the evaluation of the vocabulary teaching content and methods on Superstar.

As for the potential for improvement, Interviewee 1 Zhang said the Superstar platform should be made more interesting so that students can be more interested. Interviewee 2 Zhou explained in more detail that students' interest can be increased by adding animated videos because vocabulary teaching itself is boring. For example, in the Lead-in stage, animations and videos are often used to add roots, prefixes and suffixes as effective ways to improve word memory. Interviewee 3 Professor Zhu: As there are no English practice materials on Superstar, it is very troublesome for teachers to search the related practice materials, so Superstar should build up more linguistic learning bank.

Both Mr. Zhu and Mr. Zhou affirmed their interest in video courses in English learning and the teacher's preference for video courses in teaching. Because teachers would help me straight up the knowledge structure as video classes are more effective and interesting to students than self-learning. Interviewee 4 Teacher Qian prefers to use a mobile app named not to memorize words. That is really helpful and user-friendly because you can recite the words of different areas or for exams. Zhang believes that mixed tools should be diversified since teaching

methods should be used in the process of teaching.

When evaluating the advantages and disadvantages of using video teaching to learn English words, almost all teachers agree that video teaching is more lively than traditional classes, which could largely raise students' interests. In addition, the pro is that students can learn knowledge from the prestigious teacher's online restaurant. Students may get distracted while watching the video. Professor Zhu emphasized that another limitation of video teaching is that he cannot get enough interactions during classes. Teacher Zhou believes that it is necessary to pay attention to the problems in video teaching English vocabulary that students' movements cannot be monitored at will and the ideal teaching effect cannot be ensured.

What do you think could be improved on the Superstar online learning APP? Mr. Qian thinks that the user-interface could be more colorful and interesting, so that students may find it more intriguing. Ms. Zhang, Ms. Zhu and Ms. Zhou all mentioned the importance of the online practice library. Superstar online learning applications should create more practice and learning materials to reduce the workload of teachers.

Finally, in the evaluation of teaching contents and methods, Teacher Qian believes that Teaching content should be suitable for the students, not too easy or too hard, challenging and progressive, and teaching methods should be diversified and flexible, in order to appeal to different students. Interviewee 5 Mr. Zhun pointed out that during high school, one of the most effective ways is to keep track of students' scores. While in college, there are not enough opportunities to give feedback on students' learning and their teachers' outcomes satisfaction of students is the only visible way to evaluate them. Mr. Zhang pays more attention to the Students' feedback about the teachers. Teacher Zhou pays more attention to teaching and thinks that according to the learning objectives designed by teachers, the learning method depends on whether the classroom effect reaches the expectation and whether most students can master and accept the learning content designed by teachers.

DISCUSSION

The discussion part is divided into two sections, one for discussing the hypothesis and the other for discussing interview answers. This study examines that research determines that research on the problems and development of micro-learning in English vocabulary curriculum, as well as how self-determination theory is involved. The impact of teaching competence and awareness, language improvement and course satisfaction, attitude and personal feelings and students' learning experience is also being determined, as well as English language proficiency plays a role as moderator which affects curriculum development. The evidence strongly supports each of the hypotheses.

The findings show a connection between students' learning experience and curriculum development. The curriculum is a key element of the educational process because it establishes the parameters for the courses that are taught, the learning objectives that are created, and the assessments that are used to track progress. The learning experiences of kids are greatly impacted by a well-designed curriculum (De Wilde et al., 2020). A good curriculum should be current, interesting, and sufficiently difficult. Also, it ought to be created with the kids' requirements, passions, and learning preferences in mind. According to Setyowati and Herianto (2022), curriculum creation is crucial to fostering students' comprehension of the material and their capacity to apply it in practical settings. A well-designed curriculum can support the development of a good learning environment, encourage student involvement, and support academic success. Students' learning experience as a mediating variable, the link between language improvement & course satisfaction between teaching competence and awareness and curriculum development remained significant. If students' learning experiences in this situation act as a mediating factor in the relationship between language improvement, course satisfaction, and curriculum development, it follows that the impact of curriculum development on these outcomes is partially a result of its impact on students' learning experiences (Gustanti & Ayu, 2021). In other words, a solid curriculum helps create an enjoyable learning environment, which in turn improves language proficiency and course satisfaction. Zhang et al. (2020), discovered a positive relationship between students' happiness with a language course and their reported learning gains, which in turn was associated with their enthusiasm to learn the language. However, it would suggest that the effect of curriculum development on language improvement & course satisfaction is partly due to its impact on students' learning experience (Zhang et al., 2020). It includes a variety of skills, such as subject expertise, pedagogical techniques, classroom management, and the capacity to modify teaching methodologies to accommodate different learner requirements. A high level of teaching proficiency guarantees that instructors can persuade students to understand concepts, engage them in the learning process, and offer the proper direction and assistance. To improve teaching abilities and stay current with educational best practices, continuous professional development and reflective practices are essential.

Students' learning experience and curriculum development are moderated by English language proficiency. For example, if the students lack English language proficiency, even a well-designed curriculum might not be successful in promoting a good learning experience, which would lead to diminished course satisfaction and language improvement (Yaqin et al., 2021). This suggests that the degree of English language ability is a moderator variable that affects the relationship between students' learning experiences and curriculum development. In terms of their learning experiences, course satisfaction, and language growth, students with high levels of English language proficiency may benefit more from a well-designed curriculum than students with lower levels. The claims made by Zhang and Zhou raise significant questions about the efficacy of conventional language teaching techniques and the requirement for cutting-edge strategies to engage language learners. The development of vocabulary is an essential component of language learning, but for students, it may frequently be tiresome and uninteresting, which results in a lack of interest and desire. Zhang's statement highlights the importance of making language learning interesting and engaging to students. The results of students' learning efforts and, ultimately, their language ability, might be hampered by a lack of interest and desire. Making language learning more fascinating and engaging encourages students to invest more time and effort in learning the language, which improves learning outcomes.

Monitoring students' academic development by keeping score records is a common and efficient method suggested by Mr. Zhun. By doing this, educators can spot places where students might benefit from more assistance and modify their pedagogical strategies accordingly. Students can focus their efforts on areas where they need to develop by keeping track of their scores, which can also provide them with a clear knowledge of their strengths and limitations.

Professor Zhu brings up a crucial point, nevertheless, regarding the dearth of English study materials available on the Superstar platform. Teachers could find it difficult to give pupils the tools they need to advance their English language abilities in the absence of sufficient resources. The academic performance and future possibilities of kids may suffer as a result.

Teacher Qian's preference for using a mobile app for English vocabulary learning raises important questions about the role of technology in language teaching and learning. The app "not to memorize words" is designed to be user-friendly and helpful, allowing students to practice and recite words from different areas or for exams.

CONCLUSION

The research on the issues and growth of micro-learning in the English vocabulary curriculum, in conclusion, has illuminated a number of critical facets. It has brought attention to the difficulties students have learning vocabulary and the promise of micro-learning as a remedy. The study's findings have significance for future practices and enhancements in the teaching of English vocabulary and offer insightful information. One of the main conclusions is that by dividing the learning material into manageable, bite-sized bits, micro-learning offers a promising strategy for vocabulary development. It fosters frequent practice and allows for repeated exposure to vocabulary, which improves retention and retrieval. Additionally, learners can participate in vocabulary activities anytime, anywhere thanks to the adaptability and accessibility of micro-learning platforms, which encourages self-directed learning. The research did, however, also point out several difficulties and restrictions related to micro-learning in the English vocabulary curriculum. To ensure its relevance, correctness, and connection with learners' needs, micro-learning content must be carefully designed and curated. Additionally, because learners may not have the same social interaction and feedback that they would in a regular classroom setting, the issue of motivation and learner engagement in micro-learning contexts needs to be addressed. It is crucial to take into account a few recommendations and implications for the development of micro-learning in the English vocabulary curriculum going forward. To start with, coordination between curriculum designers, teachers, and technology specialists is required in order to produce high-quality micro-learning resources that are interesting, interactive, and tailored to the needs of specific learners. Multimedia components, such as audio and pictures, should also be incorporated into this cooperation in order to improve vocabulary comprehension and retention. Additionally, enabling social interaction and feedback within micro-learning systems can assist in overcoming the difficulty of student motivation. This can be accomplished by including message boards, online communities, or peer review systems that enable learners to interact with one another and participate in cooperative learning activities. Future studies should investigate the efficacy of various micro-learning approaches and tactics for teaching English vocabulary. Longitudinal research and comparative studies can shed light on the long-term effects of micro-learning on vocabulary learning and retention. As a result, even though micro-learning has a lot of promise for solving the issues with learning English vocabulary, more work, improvement, and study are required to fully realise its potential. Teachers and curriculum designers can improve the design and implementation of

micro-learning approaches by taking into account the recommendations and implications presented above. This will ultimately improve English vocabulary education and promote more effective language learning experiences for students.

The statement from Interviewee 4 highlights the potential benefits of using mobile apps for English vocabulary learning. The teacher claims that the software "not to memorize words" is simple to use and useful for learning new words or studying for tests. This shows that language learners may find mobile apps to be a helpful tool, offering them ease and flexibility in their studies. According to Zhang, the Superstar platform needs to be made more interesting to increase student interest, while Zhou suggests that animated videos can be an effective way to make vocabulary teaching more engaging. This indicates that maintaining students' interest and motivation may not always be possible using conventional language teaching techniques. When creating resources and activities for language acquisition, it is crucial to take the interests and preferences of the students into consideration. The effectiveness of language instruction can be increased, and it can become more dynamic and engaging, with the use of multimedia materials like animated films. Both Mr. Zhun and Professor Zhu stress the value of giving children the tools they need to be successful academically, especially in high school. Tracking student performance, as suggested by Mr. Zhun, can help educators identify areas where their students need more help and modify their teaching strategies accordingly. On the other hand, Professor Zhu's observation about the lack of English practice materials on the Superstar platform highlights the need for comprehensive language resources to support English language learning.

IMPLICATIONS

This study could be very useful to decision-makers, administrators, and policymakers. It is necessary to look into new components in order to reduce contributing impacts that are unknown. There are both theoretical and practical implications to the research on the issues with and development models for micro-learning in the English vocabulary curriculum. The study highlights how vital it is for curriculum developers and English language teachers to comprehend the requirements and preferred teaching strategies of their students, particularly when it comes to the learning of English vocabulary. Microlearning can be utilized as a useful tool to improve English vocabulary teaching and learning by using self-determination theory to develop effective microlearning models. The study emphasizes how important it is to take students' English language skills into account when developing effective micro-learning models. The research can be applied to create a more productive and interesting learning environment for English language learners, enhancing academic outcomes. The study contributes to the corpus of knowledge on English language learning and curriculum development by showing how crucial the self-determination theory is in developing effective micro-learning models. The study clarifies the relationships between the development of curricula, students' learning experiences, proficiency in the English language, and teaching competence and awareness. The study focuses on the importance of motivation and autonomy in language learning and how effective micro-learning strategies might support these components. The findings demonstrate how this conceptual framework can be applied in a practical setting to improve learning outcomes, with implications for self-determination theory and educational psychology. By looking at the research on the subject in the English vocabulary curriculum, teachers can discover the best micro-learning strategies for teaching vocabulary. This can assist them in creating and implementing micro-learning programs for ELP students that are more successful. The success of the program can be improved by finding strategies to motivate and engage learners, which educators can do with the use of micro-learning research.

Based on the statements of Interviewees the following implications can the Superstar platform needs to be made more interesting to increase students' interest. It is crucial to periodically receive input from students, assess their engagement levels, and make improvements based on their preferences and needs. By consistently working to increase the platform's appeal and interaction, student interest and motivation can be considerably enhanced. Animation videos are an effective technique to make boring subjects like vocabulary instruction more interesting. Mobile apps can be an effective tool for language learning. The use of technology in language teaching can make the learning experience more engaging and interactive. Mobile apps that are user-friendly and tailored to specific learning needs can enhance learning outcomes.

LIMITATIONS

Despite the study's several serious flaws, new fixes were offered to solve them. The perspectives of participants, as well as the most recent developments in student learning and curriculum design, cannot be

accurately captured by a survey. Most likely, respondents to surveys don't always tell the truth. The lack of participants was the main issue, which made it difficult for mediators like students' learning experiences to match. If there had been more participants, the results would have been more precise. Even with the help of some organization authorities, it was difficult to integrate the data from the questionnaire method into a cohesive design. More people should participate in future studies, and case studies will be undertaken using cutting-edge methods in addition to surveys. "Focus groups", "surveys", and "interviews" may have all been used in this study. Surveys asking about other issues could receive a variety of responses from participants. Sometimes choices are made before fully reading a question or its responses. Respondents' predisposition to hide information or draw quick conclusions frequently affects the credibility of the statistics. It was challenging to generate better and more accurate results due to the severe limits imposed by the study's limited sample size. A continuous independent variable that has been employed throughout the entire body of research is teaching competency and awareness, language improvement and course satisfaction, attitude and personal feelings. There was yet another drawback to using a quantitative, closed-ended questionnaire. The study's cross-sectional design makes it difficult to prove a cause-and-effect connection. The sample size of a mixed-method research study may not be sufficient to extrapolate the findings to the full population. It can be difficult to combine qualitative and quantitative data, particularly if they have distinct structures and formats.

FUTURE RESEARCH

Future research can explore the long-term effects of micro-learning in English vocabulary curriculum and its impact on students' overall language proficiency. Future research can explore the effectiveness of teacher training programs for implementing micro-learning in English vocabulary curricula. Future studies should take advantage of longitudinal or field testing to show how the constructs are related to one another.

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