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Implementation of Tech Tools in ESP Training from Learners' Perspectives in Vietnam

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Abstract
The use of technology in ESP training has become increasingly prevalent, offering potential benefits such as enhanced engagement, interactivity, and personalized learning experiences. However, despite the growing availability and advancements in tech tools, there is a need to investigate the specific implementation of these tools in ESP training from the learners' perspectives and with more empirical evidence. Hence, this study aims to (1) explore the learners' experiences by using tech tools in ESP training at Ho Chi Minh University of Banking (HUB), and (2) examine students' attitudes towards these innovations. 40 non-English-majors participated in the study during the second semester of the 2023-2024 academic school year. Final test analysis (ANOVA) and questionnaire survey were exploited for data collection and data analysis. The results showed that tech tools not only were beneficial to enhance students' performance in ESP training but also enhanced learners' engagement and confidence towards the learning process. This means that in order to suit varied learning needs and improve various aspects of different skills in English language learning, a wide range of tech tools should be combined rather than using only one kind of technology over the whole course so that we can ensure positive learning outcomes in the ESP educational settings.

Keywords: ESP Training, Tech Tools, Blended Learning, Learners' Performance, Learners' Perspectives

1. Introduction

In 2015, UNESCO released their overall vision for 21st-century learning, regarding incorporating digitalisation as a key focus in teaching and learning practices (University of Oxford International Strategy Office, 2015) [17]. Thus, this emerging idea advocates for greater and appropriate use of technology to promote personalisation, collaboration, and communication for developing learners' core skills and competences within the contemporary educational paradigm. Such a shift became more prevalent during the Covid-19 outbreak when the shift to online teaching, forced the universities to use various technological tools as a solution to ensure the effectiveness of distance learning.ESP training, which focuses on developing language skills for specific disciplines or professions, has also witnessed a surge in the use of technology for instructional purposes. Tech tools such as online platforms, multimedia resources, virtual classrooms, and mobile applications offer numerous possibilities for enhancing ESP training (Sari *et al*., 2021) [14]. However, For Vietnamese educators taking charge of academic ESP modules, there are still struggles with the digitalisation, online learning, blended learning, and technological transformation so that effective teaching and learning methods could be found to adapt to the new situational context (Nikou & Maslov, 2021) [11]. In addition, it seems that most studies focused mainly on one kind or two kinds of tech tools, which does not provide a comprehensive picture of the actual impact of tech tools in reality. In other words, empirical studies in ESP training with various technological innovations are still scarce, especially in the Vietnamese setting. Hence, it is useful to understand how various tech tools are exploited to support the learning process, how effective they are towards learners' performance and perceptions in ESP studies, and in the Vietnamese context. This needs to be established first and before any recommendations can be made as a contribution towards the literature of online learning for better implementation.

In short, this study examines the use of tech tools in ESP training within the local Vietnamese context (especially in Ho Chi Minh City) to answer three research questions:

1. To what extent did tech tools influence the final exam results of HUB students in the experimental class compared to those in the traditional classes (using traditional instruction)?
2. What were the perceptions of HUB students towards the effectiveness of tech tools in ESP classes?

2. Literature review

2.1 Blended learning

2.1.1 Definitions and characteristics

Blended learning (a.k.a. hybrid learning, technology-mediated instruction, web-enhanced instruction, or mixed-mode instruction) is a paradigm of modern education techniques relying on the use of both physical classrooms and multiple technological systems to mediate the teaching process and help learners acquire the necessary knowledge and skills (An *et al*., 2021; Singh & Thurman, 2019) [16]. This implies that blended learning is a pedagogical method to shift instructions to a learner-centered model in which class time explores topics in greater depth and creates meaningful opportunities for practice, while educational technologies such as video lessons, online exercises, or project-based digital research are exploited for both knowledge delivery and skill mastery. Thus, effective delivery of blended learning should consider how the whole learning process is structured, including the careful consideration of all relevant factors such as instructors' and learners' attitudes, learners' preferences and acceptance, learners 'perceived usefulness and perceived ease of use mediated by exploited technologies, instructional learning materials and contents, the social interrelationships between stakeholders (e.g., students, instructors, schools), and the diversity in assessment activities (Alea *et al*., 2020; Grabinski *et al*., 2020) [2, 6].

According to Md Hassan *et al*. (2020) [10], an effective blended learning environment should take into consideration of four following elements:

Table 1: Characteristics of effective blended learning environment

Learner-centred	Knowledge-centred
- Active learning experiences with meaningful activities and space for individualised reflection - Well-designed classroom procedures for more learners' contributions - Consideration for learners' interactions or internalization with the lessons - Significant use of diagnostic tools and learner-centred activities to make pre-existing knowledge structures accessible to both teacher and students - Take into account students' preconceptions and cultural perspectives	- Good use of real-life practice and scaffolding activities - Consideration for in-depth and integrated understanding of the subject - An alignment between learning outcomes, teaching contents, materials, and classroom activities - Coherently organized and connected knowledge transfer and skill practice - A connection between learners' knowledge and market demand
Assessment-centred	**Community-centred**
- Varied assessment methods - An exploitation of various online computer-marked tools and collaborative learning techniques - Use of self-assessments, peer assessments, and online automated tutors	- An awareness of increasing more interactions inside and outside the classrooms - A balance of individual work and group work with equitable division of task contributions. - Frequent encouragement of learners' autonomy and responsibility within the community

Md Hassan *et al*. (2020) [10] asserted that these aforementioned elements should be localised and configured to adapt to the specific contextual and cultural requirements. Thus, these aspects should be considered as key factors to examine the affordances or challenges of online learning environment if a researcher would like to provide a detailed and comprehensive investigation into this field in a particular context. Moreover, Wilson stated that "*learning space continuum has two types of conditions at its extremities, wholly independent self-directed unstructured learning at one end and structured teacher-led didactic learning environments at the other*" (2009, p. 20). Within the scope of the study, the structured teacher-led didactic instructions are the main focus as it suits the current practice in the Vietnamese context.

For the last ten years, Internet-based hybrid teaching, technology-assisted language learning, and learning online have emerged as innovative and effective learning tools (Kusmaryono *et al*., 2021) [9]. After the COVID-19 outbreaks in Vietnam in 2021, online teaching and blended learning have been implemented in most universities and other training institutions, and the main concern is not only whether hybrid teaching–learning methods can provide high-quality education, but also how academic institutions will be able to implement blended learning on such a large scale to suit various learning needs as well as to adapt to the local settings (Ho *et al*., 2020) [7]. In addition, the recent emergence of more distance learning in Vietnam also requires more understandings of how various technology could be facilitated to maximise the learning impacts in English language training and specialised subjects for better curriculum designs (Alea *et al*., 2020; Pham *et al*., 2020) [2, 12].

2.1.2 ESP training

English for Specific Purposes, an area of English language learning emerging since 1960s with participants across a wide range of academic, occupational and business categories (Hutchinson & Waters, 1987), can be defined as "*a learner-centred approach which motivates learners through addressing their specific needs in learning the language*" (Ibrahim, 2010, cited in Nguyen, 2015, p. 227). This means ESP training is an applied sub-branch within the ELT discipline with the purpose of educating high-quality employees to meet the ever-changing market needs. Elements of ESP training are summarized and adapted from the study of Sari, Faridi, Rukmini, and Mujiyanto (2021) [14] as follows:

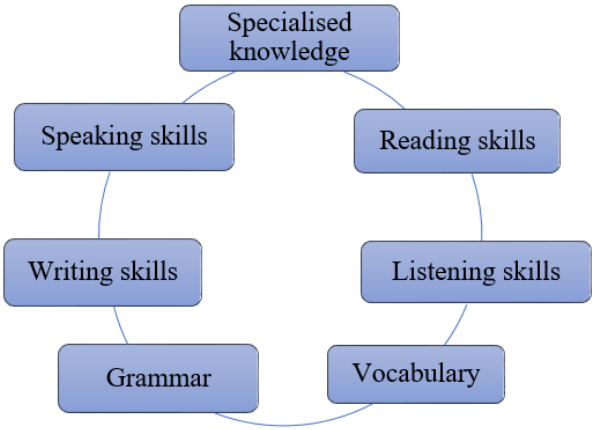

Fig 1: Elements of ESP training

2.1.3 Benefits of blended learning in language learning and in ESP training

There have been numerous studies about the impacts of blended learning all over the world and in Vietnam. On a positive side, blended learning could promote a learner-centred, self-paced, and cost-effective way of learning (Fatoni *et al*., 2020) [5]. Besides, learners could be involved during the video-based online lessons and used technological devices which promote their motivation towards learning English (Nikou & Maslov, 2021) [11]. In their quantitative study with 131 Finnish undergraduates, Nikou and Maslov found that students were able to learn independently as they were motivated continuously throughout the teaching process. Besides, through his online survey with 670 Polish first-year undergraduates, Cicha (2021) [4] claimed that this approach improved students' participation in classroom activities, enhanced their feeling of pleasure in this form of education, and fostered a sense of self-efficacy. This study is in line with the studies of Rosyada and Sundari (2021) [13] and Sarikaya (2021) [15], who demonstrated that their students were able to pick up various strategies throughout the lessons to accomplish their goals with the help of technology. However, the question as how the technology is configured in a particular module to foster the learning process and how technology impacts learners' skill mastery of that subject is still left unanswered.

In terms of the educational practice for ESP training, studies revealed that different platforms and means of communication were used in a hope to facilitate learners' performance in certain ways. First, some authors state that tech tools could play a pivotal role in enhancing learner's peformence in ESP learning significantly. For example, Thomas L. Davies, Angeline M. Lavin, Leon Korte (2018) conducted an experimental study of tech tools in ESP students at the 100 (first year), 200 (second year), 300 (junior level), 400 (senior level) and 700 (graduate level) from Midwestern university. Students were asked how the moderate or extensive use of technology (such as PowerPoint) would impact the overall quality of a "hypothetical course with the same features and characteristics of the course" in which they received the survey as well as how they might evaluate the instructor. Students were also asked how technology would impact their own learning. Through his final test results showed Educational Technology could improve their performance more than 80% of students score 8 when studying at school considerably.

Second, Kaite J. Carstens (2021) conducted an experimental study of tech tools in ESP learning on 12 non-specialist English students at a local school district in central Illinois. With constant change in the world of technology, classrooms are becoming more and more technology-intensive and must incorporate it into the student learning process. Technology enhances many learning opportunities and comforts students but can also be an over-dependent tool and has the potential to affect fine motor development and problem-solving skills pupil. This research helped identify how technology affects student learning. Through their final test results showed, Educational Technology could improve learners' performance in ESP learning skills considerably.

In addition, a number of scientific studies prove that technology helps students' perception better. For example, Fatime Balkan Kiyici (2018) conducted an study of technology on 58 primary school fourth-grade students attending to a public school in Malaysia. The study was designed as phenomenology method. It was through picture drawing, metaphors, Word Association Test, and semi-structured interviews. The findings showed that the students had similar perceptions of technology and they associated the concept of technology rather with higher tech products. They also defined technology as things that make things easier and emphasized that it has a lot of positive aspects than negative.

Finally, Francesca Gottschalk (2019) conducted an experimental study of tech tools in ESP learning on 58 students learning in France. Children in the 21st century are avid users of technology - more so than generations past. This rise in use has led to much attention on the consequences of technology use, and how this impacts children's brains and their socio-emotional, cognitive and physical development. It also highlights where more quality research is needed to better understand the impact of technology on learning process of children, and support development of effective, evidence-based guidelines. His final test results showed that Educational Technology might significantly boost learners' perception in ESP learning skills (about 70% student prefer learning that incorporates technology rather than traditional learning methods).

To summarize, many studies have been conducted to investigate the benefits of tech tools in ESP training, but they seemed to focus mainly on one or two kinds of technology, which does not provide a comprehensive picture for effective learning environments. It means that technology seemed failed to meet all the characteristics of effective blended learning environment. Moreover, very few studies have been conducted in the field of (ESP) that explicitly examine the impact of multiple tech tools on each component and subskill of ESP learning. Hence, this research serves as a compelling rationale for further exploration in this area.

3. Methodology

This study was conducted from February to May, 2023 at Ho Chi Minh City University of Banking m. 162 non-English majors participated in the study with four research groups (one experimental class and 3 control classes). They were third-year students who had studied an ESP1 course in the previous semester and this was their second course (ESP2) of the Bachelor Programme. The students were assigned to sections by their choices of online registration

based on their schedules and preferences, which meant that it was unfeasible to form the experimental and control groups on purpose. They could experience certain equivalent conditions such as location, quality of teachers, curriculum contents, instructional textbooks and language of immediate environment. Hence, the pedagogical strategies which form the independent variables are the contemporary and the flipped methods. Students who withdrew from the class before taking the final exam and who did not agree to participate were excluded from this study. Table 2 provides information about the participants of the experimental class (flipped class) and control classes.

Table 2: Distribution of participants

Gender	Male	Female	Total
Experimental class	18	22	40
Control class 1	14	26	40
Control class 2	24	19	43
Control class 3	13	36	39

These students were at pre-intermediate level (TOEIC 400 or equivalence), and the class met once a week for five academic periods (one academic period equals to 45 minutes).

Four research groups were established in this study. The blended language learning with the use of multiple tech tools was implemented to one experimental group while the control groups studied ESP with three other different teachers. The control classes were mainly subjected to the traditional format in which learners normally began their lessons with homework submission and correction. Then, they heard lectures over the subject matters/ vocabulary/ grammatical structures with the use of PowerPoint presentations and examples relating those topics. Afterwards, they did exercises for skill practice (such as listening, reading, writing and speaking). Group-work opportunities were also used to enhance learners' collaboration and the instructor might exploit contemporary education methods to make the lessons as interactive as possible. It means these activities could involve certain elements of active learning styles (i.e., task-based approach, project-based learning, or group presentations) and the use of some technology.

The experimental group was exposed to the blended learning environment as described in Table 3 below.

Table 3: Tech tools exploited in the experimental class

Tech tools	Descriptions
1. Pre-made PPT and videos	New knowledge and lessons were introduced via the use of PPT and pre-made videos.
2. Teacher-made gamified exercises with the use of Kahoot, Quizizz, Nearpod, and Gimkit	These digital gamified exercises were exploited for lesson revision to check learners' understanding of ESP vocabulary and grammar learning. They could be used at the beginning or at the end of the lesson.
3. QuillBot and Turnitin	These online writing tools were used to help learners foster their writing skills, develop their ideas, and check plagiarism.
4. Eng breaking – Speaking	This app was used to help learners practice speaking skills while competing with the AI voices and/or other online learners.
5. Teacher-made app for Reading and Listening	These apps were designed by English lecturers of HCMC University of Banking to meet specific learners' needs as well as to ensure that the content of these reading and listening texts are tailored to the teaching syllabus and the student's majors.

Two research instruments were used in this study. First, an analysis of students' exam results (pre-test and post-test) was conducted between the experimental class and traditional classes. First, testing results in the previous module (ESP1 final exams) were collected and analysed to test the homogeneity of participants as a pre-test. After the treatment had been implemented for one semester, results of end-of-course ESP2 tests were gathered for analysis. All the tests were taken from the school's test bank validated by an expert committee to ensure certain issues of learning contents, testing validity and reliability. The final tests included four skills: Reading, Listening, Speaking, and Writing. Afterwards, individual student's scores were analysed by the SPSS 22.0 data editor as the dependent variable. Learning environments (control classes and traditional classes) were the independent variables and were entered as a fixed factor. Various mathematical procedures (e.g., ANOVA, effect size, Test of Normality, and Test of Homogeneity of Variances) were used to determine whether or not there were statistically significant differences in the test scores of the groups. Therefore, this helped to shed light on whether the use of these tech tools could bring about any improvements in learner's achievements.

Second, the study adopted a 22-item survey to examine learners' perceptions towards the blended classroom. On the last day of the semester, the questionnaires written in English were distributed directly to this experimental group and administered in class. After explaining the objectives of the study, the researcher read each item and explain in Vietnamese so that the students could understand them thoroughly. It took about 25-30 minutes for the students to complete the survey. Afterwards, the data were analysed quantitatively by descriptive statistics and the student's names were replaced with pseudonyms to ensure anonymity.

4. Results and Findings

4.1 Students' performance in the tests

This subsection explored the statistically significantly differences of the grades between the experimental class and control classes. First, Table 4 illustrates an analysis of the pre-test results in the previous ESP1 exam.

Table 4: Pre-test results (N=162)

	N	Mean	Std. Deviation	95% Confidence Interval for Mean		Min	Max
				Lower Bound	*Upper Bound*		
Experimental Class	40	8.02	0.59	7.85	8.239	6.5	9.1
Control Class 1	40	8.03	0.63	7.83	8.25	6.6	9.1
Control Class 2	43	8.07	0.42	7.92	8.21	7.2	9.0
Control Class 3	39	7.91	0.59	7.68	8.05	6.5	8.8
One-Way ANOVA							
	Sum of Squares		**df**	**Mean Square**	**F**	**Sig.**	
Between Groups	0.94		3	0.31	0.097	0.4	
Within Groups	51.02		158	0.32			
Total	51.96		161				

Results show that the Minimum and Maximum scores of the classes are quite similar and the significance level is 0.4 (>0.05), implying that there is no statistically significant difference between the experimental and control groups in terms of their language proficiency.

After the treatment process lasted for nine weeks, an end-of-course ESP2 exam was administered to the students in four groups. In the experimental class, 16 students got High Distinction mark (9.0 or above), the highest score is 9.8 while two students got the lowest score of 7.0. Likewise, in the control class 1, five students got High Distinction mark, one student obtained the highest score of 9.5, one student got the lowest score of 4.6, and 6 students had the score from 7 to below. In control class 2, two students got High Distinction mark with the highest score of 9.0, one student got the lowest score of 6.6, and 6 students had the score from 7 to below. In control class 3, no student got High Distinction mark, the lowest score is 6.6 with one student, and eight students had the score from 7 to below. Moreover, the students who got at least 8 marks (Distinction grades at this university) in the experimental class outnumbered those in the control classes, at 34 compared with 24, 18, and 13 respectively.

Table 5 illustrates the descriptive analysis of the data including Mean, Min, Max, Std Deviation, Error and Confidence Interval. The scores of students in the experimental group ranged between 7.0 to 9.8 with a Mean of 8.55 and a Standard deviation of 0.78. 40 subjects in the control class 1 gained a range of scores between 4.6 and 9.5, with a Mean of 7.98 and a Standard deviation of 0.96. Likewise, 43 subjects in the control class 2 gained a range of scores between 6.6 and 9.0, with a Mean of 7.8 and a Standard deviation of 0.59. Finally, 39 students in the control class 3 gained a range of scores between 6.6 and 8.8, with a Mean of 7.66 and a Standard deviation of 0.54. It can be clearly seen that figures of the Mean, Min, Max, and Confidence Interval of the experimental class are all higher than those of the control classes, indicating that the experimental group had a better performance on the final exam.

Table 5: Post-test results (N=162)

	N	Mean	Std. Deviation	95% Confidence Interval for Mean		Min	Max
				Lower Bound	*Upper Bound*		
Experimental Class	40	8.55	0.78	8.3	8.80	7.0	9.8
Control Class 1	40	7.98	0.96	7.67	8.29	4.6	9.5
Control Class 2	43	7.80	0.59	7.62	7.98	6.6	9.0
Control Class 3	39	7.66	0.54	7.48	7.83	6.6	8.8

Table 6 below shows the Levene test of Homogeneity to check the equality of variances required for the choosing of an appropriate technique. The data revealed that that the assumptions were met since the Sig. (0.02) is more than 0.05. It means that there were no outliers, the data followed a normal distribution (the empirical rule), and within-group variance was equivalent across the classes.

Table 6: The Homogeneity tests results (N=162)

Levene Statistic	df1	df2	Sig.
3.377	3	161	0.020

The use of one-way ANOVA was also conducted to explore the differences between the grades of the experimental class and control classes as showed in Table 7 below, and the result indicated that there was a statistically significant difference between the classes (F = 12.683, Sig. = 0.000 < .05).

Table 7: One-way ANOVA analysis of post-test results (N=162)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	19.716	3	6.572	12.683	0.000
Within Groups	83.424	161	0.518		
Total	103.140	164			

Since the p-value is 0.000, a Multiple Comparison was exploited to provide further insight into this issue. Table 8 displays the statistically significant difference between the grades of the experimental class and each individual control class. It can be clearly seen that the p-value in each case is quite similar, confirming the reliability of the technique and the effectiveness of this blended classroom.

Table 8: Multiple Comparison (N=162)

	(I) Class	(J) Class	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Tukey HSD	**Experimental Class**	**Control Class 1**	0.59*	0.159	0.001	0.18	1.00
		Control Class 2	0.78*	0.157	0.000	0.37	1.19
		Control Class 3	0.92*	0.161	0.000	0.50	1.34

The Mean plot of Fig 2 below shows that the Mean difference between four classes, emphasising that the grade mean of the experimental class is higher than that of controlled classes.

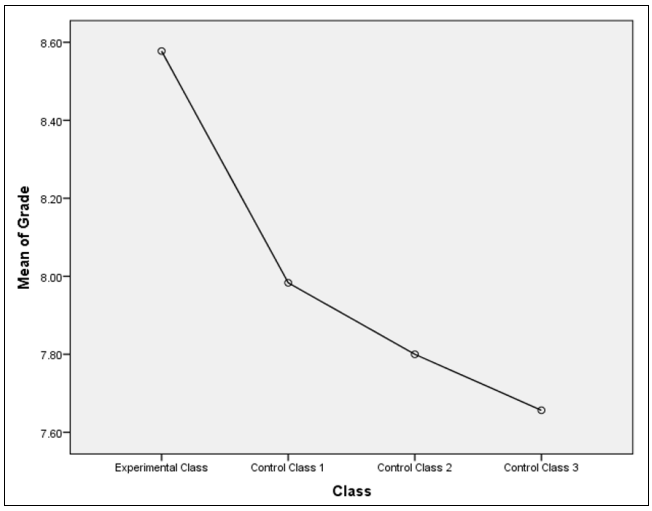

Fig 2: Mean plot of post-test results (N=162)

4.2 Students' perceptions towards the tech tool

Tables 9 provides an overview of student's perceptions towards the usefulness of tech tools in ESP learning. The mean scores of all elements were grouped in the range, revealing that students found elements of tech tools useful overall.

Table 9: Student's overall perceptions (N=40)

	Usefulness		Rank
	Mean	S.D.	
a. Pre-made PPT and videos	4.42	0.41	1
b. Gamified exercises	4.23	0.44	3
c. Online writing tools	4.13	0.46	4
d. Eng breaking – Speaking	4.04	0.43	5
e. Teacher-made app for Reading and Listening	4.27	0.37	2

The Mean score of Pre-made PPT and videos is the highest (4.42), suggesting that students were impressed with the usefulness of these elements. Fig 3 below displays what benefits learners could achieve from these tailor-made lessons. Overall, results showed that all elements get above 7% of positive responses, implying well-prepared and contextually-relevant online lessons could enhancing their ESP learning capability.

Table 10 shows how the participants were satisfied with the improvement in their English ability during the course with the use of tech tools. It could be stated from the data that all mean scores are above 4.1 and the modes are 4, which were really high and significant.

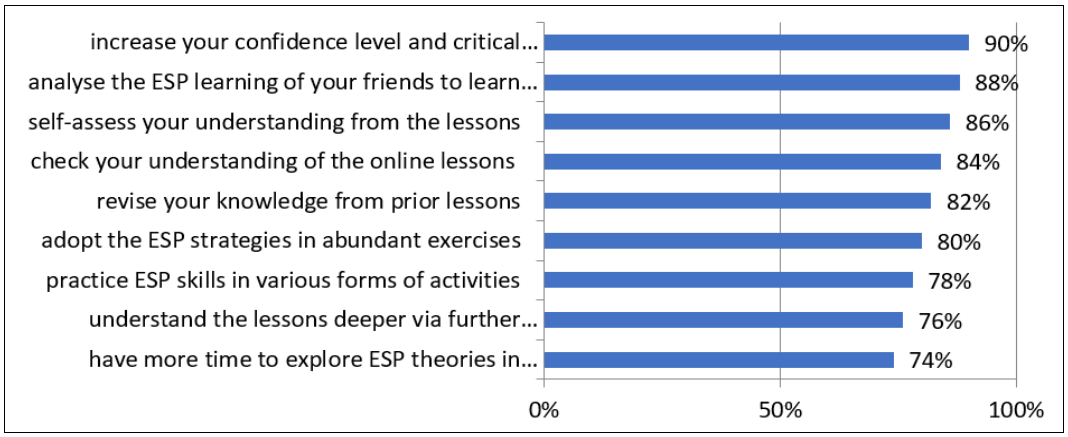

Fig 3

Table 10: Learners' satisfaction (n=40)

	Mean	Mode	S.D.
Learners' satisfaction with their improvement in vocabulary.	4.38	4	0.32
Learners' satisfaction with their improvement in grammar.	4.21	4	0.52
Learners' satisfaction with their practice in the class.	4.44	4	0.45
Learners' satisfaction with their improvement in soft skills.	4.12	4	0.35
Learners' satisfaction with their improvement in specialized knowledge.	4.28	4	0.42
Learners' satisfaction with their understanding of the lessons.	4.35	4	0.48
Learners' satisfaction with their remembering of the lessons.	4.31	4	0.36
Learners' satisfaction with their participation and engagement.	4.22	4	0.47
Learners' satisfaction with their attentive level.	4.33	4	0.38

The open-ended question of the questionnaire also shed more light on the beneficial impacts of the tech tools.
Examples from learners' responses provide illustrations of some of the benefits as follows:

> *"We can understand more about the lessons and review them again and again."*- Student 1

> *"We used various apps and technology in this class. The class is not boring. The time to study in 5 periods is not long any more" – Student 15*

> *"I could do different types of exercises, such as multiple choices, unscrambled sentences, gap filling, matching, error correction, reading, listening, etc. And we got quick results with one click. So, more practice means I could learn and remember more."- Student B*

> *"I really like the Speaking app. It helps me to compete with the virtual people and I have to try to speak better. I think I improve my speaking skills."* - *Student H*

Responses also revealed some intriguing information about the beneficial impacts of certain tech tools.

> "*…Nearpod, Kahoot, Classcraft, and Gimkit were some tools that my teachers used to make the lessons better."*

> *"A lot of technology was used such as Grammarly, EasyBib, or Google Jamboard. These tools can help us learn in a more interesting way as well as foster our understanding." – Student E*

In short, the findings clearly show that participants in the experimental class significantly outperformed those in the control classes. In addition, students' perceptions towards the use of tech tools were quite positive and encouraging.

5. Discussions and Recommendations

5.1 Tech tools improve learners' academic performance

The pre-test/post-test analysis of the experimental class shows that the usage of tech tools had a major impact on the students' ESP learning, resulting in their significant improvement above the control classes that did not employ these resources. With these results, it could be concluded that a reasonable combination various tech in ESP training could be a good solution to boost learners' academic performance, and it could be expected that tech tools will continue to yield positive outcomes in the future. Several reasons could be attributed to the success of tech tools in developing the performance of students in ESP classrooms.
First, more exposure to practice in various technological formats could allow learners to have motivation to broad their knowledge and sharpen their skills so that students could achieve higher accuracy in specialized situations and thus familiarize themselves with ESP knowledge.
Second, a wide range of tech tools were exploited to meet diverse learning needs and bring better efficacy in the ESP modules. Based on the belief that no single tech tools can actually meet all diverse learners' needs and learning objectives in all language skill, and no technology could maintain learners' interest, engagement, and attentive level for a long time, a wide range of tech tools were exploited to maximise the training process. For example, Besides the use of certain widely-exploited technology such as the school learning management system (LMS) and mobile messaging apps for information exchanges and news delivery (to upload PPT and videos), digital gamified tools, online writing tools (QuillBot and Turnitin), technology to support speaking skills with synchronous feedback (Eng breaking), and teacher-made app for Reading and Listening skills practice were implemented in the experimental class. Each tech tool has their own specific interface to attract learners, has their own mechanism or rules to follow with regards to the skill specifications. As a result, these tools could promote learners' higher-order thinking skills, their constructivist and socio-constructivist aspects for deeper learning, thereby enhancing learners' competencies and attitudes as well as higher final performance among participants. Moreover, both teacher and students who had more chances to get familiar with technology could appreciate the flexibility of the learning process and thus absorb the course delivery better.
Third, the lecturer in this experimental ESP class was well aware of the importance of maintaining a learner-centered atmosphere in their teaching practice. He tried his best to provide ample opportunities for meaningful active learning experiences such as the use of tailor-made and teacher-made videos to introduce the teaching contents, gamified and technology-assisted exercises for individual practice. The lecturer also used a wide range of diagnostic tools and to make pre-existing knowledge structures accessible to students such as digital gamified tools to check learners' understanding, review the lessons, as well as to bring more engagement into their classrooms. Finally, the teachers also take into account students' preconceptions perspectives by using Grammarly to help learners check grammar and vocabulary more effectively for their writing assignments.
In conclusion, the tech tools enabled the students to indulge in a more meaningful learning environment, provide students with the ability to investigate ESP topics in a deeper level. In other words, within the lens of active learning packed in collaborative learning, digitalised teaching practice provided students with space.

5.2 Positive perceptions of HUB students

The study found that majority of participants expressed an increased interest and confidence in ESP learning class. Technology enhances many learning opportunities and comforts students, improving learners' attitudes towards ESP learning considerably.
Three explanations can be given to demonstrate the usefulness of technological tools in increasing HUB students' perceptions of learning ESP. Firstly, with the advancement of modern technology, students may now access an amount of knowledge with unparalleled simplicity and wide. As a result, the process of getting the information required for ESP learning has been expedited, freeing up time and energy for learners to engage in critical analysis and synthesis of the knowledge they have learned. Besides, the way the participants studied ESP has been significantly transformed by tech tools, leading to changes in their learning styles and engagement with the process. The flexibility afforded by tech tools in terms of interfaces, skills focus, and accessibility enabled students to learn at their

own pace and on their own schedule if they used them outside the classroom setting, empowering them to take control of their own learning progression. When they were required to use technology in the classroom, they had to collaborative with their partners to deal with the assignments on the online environment. This type of in-class practice is by no means more engaging than the traditional paper-based activities. As a result, the participants in this study were no longer as passive when learning in the ESP context, thus gradually enhancing their interest and autonomy significantly.

6. Conclusion

The study has illustrated how implementation of tech tools has a certain positive impact on student's ESP learning process. The independent variable in this research was the type of instructions for ESP learning, including the class using various tech tools appropriate different skill practice and the classes without using those technologies. The ANOVA analysis showed an increase in scores between the experimental class and control classes. The post-test results of the students in the experimental class were better than those of the control classes that did not use many tech tools in teaching (p-value = 0.0001 and effect size = 0.64). All participants also expressed positive perceptions and a deep appreciation for its far-reaching implications. In other words, the level of enthusiasm and satisfaction among the participants was truly remarkable, with many expressing their conviction that tech tools would yield significant benefits and transformative outcomes.

The study has certain limitations and recommendations as follows. First, the external validity of the study is relatively slow due to its small sample size. A small sample size may offer insightful information on a specific group but may not be representative of all students, so the findings may not be generalizable to other settings. Second, the research study has a short time frame (only 9 weeks). This time restriction might negatively impact the reliability of the study findings. Thus, more studies could be conducted with larger population and longer time frame. Further research could also be done to expand the research participants to the whole faculty of one ESP module in order to get more thorough and precise results. With this strategy, a more representative and diversified sample would be guaranteed, potentially increasing the research's external validity. Besides, data from different academic settings such as a comparison of public, private, and international universities could also be useful to help us have a better understanding of the issue through a wide range of academic lenses. Finally, other research designs and instruments such as interviews, document analysis, or observation could also be adopted to cross-check the results, thus improving the reliability of the study.

7. References

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