Application of Smartclass Software in EFL Classes at a University in Vietnam

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ABSTRACT

Smart classrooms have recently been used in English as a Foreign Language (EFL) classes due to their outstanding advantages compared to traditional ones. There is an ongoing debate over digital applications or specialized software in classrooms to optimize language teaching and learning. However, little research has been conducted on exploiting Smartclass (SC) software in EFL classes at the tertiary level. Thus, this action research addresses this gap by exploring teachers' and students' perspectives on utilizing SC software in EFL classes based on the Technology Acceptance Model (TAM) (Davis, 1989). Data were collected from (1) survey questionnaires with 145 English-major students, (2) two focus group interviews (six students/group), and (3) reflections in the forms of guided diaries and a group discussion among five teachers. With the focus on the perceived ease of use and attitude toward using constructs of TAM model, the study shed light on the impacts of SC software on promoting learners' engagement, motivation, autonomy, and interaction in EFL classes. In addition, great emphasis has been placed on the specific roles and skills of teachers and students with SC software. Theoretical contributions, pedagogically practical implications and suggestions for further studies were also discussed.

Keywords: Smartclass software, action research, EFL classes, TAM

Introduction

In language education, the integration of smart classroom technology has drawn a lot of interest as instructors seek to apply digital tools and software to create more dynamic, engaging learning environments and enhance educational outcomes (Dimitriadou & Lanitis, 2023; Kim & Jang, 2020). With a variety of cutting-edge features like multimedia capabilities, interactive whiteboards, and specialized instructional software, smart classrooms have demonstrated the potential to completely change the dynamics of language classes (Nguyen et al., 2024).

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Smart classrooms incorporate various technologies, including ICT, machine learning, and cloud computing, to improve engagement and empower students and educators (Kaur et al., 2022). However, despite the increasing adoption of these technologies, there appears to be limited recent research exploring the technology effectiveness within language courses, particularly at the tertiary level. This research gap seems to be particularly evident in the context of language education in Vietnam, where the application of technology into the classroom has been a topic of growing interest and investment, yet little research exists on best practices and teacher-student perceptions.

Since 2022, in response to social development and the demand for skilled graduates, a Vietnamese university has invested in two smart classrooms, each equipped with 36 computers and licensed Smartclass software (SC) from Canada-based Robotel, a leading global provider of educational solutions. As Robotel's website describes, SC includes 2 applications named SC Hub and SC Live. While SC Hub provides a smart learning environment for students with many functions such as open text, questions and answers, multiple choice, gap-fill, open recordings, comparative recordings, and video recordings; SC Live is a helpful tool for teachers to manage and evaluate students' performance. Robotel claimed the installation of SC software in over 10000 schools worldwide and for successful projects. However, there have been limited research studies on SC in EFL classrooms that allow students to practice all four English language skills. This software shows its effectiveness in improving students' interpreting skills (Nguyen et al., 2020), and interpreting quality (Nguyen & Nguyen, 2023), especially in enhanced student motivation, learner autonomy, and interaction between students and teachers (Nguyen et al., 2024). More academic evidence is needed to confirm whether this software is helpful in EFL classes at tertiary level.

Literature review

Technology in language teaching and learning

Technology has transformed dramatically and positively the sector of education. According to Pun (2013), technology in education mentions interactive applications, including hardware and software, that are computer-based, allowing teachers and learners to share ideas and information. Recent studies have demonstrated that both teachers and students generally have positive attitudes towards technology integration, which can promote students' engagement and performance, diversify instructional strategies, and expand learning opportunities (Adhikari, 2021; Souza, 2021). In particular, integrating multimedia into language teaching enables teachers to provide learners with a more immersive and interactive learning experience, encouraging students' greater motivation, interest, monitor their development (Vysotska, 2022), and overall academic performance (Johannes & Hashim, 2023; Pazilah et al., 2019). In support of this idea, Shehneela (2023) and Pourhosein Gilakjani (2012) emphasized that multimedia tools in EFL classrooms significantly enhance student interaction and participation, fostering students' positive attitudes towards multimedia-enriched lectures.

However, the fast development of technology may require language teachers to choose the right resources, tools and teaching methods to best fit their lesson plan, lesson objective as well as their student needs (Kessler, 2018). If used effectively, technology can help teachers be creative and design more realistic classroom activities and learners can grasp the essential skills required in the 21st century (Fitriah, 2018). Moreover, education with the support of technology can bring positive changes in both teaching and learning, material exploitation, and teaching curricula. The need for training learners with some required technological skills contributes to

optimizing modern technology in their learning process. Also, teachers can equip themselves with ICT skills to search and integrate helpful activities as well as to show pedagogical abilities (Moradi & Chen, 2019). Through technological applications, teachers can shift from being sole knowledge providers to facilitators and guides, thereby fostering learner autonomy and self-assessment skills (Fisher et al., 2014). Therefore, learners can acquire knowledge more actively. In the Vietnamese context, research conducted by Hoang (2019), Dao (2019), and Le and Lai (2019) has highlighted the importance of integrating technology into language learning. Students have better results in the four core English language skills but also experience a more dynamic and interactive learning environment characterized by enhanced teacher-student and student-student interaction. Furthermore, the use of technology contributes to heightened academic motivation and fosters greater learner autonomy.

One typical example of technology integration in education is the smart classroom model, which utilizes advanced educational technologies to enhance the learning experience. As defined by Lu et al. (2021), a smart classroom is equipped with high-end educational digital tools designed to offer learners opportunities to learn and experience in modern educational environments that exceed the capabilities of traditional classroom settings. Scholars such as Koper (2014), Jawa et al. (2010), Lu et al. (2021), Seh et al. (2021) and Tran (2021) have emphasized that a smart classroom basically requires the integration of internet-connected smart devices, instructional management software, and assistive technological systems that support auditory, visual, and interactive functions within the learning environment. Jawa et al. (2010), Sandhya et al. (2018), Phoong et al. (2019), Trinh (2020), Tran (2021), Lu et al. (2021) have collectively highlighted several notable advantages of smart classrooms: enhancing classroom management; increasing interaction and cooperation between students and teachers, as well as between students or groups of students; creating conditions for distance learning; providing a multi-dimensional learning experience; supporting assessment tests and self-study; avoiding chemicals that are harmful to health (chalkboards, oil pens, etc.); and strengthening skills including technology, communication, and teamwork.

Students' and Teachers' perspectives on technology application in language teaching and learning

Multimedia tools, with either common or specialized software, found by Shehneela's (2023) study on the students' attitudes, increase the Bangladeshi students' interaction, especially with their peers, and participation in EFL classrooms. The study also found their EFL classes with presentation software like Mentimeter or Powerpoint could create more interesting learning experiences. Kim and Jang (2020) studied teachers' perceptions of their technology integration in EFL classes in South Korea. Their findings revealed that specialized software enables learners to be more interactive, thus engaging in learning environments and getting higher educational results. The study also advocates other researchers that software itself may not bring about expected achievement because positive results depend on teacher practices. Moreover, if institutions would like teachers to integrate advanced technology in their teaching, teachers need to be both passionate and professional. Iranian EFL university students learn vocabulary better with a computer software (Pahlavanpoorfard & Soori, 2014). In a study by Wu (2019), 45 sophomore students experienced a semester of an Interpretation subject with the Rain Classroom application. The app allowed flipped lessons and students were found to interact effectively with teachers in face-to-face classes.

In Vietnam, Hoang et al. (2023) investigated the impact of Virtual Reality (VR) technology on authentic learning for tertiary students. The results showed that the students' perceived VR as

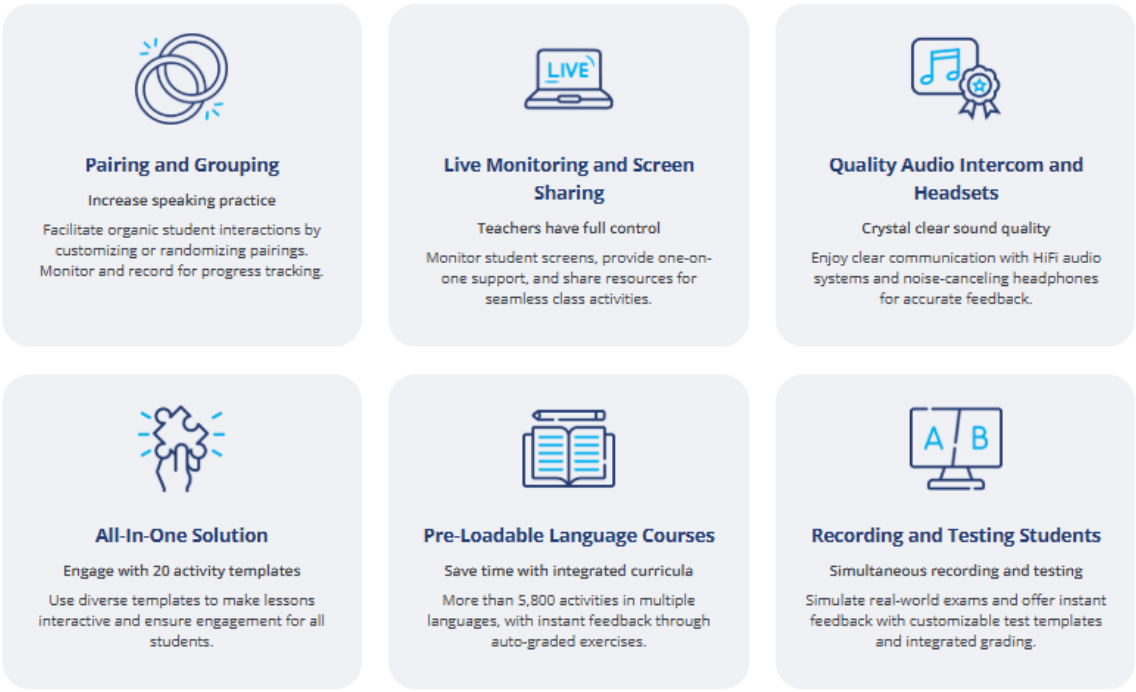
a potential technology to enhance opportunities for collaborative learning, reflective learning with peer feedback and teacher feedback, greater motivation and engagement in learning English. Son et al. (2024) examined natural science teachers' perspective on the application of VR and Augmented Reality (AR) in the Vietnamese education system. The study indicated that when compared to traditional teaching methods, the usage of VR and AR improved students' learning experiences by making them more immersive and engaging. Nevertheless, the teachers perceived their lack of a comprehensive understanding of the potential and applications of VR and AR in the classroom. Meanwhile, Internet-based applications like Kahoot! were found to motivate students and increase their learning outcomes (Truong & Dinh, 2024). They also emphasized the role of interaction features of the software and users' technology proficiency. Based on insights from students and teachers regarding technology in language instruction, SC software will be highlighted in the next section as a practical example of effective integration, and a summary of relevant supporting studies will also be provided.

Smartclass Software on language teaching and learning

SC software is developed by Robotel Inc, with features described in Figure 1 by the developer (Robotel, n.d).

Figure 1.

Key Features of the SmartClass Language Lab



The SC Hub application offers learners digital courses in a learning management system (LMS) where they can improve their language abilities by interacting with multimodal materials. Moreover, the practice tasks are allocated according to specified time constraints, enabling students to manage their learning. With such functions, SC software should be applied to teach four macro language skills. As claimed by the provider itself, SC products have been installed and explored globally, by over 10000 schools with successful projects and announced benefits.

However, there seems to be a limited number of academic evidence worldwide on the application of SC software. Botlík (2024) conducted a project with 41 Czech students who

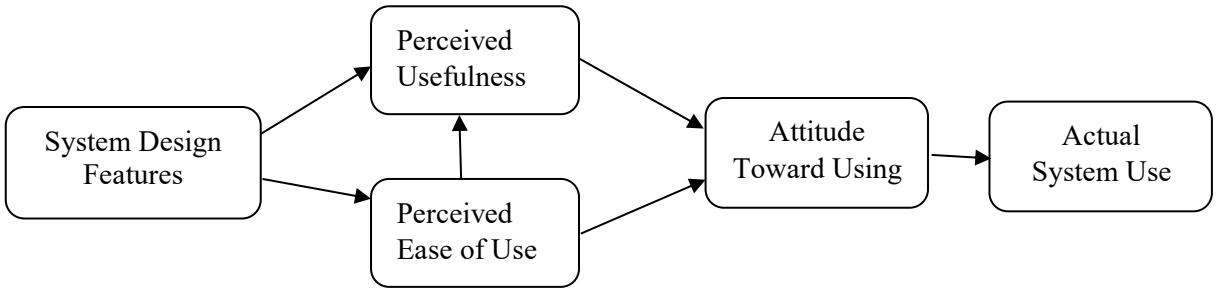
improved their German speaking skills. Leakey and Ranchoux (2006) carried out a quasi-experiment with French freshmen at a university in the UK. The participants practiced 4 language skills and gained positive results working in an SC software-equipped lab. Mosher (2023) used the SC software for Japanese students to practise English pronunciation. Aside from focusing on language skills and vocabulary acquisition, SC software has been installed for interpreting classes as in studies by Paulsen (2015) on Chinese Basic Interpreting Skills at Monash University, or Nguyen et al. (2024), Nguyen and Nguyen (2023) on Vietnamese-English interpreting or Lam et al. (2024) on Vietnamese-English and Vietnamese-Korean interpreting at a university in Vietnam.

Theoretical framework

The Technology Acceptance Model (TAM) was developed by Davis (1989). TAM is an information system modeling theory that explains how users decide to use a technology. TAM suggests that users accept or reject the use of a certain technology due to various factors namely perceived usefulness (PU), perceived ease of use (PEOU), and attitude toward using (ATU) (Figure 2). PU is defined as the degree to which a person thinks that utilizing a specific system would improve his or her performance. PEOU is referred to as the degree to which a person feels that utilizing a specific technology would not require much mental or physical effort. ATU is known as a person's positive or negative feelings of using a specific technology (Davis, 1989).

Figure 2.

Technology Acceptance Model by David (1989)



According to the model, the system design features have significant impacts on both PU and PEOU, whereas PEOU has a direct effect on PU and these factors affect ATU, leading to the decision whether to adopt the use of a system. TAM has been shown to have good validity and is one of the most prominent models used in technology acceptance research such as Harryanto and Ahmar (2019), Utami et al. (2023), Dizon and Barnes (2025), Alotaibi et al. (2025). Furthermore, this model is in favour of many researchers with the addition of some other elements such as Social Influence (Chocarro et al., 2023; Urip et al., 2022), habit and system quality (Rafique et al., 2020), intention to use and experience (Mailizar et al., 2021). In the scope of this study, the SC software design features, perceived ease of use, and the user's attitude were taken into account to evaluate the participants' intention to use SC to learn English language skills.

The review of previous studies has pointed out some research gaps. Firstly, SC software has not been fully utilized for four language skill practice, especially English language in the global context. Notably, there remains a lack of empirical research in Vietnam exploring the integration of SC software into teaching and learning all four English language skills. Another gap is that while numerous studies have examined the application of TAM in English language

learning, there seems to be few papers specifically focusing on the intersection of TAM, SC software, and the development of all four English language skills - an area that has not been extensively explored. Moreover, the implementation of SC software in the classroom may encounter both technical and human barriers. Technically, students and instructors may struggle with software accessibility. On the human side, key considerations may include instructors' adaptability to new technologies, their willingness to modify teaching methods, and their level of training in SC software. Therefore, this study is to fill the gaps by examining Vietnamese EFL students' and teachers' application of SC software for four English language skills through the lens of the TAM framework. The researchers seek the answer to the question: What are students' and teachers' perspectives towards applying SC software in EFL classes?

Methodology

Research site

This study was conducted at the Faculty of English Language (FFL) of a Vietnamese university during the first semester of the 2023-2024 academic year when the third-year English major students were attending a Basic English Interpretation course. Currently, the two smart classrooms with SC software are exclusively used for interpreting subjects, while other English skills courses are taught in regular classrooms with smart TVs, whiteboards, microphones, projectors, and sound systems. This means that students could not take full advantage of the features of the SC software to practice and develop their language skills. Therefore, the research team carried out ten additional trial lessons on English language skills in the smart classrooms using the SC software (with each class meeting for a 50-minute session every week), aiming to provide students with new learning experiences and assess improvements in English language skills acquisition and teaching quality.

Research methods and participants

This study employed action research due to its dual ability to facilitate positive changes in the classroom while being an integral part of the teaching process (Burns, 2010). The participants included 145 third-year English majors from the FEL of a Vietnamese university. They come from six different classes, each possessing a B1+ level of English proficiency.

The students participated in a four-credit Basic English Interpretation course using a blended learning approach, which included 30 online and 30 in-person periods at smart classrooms with SC software over 15 weeks (two sessions per week). Additionally, students were invited to attend one extra class focused on English language skills with SC software right after their two official sessions from the second to the eleventh week of the course.

The research involved all five teachers who teach Basic English Interpretation, each having at least five years of experience in teaching language skills and interpretation with SC software at the university. Each instructor was assigned to one or two classes, with approximately 25 to 28 students in each.

During language skills lessons, the students were assigned to work in pairs or groups through practice activities with the support of SC software. The lecturers monitored students' work screens, observed their practice, and provided one-on-one support when needed. Then peer feedback and teacher feedback were conducted on the SC system. All of these were expected to optimize language knowledge acquisition, while improving communication skills and enhancing student-lecturer and student-student interactions.

To uphold research ethics, all participants in this study took part voluntarily, with their privacy and anonymity safeguarded. The data collection and analysis process was conducted objectively, ensuring no impact on the participants.

Research tools and procedure

Teachers' reflections: Diaries and Group discussion

The researcher team collected data on the self-reflections of the five teachers. Using reflections, the teachers shared insights into their teaching experiences, methods, perspectives, influencing factors in the teaching-learning process, and proposed solutions (Mermelstein, 2018). The research team adapted the assessment criteria for smart classrooms developed by MacLeod et al. (2018) and TAM model by David (1989) which include the ease of use and attitude toward using, consisting of learning motivation and learners' autonomy. The content of the teachers' diaries (TD) was based on a predetermined template designed by the research team, comprising several sections:

- Teacher and class information
- Utilization of SC software in class activities
- Challenges related to smart classrooms (if any)

The teachers completed their reflections in electronic format during the ten weeks as described above. In the twelfth week, the research team collected the data and conducted a group discussion to evaluate the perception of students and teachers as well as their challenges while using SC software.

Survey questionnaires for students

The research team designed the questionnaire based on the framework established in the study by MacLeod et al. (2018) for several compelling reasons. First, both studies share the objective of evaluating the effectiveness of technology and smart classrooms in facilitating teaching and learning. Second, MacLeod et al. (2018) targeted similar participants, specifically investigating students' experiences with smart classrooms in higher education settings.

The survey questionnaire comprises three sections with different question formats to collect data on students' perceptions of SC software in EFL classes. Part 1 focuses on collecting personal information, including respondents' names, contact details (email or phone number), gender, and their willingness to participate in a follow-up interview after the survey. Part 2 consists of multiple-choice questions that examine two main factors: perceived ease of use and attitudes towards using. In addition to the pre-set items, this section also includes an 'Others' option, allowing respondents to suggest additional views or factors that they consider important. The study uses a 5-point Likert scale to measure participants' level of agreement with each statement because it has the advantage of reliability and test information compared to the 3-point scale, and is easier for respondents to understand than the 7-point scale (Aybek & Toraman, 2022). Moreover, it still ensures a balance between simplicity and accuracy to help participants easily choose the level that best fits their judgment (Kusmaryono & Wijayanti, 2022). The multiple-choice section was checked again for reliability with SPSS 20 as put in Table 1.

Table 1.

Reliability check for the multiple-choice section

Part		Number of items	Cronbach's Alpha
Ease of Use		9	0.873
Attitude toward Using	learner's motivation	4	0.909
	learner's autonomy	4	0.912

Part 3 includes open-ended questions, aiming to collect more detailed feedback from students about their experiences and suggestions for improving the SC software during the learning process. This helps provide additional qualitative data, shedding light on aspects that cannot be fully reflected by multiple-choice questions. It should also be emphasized that the items in the questionnaire were once used at a Vietnamese university, and reliability was confirmed as in Nguyen et al. (2024).

Online surveys are becoming increasingly popular as a research tool, allowing researchers to access faster data collection in an objective manner, a wider geographical reach, and larger sample sizes than face-to-face surveys (Burruss & Johnson, 2021; Topuzovska Latkovikj, 2020). In particular, students find online surveys appealing due to their flexibility and convenience (Muthuprasad et al., 2020). Recognizing these advantages of online surveys, in week 13 of the course, the research team administered the survey questionnaire via a link shared in the Zalo group for each class, aiming at collecting students' perspectives and actual use of SC software in EFL classes. The research team received 145 valid responses from a total of 166 student participants.

Focus-group interviews for students

Following the collection of results from the survey questionnaire, the research team purposely selected 12 out of 145 students who provided their contact information and agreed to participate in interviews. The selection criteria for student interviews included: students from diverse classes, those with ambiguous responses, those providing rich and detailed answers, and students whose responses were either aligned with or distinct from the majority. These criteria were to maximize the amount of collected information and ensure that the views and opinions fully reflected the aspects of the research problem. This approach is consistent with the method of selecting interview participants in qualitative research, where diversity and depth of information are important (Cleary et al., 2014; Subedi, 2021). These students were grouped into two sets of six, each representing different classes. The primary aim of the interviews was to compare and validate the responses given in the survey, as well as to gather additional insights into the students' perceptions and attitudes regarding the effectiveness of using SC software for learning and practicing English skills.

A semi-structured interview is considered valuable in qualitative research for its flexibility and depth in data collection. Researchers can gain insights into participants' thoughts, feelings, and experiences, adjusting questions based on their open responses (Boşnak, 2022; DeJonckheere & Vaughn, 2019; Thille et al., 2021). Therefore, the interview questions in the current study were semi-structured, based on the content of the survey, and included seven questions

evaluating the perception of the students as well as their challenges while using SC software. Additionally, students were encouraged to provide suggestions or recommendations for improving the SC software to enhance language skill practice within the SC context.

During the interviews, the researchers also posed follow-up questions based on the students' responses to gain a deeper understanding of their perspectives. Each interview was carried out in Week 15 of the course, lasting around 35 to 45 minutes. Both interviews were recorded to facilitate comprehensive data analysis. To ensure the privacy of the participants, the research team encrypted the identities of the 12 students, designating them as S#1 to S#12.

Data processing and analysis

As described earlier, in this study, the researchers collected three distinct types of data: reflections, survey questionnaires, and interviews. To ensure the accuracy and credibility of the findings, each dataset was systematically processed and analyzed.

Data from reflections

Data collected from participant reflections were analyzed using a thematic qualitative approach, based on a content coding framework to identify key themes that reflected teachers' experiences with SC software. Reflections were read carefully, categorized by themes, and coded to identify key trends in teacher perceptions. Coding was conducted within the research team through in-depth discussion to ensure consistency in identifying key themes. The reliability of the coding process was enhanced by cross-checking and comparison between team members, which helped ensure consistency in content categorization and clarified key perspectives expressed in the reflections.

Data from survey questionnaires

The research team used descriptive statistics and correlation analysis to examine the relationship between the research variables. SPSS version 20.0 software, a widely recognized statistical software (Rahman & Muktadir, 2021), was used to analyze the data collected from the survey questionnaire. Before conducting statistical analysis, data coding was performed to enhance the reliability of the results. Inter-coder reliability was assessed using Cronbach's Alpha to ensure the internal consistency of the scale (Malapane & Ndlovu, 2024). For quantitative analysis, the study applied Pearson correlation coefficient to assess the relationship between the ease of use of SC software and learners' attitudes. The analysis results include Pearson correlation coefficient, Sig. (p-value) to test statistical significance, Covariance to understand the degree of variation between variables, along with number of samples (N) () to determine sample size. This information was to provide insight into how SC software affects students' learning experiences in learning English as a second language. The responses from the questionnaire were compiled and presented in tables and charts to support effective comparison and analysis.

Data from interviews

The data collected from the interviews were processed using qualitative interpretation methods, focusing on identifying key themes from the participants' responses. The interview recordings were converted into text, then coded according to relevant themes to find common trends. Data collected from the research tools was triangulated to ensure the consistency of the research results. Following independent analyses, the data from the three research tools were synthesized and cross-examined to explore teachers' and students' perspectives on the ease of use and attitudes toward using SC software in EFL classrooms.

Findings

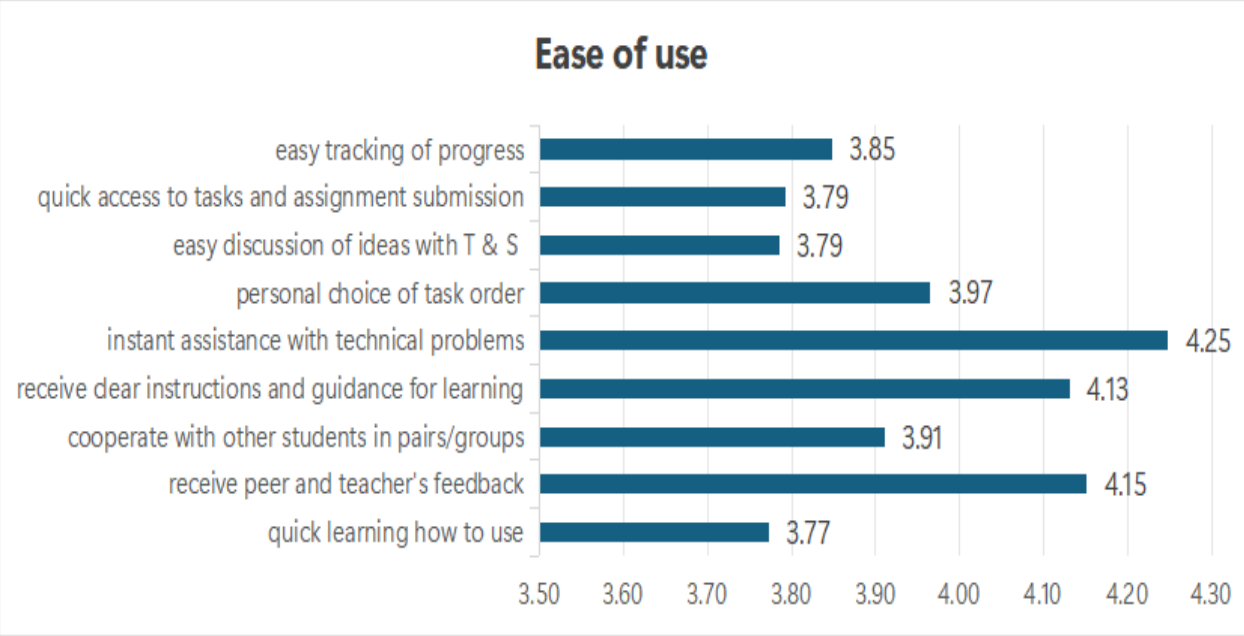
In this section, the researchers analyzed the perspectives of students and teachers regarding the use of SC software in EFL classrooms. Additionally, they outlined essential skills for teachers and students and provided recommendations for teachers' roles in EFL classes. The findings, derived from data collected through student questionnaire surveys and interviews; teacher diaries and the group discussion, were categorized into themes such as the perceived ease of use and attitude toward using the SC software, including learning motivation and learner autonomy.

Major findings

The perceived ease of use

Figure 3.

Learners' perceived ease of use



The learners' perceived ease of use was indicated in Figure 3. The highest-rated aspect was getting teachers' instant assistance with technical issues, scoring 4.25. Ranging from 3.77 to 3.97, other aspects of software design are perceived as moderate ease of use, flexibility in task selection, helpful monitoring of the students' progress, and support for discussion with teachers and peers. Besides, the students can easily receive feedback and guidance for learning thanks to the SC software, these factors were rated at 4.15 and 4.13, respectively. Through the software, the participants can also cooperate with each other in pairs or groups comfortably, with a rating of 3.91.

Through students' interviews and teachers' reflections (diaries and a discussion), the researchers recorded that when all devices are functioning properly, the SC software is effectively designed for foreign language learning. Firstly, the students and teachers affirmed that the software was user-friendly and easy to use. One student commented that the software was somehow quite similar to the LMS, which they were using. However, the thing he liked most about the SC was that he could record his speaking assignments directly on it, and all the tasks can be set with timer (S#5). Others added they preferred doing reading exercises on the

software because they could see the reading passage and questions at the same time, saving them from turning pages to pages to find information like in traditional classes (S#1, S#8, S#10). Adding to the point, all five teachers agreed that the software saved a lot of time when it enabled them to share the learning resources among classes.

Secondly, the software is flexible for the teaching and learning of foreign languages. In teachers' discussion, the teachers found it convenient to upload and evaluate students' assignments on the software (T#2, T#3, T#5). They could assess their students both online and offline. Besides, one teacher wrote in her diary that a striking feature of the SC software for studying English skills was that the exercises were separate approaches as follows: designed with various formats rather than just sentence completion and MCQs like in the current LMS. It also provided both auto-graded and open questions, which supported diverse file types such as text, audio, video, image, and pdf (TD#1).

The third reason making the SC software suitable for foreign languages is that it can contribute to better assessment and evaluation from both teachers and learners. One teacher shared the feature she liked most while teaching English skills with the SC software was time setting. Thanks to it, she could monitor her students' learning better and let students get used to time constraints, especially when it came to tests (T#1). Adding to the point, another teacher said although teachers could share the learning resources, the students could not. That prevented students from cheating in assessments (T#4). The software also allowed students to save their exercises throughout the learning process, enabling them to track their progress (TD#4).

Regarding technical issues, teacher discussion showed that they still faced challenges when using the software because it limited the number of accounts for both teachers and students. If the teachers wanted to create a new class, they were required to delete existing student accounts, leading to the loss of data from previous courses in the system.

Data from student interviews and teacher reflection showed that learning foreign languages with the SC software increased the teacher-student and student-student interaction through clear instruction, more feedback and collaborative learning. One student said: "*Learning English via SC, I can receive the instruction in both written or spoken form via peripheral devices such as headsets and microphones, which helps me understand it better and complete my assignment as required.*" (S#10). Another added:

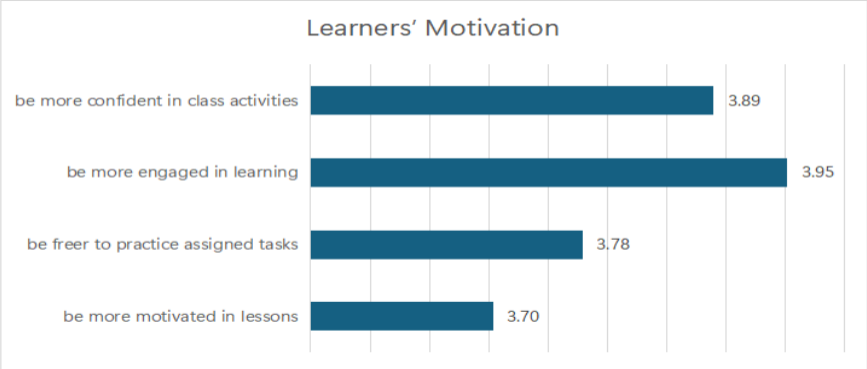
> *The software enables us to receive more feedback from our teacher and friends because we complete the assignment at the same time and then the teacher can choose some students' work to comment on or we can receive peer feedback through pair work or group work.* (S#12)

Through teachers' discussion, all the teachers shared that the software had a "LIVE" feature that allowed students to work in pairs or groups. The teachers could group students automatically or manually and the students could interact with each other via the software in real time. However, the LIVE function sometimes did not work properly due to poor internet connection and potential technical glitches or sluggishness (TD#4).

The perceived attitude toward using

Figure 4.

Learners' Perspective on Learner's Motivation



According to Figure 4, the students generally agreed that their motivation increased when learning with SC with the mean score running between 3.7 and 3.95. Specifically, students would be more confident, and more motivated during the semester, the SC software offered the students more freedom in the practice. The chart also suggests that engagement in learning is the strongest motivational factor.

Data from students' interviews and teachers' reflection confirmed the result from the questionnaire. The majority of students stated that using specialized software for learning language makes them more motivated and engaged. One student said the SC software brought them different experiences compared to traditional language classes with a variety of exercise formats; all students had the opportunity to practice language skills at the same time; they could do assignments with time limit, which they thought was helpful for the assessment; and the software interface was easy to use that allowed students to complete the exercises without turning from page to page (S#3, S#6, S#11, S#12). Besides, the students liked using this software also because it provided them with practical experience and skills to meet future job requirements (S#1, S#5). In the diary, one teacher mentioned: "*In the digital age, applying technology to teaching is an inevitable trend. Using the SC software helps increase students' motivation when they have opportunities to apply information technology in their studies and catch up with society development.*" (TD#3)

Figure 5.

Learners' Perspective on Learner's Autonomy

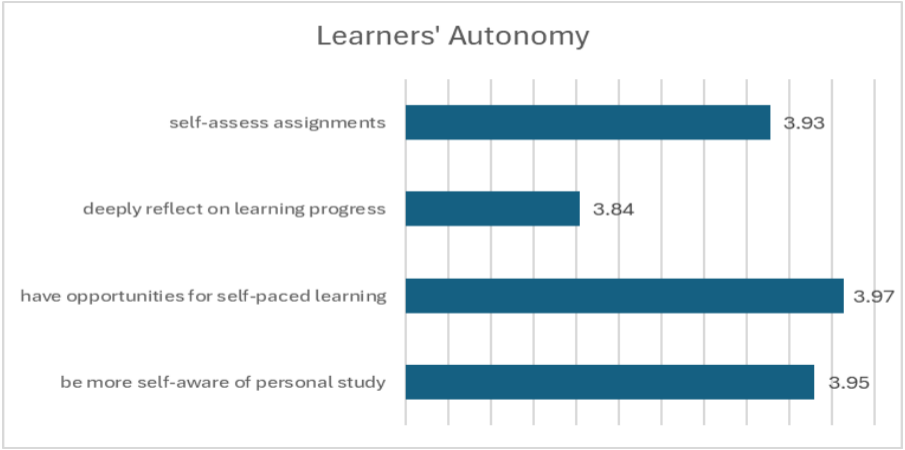


Figure 5 presents data on aspects of learners' autonomy. Overall, the students valued self-paced learning (3.97) and self-awareness (3.95) the most. The rating of 3.90 for self-assessing assignments received and 3.84 for 'deeply reflecting on learning progress' confirmed that the participants agreed on positive impacts of the skills-based activities with SC software in the smart classrooms on their autonomy. In other words, studying in the smart classrooms allows students to study on their own.

Answering the interviews, most students stated that the SC software had a positive impact on their learning autonomy through diverse auto-graded exercises, the ability to keep track of their learning progress and make plans for their own learning with better time management skills. The students also confirmed the result from the questionnaire when they agreed they could monitor their learning pace better than in traditional classes. The thing the most students liked about the software was it enabled them to record and self-assess their recording when studying speaking and pronunciation skills. In the teachers' diary, one noted "*To have the final version of recording for speaking skills, students often have to record multiple times until they listen back, self-evaluate their assignment and choose the best version*." (TD#5). Apart from self-assessment, the students also had more opportunities to listen to their peer's recordings and receive teachers' feedback compared to traditional language classes and reflect on their learning process, which also contributed to the learners' autonomy (Teachers' discussion).

Although the SC software was reported to have positive results on the students' autonomous learning, the teachers mentioned its drawbacks regarding self-learning time. Besides class hours, students were not allocated self-study time to practice with the SC software due to the lack of available classrooms and supervisors for self-study (Teachers' discussion).

Correlations between SC Ease of Use and Learners' Attitude toward Using

Table 2.

Correlations between SC Ease of Use and Learners' Attitude toward Using

		Learner Motivation	**Learner Autonomy**	**Attitude toward Using**
Ease of Use	Pearson Correlation	**.792****	**.836****	**.853****
	Sig. (2-tailed)	.000	.000	.000
	Covariance	.444	.436	.440
	N	145	145	145

As indicated in Table 1, the coefficients ranging from 0.792 to 0.853** illustrate strongly positive correlations between SC Ease of Use and learners' attitude in terms of motivation and autonomy. Higher figure of learner autonomy correlation (0.836**) can be understood as the software allow higher satisfaction with the students' ability to study on their own than on their motivation (0.792**).

Discussion

The findings of this study provide clear evidence that the TAM model is a suitable and effective theoretical framework for analyzing and interpreting teachers' and students' perspectives on

the use of SC software in EFL classes. The great emphasis was placed on two constructs: PEOU and ATU. Due to the defined scope of the research, PU was intentionally excluded to allow a more concentrated examination of the user interface experience and affective reactions associated with the platform's use.

Perceived Ease of Use

The study results affirm findings by Alotaibi et al. (2025) and Ullah et al. (2024) that PEOU as a key factor in students' willingness to adopt technology in language learning. Student participants highly appreciated the system's user-friendly interface and the convenience it brought to their learning, such as time-saving features, intuitive navigation, and access to varied task formats. These aspects strongly reflect PEOU. Teacher respondents also confirmed that the software reduced classroom management workload and supported efficient delivery and evaluation of language tasks. This aligns with Davis's (1989) original definition of PEOU, which emphasizes users' belief that a system requires little effort to operate (Ahmahi, 2018).

The study revealed that SC software enhances both teacher-student and student-student interaction through devices like headsets and microphones, offering engaging learning experiences (Kaur et al., 2022). Students appreciated the ease of assignment submission, which differs from traditional classrooms (Lu et al., 2021). Interaction through SC software, especially with written and spoken instructions, helped students understand and complete assignments effectively (Phoong et al., 2019; Pun, 2013; Sandhya et al., 2018; Truong & Dinh, 2024). Students also valued SC software ability to track their progress and practice time management under time constraints (Kumari & Denisia, 2013; Vysotska, 2022).

Nonetheless, technical issues, including poor internet connectivity and software glitches, were obstacles to group interaction and learning efficiency (Lu et al., 2021; Seh et al., 2021; Tran, 2021; Truong & Dinh, 2024).

Attitude toward Using

The data revealed that both teachers and students expressed positive attitudes toward the implementation of SC software. This finding aligns with the ATU construct in TAM, and supports previous research highlighting teachers' perceived instructional benefits (Adhikari, 2021; Souza, 2021), students' motivation and interest (Johannes & Hashim, 2023; Pazilah et al., 2019, Truong, 2024), and increased student engagement in classroom activities (Shehneela, 2023; Pourhosein Gilakjani, 2012; Truong & Dinh, 2024). The findings are also consistent with studies by Hoang (2019), Dao (2019), and Le and Lai (2019), which highlight technology's role in boosting learner motivation and autonomy.

Both student and teacher participants agreed that SC software contributed significantly to improvements in autonomy in EFL classes. A notable benefit of SC software was its support for self-paced, independent learning, aligning with educational trends favoring learner autonomy (Blaschke & Hase, 2016; Phoong et al., 2019). Increased student engagement and proactive behavior in completing tasks were noted, supported by simultaneous access to diverse exercises (Phoong et al., 2019). The software also promotes self-organized learning (Botlik, 2020) and allows students to monitor their development (Vysotska, 2022).

The study also emphasized the shifting roles and responsibilities of both teachers and students in optimizing SC software use within EFL classrooms. Teachers demonstrated a strong commitment to integrating technological advancements into their lessons by developing relevant information and communication technology competencies and designing varied and interactive activities. These findings echo previous research highlighting the critical role of teachers in effectively implementing educational technology (Kessler, 2018; Moradi & Chen,

2019; Truong & Dinh, 2024). To further support students' self-directed learning inside and outside the classroom, teachers provided detailed instructions, timely assistance, encouragement, and addressed learners' questions. This supportive role is consistent with findings from Fisher et al. (2014), which stress the importance of pedagogical and emotional scaffolding in technology-enhanced learning environments. Interestingly, the study also highlighted teachers' dual function as instructors and technical support providers. In addition to pedagogical responsibilities, teachers were frequently recognized by students for their ability to troubleshoot basic software-related issues in class. This underscores the need for teachers to possess a certain level of technical proficiency with SC software to ensure smooth instructional delivery.

In terms of student preparedness, both teacher and student participants agreed that learners must acquire basic technological skills to use the SC software effectively, particularly during in-class assignments and examinations. The importance of digital competency is also noted in the work of Fitriah (2018), who emphasized students' need for autonomy in resolving routine technical issues during learning activities. However, limited access to smart classrooms with SC software outside scheduled hours was also reported. Therefore, the need for class supervision restricted extended self-study, calling for policy adjustments to expand the SC software access. According to TAM, such barriers (if not addressed) may undermine users' attitudes and reduce the likelihood of long-term adoption. These findings underscore the importance of infrastructure investment and system reliability to ensure the full functionality and accessibility of SC software in EFL classes. Despite these challenges, both students and teachers remained generally optimistic about the potential of SC software. The findings suggest that positive ATU remained robust, reinforcing the TAM model that attitude is a strong predictor of continued use, even in the presence of occasional technical difficulties.

Theoretical contributions

This study makes significant theoretical contributions by affirming the applicability and adaptability of TAM in the context of technology-enhanced EFL classes, particularly through the implementation of SC software. While TAM is often extended through constructs such as PU and Social Influence (Chocarro et al., 2023; Urip et al., 2022), or habit and system quality (Rafique et al., 2020), intention to use and experience (Mailizar et al., 2021), this study confirms that even a streamlined TAM framework focusing solely on PEOU and ATU offers meaningful insights into technology adoption. The results reinforce TAM's theoretical flexibility and practical applicability, especially in research contexts that prioritize usability, user attitudes, and affective engagement over performance-related outcomes.

Practical implications

A key practical implication of this study is the potential use of SC software in English language teaching and learning. Moreover, there is a need for systematic professional development programs to equip language teachers with both pedagogical and technical competencies for effectively using SC software. As the findings highlight, teachers play a dual role, not only as instructors but also as immediate technical supporters for students during SC-integrated lessons. Therefore, teacher training should go beyond basic software operation to include activity design, troubleshooting skills, and strategies for fostering student autonomy and motivation in a technology-mediated environment. Additionally, the institution should allow supervised self-study hours so students can engage in self-paced and independent learning, which has been shown to improve learner motivation and autonomy. These steps will help maximize the

benefits of SC software and promote sustainable integration of educational technology in EFL contexts, especially in Vietnam.

Limitations and suggestions for future research

Apart from valuable insights into the application of SC software in EFL classrooms, some limitations should also be recognized. First, the research site was a public university in Vietnam, possibly constraining the extent to which the findings could be generalized to other educational institutions with different technological conditions or pedagogical cultures. Second, the study focused on two constructs of TAM, deliberately excluding PU and even some external variables such as social influence, intention to use, or learners' experience. Third, technical constraints, including SC software malfunction or unstable internet connectivity, may have influenced participants' perspectives on the SC software in EFL classrooms.

The authors suggested further research on multiple institutions with varying educational contexts to increase the external validity. Moreover, the extended TAM framework with above-mentioned variables is recommended. It may be possible to conduct longitudinal studies to examine changes in learner's attitude and performance over time with the use of SC software. Finally, exploring the impact of SC software on specific language skills (e.g., writing fluency, listening comprehension) or on such different participant demographics as age, gender, language level, and learning styles could offer more targeted pedagogical implications.

Conclusion

This study explored the application of SC software in EFL classrooms at a Vietnamese university, examining both students' and teachers' perspectives through the lens of TAM. By focusing on the constructs of PEOU and ATU, the research provided empirical evidence for the effectiveness of SC software in enhancing learner engagement, motivation, autonomy, and interaction. Both student and teacher respondents appreciated the user-friendliness and convenience of the software, which created an interactive and engaging learning environment. Students were not only able to track their learning progress but also improved more effective time management skills, thereby promoting self-learning and responsibility in completing assignments. It is clear that if students find the learning software friendly, they would be highly likely to be more motivated, interactive, and autonomous in their study.

However, to optimize the effectiveness of the software, teachers need to design diverse lessons and equip themselves with IT skills to support students in solving technical problems. Software problems and poor internet connection were identified as barriers that need to be overcome to maintain learning motivation. It is noteworthy that teachers not only act as instructors but also as technicians, ready to support students when they encounter difficulties. This stresses the importance of developing technology skills for teachers. Students also need to be equipped with the necessary skills to navigate and troubleshoot software effectively, especially during exams. This will help reduce stress and increase students' confidence in using technology in their learning. Finally, it is proposed that educational institutions invest in infrastructure and develop supportive policies to facilitate the use of SC software. These efforts will not only boost students' ability to learn independently but also encourage better interaction between teachers and students during lessons. Learner-centered and technology-enhanced education is emphasized. The study thus reaffirms the relevance and flexibility of TAM as a guiding framework for evaluating educational technologies in EFL settings.

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APPENDIXES

STUDENT SURVEY QUESTIONNAIRE

Part 1: Personal information

a. What is your name?

_____

b. What is your email address/ phone number?

_____

c. What is your gender?

Male Female

d. Are you willing to take part in an interview after this survey?

Yes No

Part 2: Survey questions

Please make a check mark from 1 to 5 in the appropriate boxes to indicate your demographics. The order of numbers represents the degree of agreement from low to high.

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

Items	1	2	3	4	5
When using SC in language learning courses, I can …					
I. Learners' perceived ease of use					
1. learn how to use it quickly.					
2. easily keep track of my progress.					
3. quickly receive tasks from my teacher(s) and submit my assignments.					
4. easily discuss my ideas with the teacher(s) and other students.					
5. flexibly choose any tasks to complete.					
6. get the teacher's instant assistance with technical problems.					
7. receive clear instructions and guidance for learning.					
8. cooperate with other students in pairs or in groups.					
9. receive peer feedback and teachers' assessment.					
10. Others: ……..					
II. Learners' attitude toward using SC software					
Learning Motivation					
11. be more motivated in lessons.					
12. be freer to practice assigned tasks.					

13.	be more engaged in learning.					
14.	be more confident in class activities.					
15.	Others: ……..					
Learners' Autonomy						
16.	be more self-aware of my study.					
17.	have opportunities for self-paced learning with available resources and materials.					
18.	deeply reflect on my learning progress.					
19.	self-assess my assignments.					
20.	Others: ……..					

Part 3: Do you have any other comments on the application of SC software in EFL classes?

STUDENT INTERVIEW QUESTIONS

1	Do you like learning foreign language(s) with Smartclass software? Why?
2	In your opinion, how effective is Smartclass software in your language learning in cases that learning facilities work well? Give some examples
3	What learning activities do you like on Smartclass software?
4	What roles should lecturers and students play when teaching and learning with Smartclass software?
5	What skills should lecturers and students have when teaching and learning with Smartclass software?
6	What are challenges in learning with Smartclass software?
7	What are your recommendations to increase the effectiveness of learning with Smartclass software?

TEACHER DIARY

Date: …… Room: ……

Skill: ……Teacher's name: ……

1. Use of Smartclass software

What is the SC software used for? (tick if yes)		Time (minutes)
Teaching	□	
SS: Group work	□	
SS: Pair work	□	

SS: Individual work □	

2. Problems with Smartclass software (if any)

Brief description of the problem(s) (E.g. low volume, unable to record)	
What could be the cause(s) of the problem(s)? (E.g. teacher's or students' technical skills, unclear instructions)	
What can be done as solutions?	

3. Class activities with Smartclass software:

Activities group/ pair/ individual	**Good points** - Activity design - Ease of Use: +Interaction Ss-Ss +Interaction Ss-T - Attitude toward using: + Ss Motivation + Ss Autonomy	**Need improving** - Activity design - Ease of Use: +Interaction Ss-Ss +Interaction Ss-T - Attitude toward using: + Ss Motivation + Ss Autonomy	**How to improve** - Activity design - Ease of Use: +Interaction Ss-Ss +Interaction Ss-T - Attitude toward using: + Ss Motivation + Ss Autonomy
1.			
2.			
3.			

Biodata

Thao Nguyen is a lecturer at School of Languages and Tourism, Hanoi University of Industry, Vietnam. She has nearly 20 years of experience teaching Interpreting and Translation. She also works as a freelance interpreter. Her research interests include interpreting, translation, and English language teaching. She can be reached at thaontm@haui.edu.vn with Orcid: https://orcid.org/0000-0002-4456-572X.

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