Need Analysis Survey of Designing and Developing a Mobile Augmented Reality Application for Tourism English Learning in Higher Vocational Education, China

Zhao Wenfei[1], Mohd Khairezan Rahmat[1], Nur Nabihah Mohamad Nizar[2], Siti Zuraida Maaruf[1]

[1]Faculty of Education, Universiti Teknologi MARA (UiTM), Malaysia, [2]Faculty of Education, Universiti Malaya (UM), Malaysia
Corresponding Author Email: mohdk787@uitm.edu.my

Abstract
The English proficiency of Tourism Management students is underneath the average of college level. Providentially, the progression in technology has opened another possibility for researchers to explore the full potential of technology by integrating it into teaching and learning process in English. The combination of mobile learning and Augmented Reality (AR) is a creative and effective way for Tourism English learning, because AR presents virtual 3D content on the basis of real world and brings students directly to the real scene and working environment of Tourism, and mobile learning enables students to learn without time or space constraints. Although AR and Mobile Augmented Reality (MAR) are believed to benefit education, so far, there is limited published research that addresses MAR's benefits in higher vocational education, especially for Tourism English learning. Therefore, the objective of this research is to determine the need to develop a MAR application, namely Mobile Augmented Reality Tourism English Learning (MARTEL), for Tourism Management students in Higher Vocational College (HVC). This study surveyed the needs from 169 students from 1st and 2nd grades of Tourism Management program and data were analysed by descriptive statistics. In addition, 6 Tourism English teachers were interviewed and the text of the conversations was transcribed thematically. Findings revealed that both teachers and students expressed the lack of English proficiency, the insufficient effect of existing technological teaching tools, and feedback quite positively on MAR technology and MARTEL, indicating that the demand of MARTEL is considerable. It is foreseeable that as an advanced and interesting teaching tool, MARTEL application will be able to improve teaching and learning efficiency, make Tourism English an innovative and high-quality course, and even to a certain extent, change the teaching ecology of domestic Tourism English courses.
Keywords: Mobile Augmented Reality, Need Analysis, Tourism English, Higher Vocational Education

Introduction

As an international language, English plays an important role in many fields and industries, so there has been a worldwide increase in demand for English learning, especially in non-English speaking countries (Alharbi, 2019). According to IETLS official statistics report, among 40 countries, the mean overall and individual band scores achieved by 2022 Academic test takers from China were ranked 30 globally with 6.1 points. Among reading, listening, writing and speaking, Chinese students' weakest ability is speaking and writing comes second (Badger, 2012). This shows that the overall performance of Chinese students' English language skills is not outstanding, let alone those of higher vocational college students who have a weaker English foundation.

In China, normally vocational college students get much lower scores in the National College Entrance Examination (NCEE), also known as the Gaokao, which is a standardized test taken by high school students for admission into universities and colleges, including Chinese, mathematics, English, physics, chemistry, biology, history, and geography (Kurlantzick & Li, 2015). The scores obtained for this exam are one of entrance criteria to get admitted in a university or vocational college in China. Last recent 3-year NCEE English scores of Tourism Management students in Heze Vocational College (HVC) from 2020 to 2022 given in Table 1 (Li, 2020). It is easy to see that Tourism Management students' maximum English scores of NECC in HVC is just around the passing mark, while the mean score of each year is far behind. Even the mean score of college level is higher than that of Tourism Management in 2021 and 2022, which means normally the English proficiency of Tourism Management students is under the average of college level. Under such circumstances, the English proficiency of Tourism Management students needs to be improved urgently, especially for Tourism English, one of compulsory courses of Tourism Management program.

Table 1
National College Entrance Examination English scores of
Tourism Management students (data from Admission office of HVC)

Year of Admission	Tourism Management Max	Tourism Management Min	Tourism Management M±SD	College Level M±SD
2020	100	12	45.88±16.40	45.04±15.92
2021	96	14	39.44±13.71	46.16±15.36
2022	90	27	50.92±13.79	60.86±15.99
In total	100	12	46.18±15.30	52.24±17.47

Note: The full mark of English in NCEE is 150, normally the pass mark at 60%, i.e., 90.

Fortunately, the advancement in information technology has opened new horizons for education researchers to explore the full potential of technology by integrating it into teaching and learning process in English and other fields, such as Learning Management Systems (LMS) Turnbull et al (2020) which allows educators to manage and deliver educational content, track student progress, and communicate with student for online or hybrid learning, Artificial Intelligence (AI) Chen et al (2020) that can be used to analyse student data, provide personalized learning experiences, and automate administrative tasks, gamification Saleem et al (2022) that involves the use of game design elements in non-game contexts to increase engagement and motivation in learning Qasem et al (2019) that allows

for easy access to educational resources and collaboration tools from any location and any device (Naciri et al., 2016) which uses mobile devices such as smartphones and tablets to provide educational content and resources that can be accessed from anywhere at any time, Virtual Reality (VR) and Augmented Reality (AR) Zhou et al (2020) which can provide immersive learning experiences by simulating real-world environments or adding digital elements to the physical world. For Tourism English learning, the combination of mobile learning and AR is one of the creative and effective way Siriwardhana et al (2021), because AR presents virtual 3D content on the basis of real world and brings students the real scene and working environment of Tourism directly and mobile learning enables students to learn without time or space constraints (Pambudi & Harjanto, 2020). So, MAR has the potential to offer unique and effective learning experiences that have never been experienced before.

Although AR and MAR are believed to benefit education, so far, there is no published research that addresses that MAR benefits the higher vocational education, especially for Tourism English learning. Therefor the objective of this research is to determine the need to develop a MAR application, Mobile Augmented Reality Tourism English Learning (MARTEL), for Tourism Management students in HVC by surveying both students and teachers in HVC on students' current level of English proficiency, and perception of technological teaching tools, MAR and MARTEL.

Methodology
Need analysis is one of systematic procedures required in design, developing an efficient educational application to fulfil the requirements and needs of a specific target learning group (Diana & Mansur, 2018). According to Prachanant (2012) needs analysis comprises of figuring out what the learners know and can do, and what they need to learn or do. In other words, it is a process designed to gather and analyse information about the target needs of learners in an existing or proposed setting.

In this study, research on the needs of designing and developing MAR application for Tourism English learning was performed through both questionnaire survey and interviews with mixed methods.

Participants
This research adopts purposive sampling technique, which is also known as a judgmental sampling technique, and provides freedom to researchers to select the respondents and decide a population number for the study based on their judgments (Etikan et al., 2016). For quantitative research, 169 students from the 1st and 2nd grades of Tourism Management program took part in the questionnaire survey, aging between 18 to 20. Normally students have been learning English for over 10 years since primary school and are quite skilful at technological tools since they were born in information era (Nugroho, 2021). As for qualitative research, 6 Tourism English teachers were interviewed, ranging from 27-55 years old. Two of them are professors owning over 30 years of teaching experience, and four are lecturers who has been teaching for 3-7 years. All teachers have grasped the conventional technological teaching tools like PowerPoints, multimedia, and Superstar learning platform, which is a set of mobile intelligent learning system to serve the classroom teaching process.

Instruments
In quantitative research, a Likert-type questionnaire was constructed based on several sources (Nizar et al., 2020) and distributed to Tourism Management students. Respondents were required to state the level of agreement on a four-point Likert Scale. The survey collected data of respondents' English proficiency and perceptions of current technological teaching tools, MAR and MARTEL.

In qualitative research, the semi-structured interview sessions were conducted with English teachers to gather more in-depth reviews. According to Kallio (2016) when it's necessary to get qualitative data with less bias, the semi-structured interview method could be helpful. Interview protocols were followed to design the interview components such as welcome, brief introduction of topic, identity protection, questions, and the feedback (Breen, 2006). The interview has 10 questions concentrating on 4 topics, i.e., current status of Tourism Management Students' English Learning, and current technological teaching tools, familiarity of MAR and practical need of MARTEL.

Data Collection
For quantitative research, the survey was performed in the classroom and data was collected on site. At the beginning of questionnaire survey, the researcher stated the academic purpose of this survey, informed confidentiality statement of the data collected, and obtained the consent of the participants to ensure the students had fully understood the survey and been able to feedback effectively.

For qualitative research, the semi-structured interviews were conducted in Tourism Management department offices in HVC for two days. Based on in-depth interview questions, semi-structured interviews, which took about twenty minutes for each interviewee, were conducted with full acknowledgement. The entire interview processes were recorded with audio recording devices, and the text of the conversations was transcribed. The feedback was then coded and analysed qualitatively according to themes.

Data Analysis
For questionnaires, quantitative method was performed. Descriptive statistical method was used to analyse the quantitative data obtained from the questionnaire. Cronbach's Alpha coefficient, the Bartlett test of sphericity, and the Kaiser-Meyer-Olkin measure of sampling adequacy are calculated for reliability and validity of the questionnaire. Percentage and frequency were calculated for all the questions used in the survey and the critical discussion was performed (Chostelidon, 2010). For the open-ended question in the questionnaire, all gathered responses were interpreted and categorized accordingly (Kholidi et al., 2022).

After the interview sessions completed, the audio recordings of all cases were transcribed. First, the interviews were initially compiled as textual materials with a total of about 8,000 words, and the interview reports were numbered. Next, the researcher got familiar with the data, generated initial codes and labels that capture the content of data, categorized interview feedbacks into 4 themes according to the codes, reviewed and refined the themes, finally interpreted data, and discussed critically based on the themes identified about the students' English proficiency, opinions of existing teaching tools, knowledge of MAR and practical needs of MARTEL in English teaching (Clarke et al., 2015).

Research Findings

Discussion of this section be divided into 2 parts, the students' questionnaire and teachers' interviews as quantitative and qualitative findings, elaborating separately on validity and reliability, respondents' demographic information, students' perceptions of English, MAR and MARTEL, teachers' reviews of current status of students' English learning, current technological teaching tools, familiarity of MAR, and practical need of MARTEL applicatin

Reliability Analysis

Reliability is a test of the reliability of the data sample and the degree of consistency of the data results, which can reflect the stability of the survey results and the degree of truthfulness of the characteristics being measured (Taherdoost, 2016). Cronbach's α coefficient is the most common evaluation index currently used to evaluate the internal consistency of questionnaires, so the questionnaire in this study also uses Cronbach's α coefficient for reliability analysis.

The value of the standardized Cronbach's α coefficient is between 0 and 1, and the closer the coefficient value is to 1, the higher the internal consistency of the questionnaire and the more reliable the results (Jiang et al., 2018). It is generally considered that questionnaires with Cronbach's α coefficient values greater than 0.7 are acceptable, and questionnaires greater than 0.8 are of good use (Tavakol & Dennick, 2011). This study analysed the questionnaire reliability with the help of SPSS 26.

Table 3
Reliability analysis of the Need Analysis Questionnaire of MAR

Questionnaire	Item	Cronbach's α coefficient
Need analysis of MAR	12	0.839

As the result is shown in Table 3, the Cronbach's α coefficient of Need Analysis of MAR Questionnaire is 0.839, which is greater than the credible threshold value of 0.7, indicating that the questionnaire has a high reliability level and good internal consistency. Although the Cronbach's alpha coefficient of 0.839 indicates that the questionnaire has good internal question consistency and acceptable reliability, the values of the corrected items with respect to the total correlation and the squared multiple correlation were determined for rigor's sake. It was statistically known that the first two questions had relatively small correlations between the corrected items and the total, and the squared multiple correlations demonstrated similar results, with the first two questions having relatively small values, both indicating relatively small correlations with the total scale (Pogany et al., 2021). The Cronbach's alpha coefficient showed a small increase after removing these two question items, but it was still at the same interval level and no significant change. The scale was not adjusted after comprehensive consideration.

Student Demographics

The total number of participants involved in this study was 169, among which 74.56% were females and 25.44% male. Based on the collected data students rated their English proficiency levels as the beginner (86.98%), intermediate (11.83%), and advanced (2%). Moreover, 46.5% of students chose writing as the most difficult part of English learning, followed by reading (23.67%), speaking (17.75%), and listening (13.02%). The majority of students (69.23%) were

not familiar with AR, but they are interested in using augmented reality applications in the future.

Student Perceptions of English
Table 6
Personal Perception of English

Questions	Strongly Disagree (F/%)	Disagree (F/%)	Agree (F/%)	Strongly Agree (F/%)	Mean (M)	Standard Deviation (SD)
1. I am satisfied with my current level of English language.	56/33.14	81/47.93	24/14.2	8/4.73	1.91	0.811
2. My current English learning efficiency is low.	20/11.83	24/14.2	92/54.44	33/19.53	2.82	0.884
3. I want to improve my English level.	8/4.73	8/4.73	92/54.44	61/36.09	3.22	0.744

Section B of the instrument consists of 12-likert-type questions regarding perceptions of English proficiency, technological teaching tools, MAR, and MARTEL application. To assess the need for Tourism English learning, the first three questions (Q1-Q3) were designed regarding the students' personal perception of English learning. The findings are that in response to Q1: nearly half students (47.93%) responded disagree and 33.14% selected strongly disagree, so overall 80.17% of students were not satisfied with their current English level; to Q2: 54.44% of students agreed that their English learning efficiency is low; meanwhile, to Q3: when asked about their long-term goal regarding English learning, 54.44% students responded that they want to improve their English.

Student Perceptions of Technological learning experience
Table 7
Perception of Technological Teaching Tools

Questions	Strongly Disagree (F/%)	Disagree (F/%)	Agree (F/%)	Strongly Agree (F/%)	Mean (M)	Standard Deviation (SD)
4. My teachers frequently use technological teaching tools in English classes.	13/7.69	43/25.44	88/52.07	25/14.79	2.74	0.804
5. I think the current technological teaching tools used in English classes is diverse.	9/5.33	30/17.75	96/56.8	34/20.12	2.92	0.767
6. My classmates think the current technological teaching tools used in English classes still need to be improved.	6/3.55	18/10.65	108/63.9	37/21.89	3.04	0.684

Further, to explore the student's practical need, the questionnaire also covered the technological teaching tools used in English classes. Q4-Q5: regarding the frequency and diversity of using technological teaching tools in English classes, the vast majority of the participants declared using technological tools is very common (52.07%) and diverse (56.8%)

respectively, while 25.44% and 17.75% of students disagreed. In Q6 the majority (85.8%) think these technological teaching tools need improvement.

Student Perceptions of MAR
Table 8
Perception of MAR

Questions	Strongly Disagree (F/%)	Disagree (F/%)	Agree (F/%)	Strongly Agree (F/%)	Mean (M)	Standard Deviation (SD)
7. I believe that learning Tourism English will be more effective with traditional teaching method, such as lecture and PowerPoints, than via MAR technology.	7/4.14	43/25.44	86/50.89	33/19.53	2.86	0.774
8. I believe that use MAR technology to learn Tourism English will be more interesting and fun.	2/1.18	7/4.14	110/65.09	50/29.59	3.23	0.577
9. I hope that my teachers will use MAR technology to teach Tourism English.	2/1.18	10/5.92	108/63.91	49/28.99	3.21	0.596

Moreover, to evaluate the perception of MAR, different questions were asked regarding the application of MAR in Tourism English. In response to Q7: 70.42% of students considered that learning Tourism English is more effective with traditional teaching methods; to Q8: 94.68% of students believed that learning English using MAR is more interesting and fun, while to Q9: 92.9% of students responded that they hope their teachers will use MAR to teach Tourism English.

Student Perceptions of MARTEL
Table 9
Perception of MARTEL

Questions	Strongly Disagree (F/%)	Disagree (F/%)	Agree (F/%)	Strongly Agree (F/%)	Mean (M)	Standard Deviation (SD)
10. I believe using MARTEL will increase my initiative in Tourism English learning.	2/1.18	10/5.92	108/63.91	49/28.99	3.21	0.596
11. I believe that I can improve my English with the help of MARTEL application.	4/2.37	11/6.51	113/66.86	41/24.26	3.13	0.623
12. I am confident to use MARTEL to learn Tourism English whether I have used MAR technology or not.	7/4.14	22/13.02	101/59.76	39/23.08	3.02	0.728

The last segment of the questionnaire is about the perception of MARTEL application in Tourism English learning. In response to Q10: 92.9% of students considered MARTEL will increase their initiative in Tourism English learning; to Q11: 91.12% believed MARTEL

application can help them to improve their English level, while to Q12: 82.84% of students responded that they are confident to use MARTEL in the future.

The Teachers' Interviews
This semi-structured interview sessions were conducted with 6 teachers on teachers' reviews of current status of students' English learning, current technological teaching tools, familiarity of MAR, and practical need of MARTEL application. These reviews are important in confirming responses gained from the students.

Current status of Students' English Learning
Teachers generally think Tourism Management students' English proficiency is quite low and rating the average level of English from 40 to 65 out of 100, most around 60. Teacher B informed that the overall level is lower than intermediate, probably 60 out of 100. Most of students are beginners with poor vocabulary. Similarly, Teacher C suggested that some students are okay, but the proportion is very small. If there are about 50 students in a class, the number of positive learners is four or five. She would rate it 60 out of 100. Teacher F thought that the overall level is lower than intermediate, but the trend of HVC students' English level is improving and she rated it as 65. On the other hand, A said that the students' English level is really low, and no matter what technological tools teachers use, Tourism English is still quite hard for them. She thought the average level of English is 40-50. Teacher D stated that some of students barely can speak or listen to or understand English. Their grasp of grammar is poor. Only a few can follow teachers in English class. The rating is lower than 60. Teacher E argued that even compared to the students from other vocational colleges, HVC students' English level is lower. Since students learn Tourism English in the 2nd year, she rated English proficiency of 2nd year is around 60, a little higher than the 1st.

Current Technological Teaching Tools
The teacher gave a full list of the technological teaching tools commonly used in classroom now, including PowerPoints, multimedia, intelligent blackboard, and Superstar learning platform. All agree that these tools only meet the basic needs of teaching but cannot attract students' attention or motivate students to study. Teacher B thought the tools are good to some extent and said: "The technological tool is mainly Superstar learning platform, where I can set some classroom activities, quizzes. It can get students participate to get some credits." Teacher F admitted that generally they searched for some multimedia online, such as audios and videos related to the teaching material, which attract student's attention to some extent but not too much long. Teacher D was not satisfied with relatively traditional technological tools and scored it 5 out of 10. Teacher F held the same viewpoint that the effect is not good enough and students should practice more.

Familiarity of MAR
None of teachers are familiar with MAR or use MAR-based application to teach English. Some tleachers only heard of it, while other teachers did not. However, all of them think MAR should be useful as a tool in English classes. It was also mentioned that teaching effectiveness may vary from person to person based on their English proficiency and basis. Teacher A thought MAR is good and the application can be developed because this technology can make students immerse themselves in the working environment, and it is easier to stimulate students' curiosity of explanation, and they will speak better when facing the real scene. Teacher C responded that at least it can first arouse students' interest, and students may be

more involved in learning, which can then improve their academic performance. Even though had never heard of or experienced it before, Teacher D were supportive of MAR technology as a tool to teaching English. She also worried that if students' English language basis is good, this application would certainly make an effect, but if the students are very poor in English, this MAR technology may not play too big a role. Teacher E had only read about MAR in the literature, and she thought it is worth a try.

Practical Need of MARTEL
Generally, teachers were excited about MARTEL application and hope it will help and motivate students to learn Tourism English, but also mentioned the breadth of application. Teacher A thought it can be developed, but the number of Tourism Management students is no more than 300, so the cost of development is relatively high. The cost should be reduced if it targets at more students. Teacher C agreed that college wanted to build Tourism Management a brand among all majors. In this case, MARTEL could facilitate to make Tourism English a specialty English course. Teacher F supported that it is quite necessary, not only for Tourism English, but also for Flight Attendant English in HVC.

Teachers are optimistic about students mastering MARTEL. Majority of the teachers informed that they are ready to integrate MARTEL into their instruction process. For example, teachers A indicated that MARTEL is more like a cutting-edge application that young people would pursue and like, so there should not be much difficulty to use. Teacher F thought all applications are not difficult for students. If this MARTEL is quite strong, some training can be provided for teachers and students and students should be able to master this technology very quickly.

Some teachers also talked about expectations about using MARTEL. Teacher A wanted to equip this MARTEL with the field training so as to bring the scene to students. This application should be quite effective that students can see the environment, listen to the audio, then simulate the scenario with practice. Some teachers also provided valuable suggestions. Teacher B advised to add some knowledge points as preparation material. Teacher F suggested that apart from travelling plot, it could better to provide students with a real situation that is closely related to their future work, so that they can improve their communicative skills in work situations.

Research Discussion
The content of the questionnaire survey and interview questions are closely related, aiming to find answers from a two-way perspective of teachers and students. Based on findings of both a large-scale questionnaire survey of 169 students in Tourism Management at HVC and semi-structured in-depth interviews with 6 front-line Tourism English professors and lecturers at HVC, and the results of need analysis were elucidated and discussed as follows:

The contradiction between the current situation of students' English language ability and the demand for English improvement in higher education institutions is prominent, which is not conducive to the deep vertical development of classroom English teaching
It is clear from the results of the students' questionnaire that 90.53% of the students are looking forward to improving their English language ability, which means that the students still have high motivation to learn English and their learning initiative can be guaranteed.

However, at the same time, students also have a very clear judgment of their own English level, with only 1.18% of students considering themselves proficient in English. Students also have similar feedback in terms of English satisfaction and learning efficiency, i.e., they are not satisfied with their English level and consider themselves inefficient. The fact that students' English language proficiency has a very low level despite such a high desire and need for improvement demonstrates that the current conflict between supply and demand in English teaching in higher education institutions is extraordinarily prominent (Macaro et al., 2018).

The same conclusion can be drawn from the interviews that most students do have a middle to lower level of English proficiency. However, the difference is that most teachers reflect that students lack sufficient interest in learning English, and only very few students can actively participate in class and take the initiative to answer the teacher's questions, while other students rarely actively participate in interaction or answer questions, and their learning motivation is very low. This is contrary to the high willingness to learn in the student survey, and the reason why this happens is that the students themselves have very poor English foundation, with even only a dozen scores in the entrance exam, which is the reason why many students have to choose vocational institutions after graduating from secondary school, and they lack the ability to cooperate with teaching activities, so they shy away from or even avoid learning English. There are also some students who lack sufficient interest in the Tourism Management major itself, leading to a dull classroom atmosphere where teachers do not see students' motivation to learn and are unable to carry out deeper teaching. It is obvious that incapability and low interests leads to teachers' negative reviews, but students are willing to improve if they can get effective assistance.

The overall effectiveness of current technological English teaching tools in higher vocational institutions is inadequate and students' learning enthusiasm cannot be driven to the greatest extent.
66.86% of Tourism management students think that educational technology is already being used frequently in the current English teaching process, and even more students (76.92%) already feel that the technological teaching tools used in the classroom are diverse. Combining with the content of teachers' interviews, we can learn that technological teaching tools including Intelligent Blackboard, Superstar learning platform, and traditional audio and video, PowerPoints, etc. have been widely used, and according to some teachers, in order to enhance students' interest in learning, they have incorporated many beautiful and interesting teaching materials by searching online and downloading wonderful videos and other teaching resources on the Internet. However, more students (85.8%) were not satisfied with the current teaching tools, indicating that students recognized that teachers have made full use of the currently available technological tools for teaching, but the satisfaction achieved was not what they had hoped for (Ghavifekr & Rosdy, 2015).

Although teachers have tried their best to make full use of the available technological tools, most of them remain using the traditional teaching methods, mainly teaching through lecture, while students in vocational colleges are weak in foundation, have suffered learning burnout and lost confidence. Under this case, the established learning effect cannot be achieved at all, and most students find the course boring. The teacher also mentioned in the interview that many students sleep in class and often play with their mobile phones. Both the student questionnaire and the teacher interviews show that both teachers and students are generally

not satisfied with the results achieved by the current English teaching tools. In addition, Tourism English itself is a relatively practical course, but the current classroom activity is obviously insufficient, and students' motivation to learn is further reduced.

Despite the low level of understanding of MAR, MAR technology is highly expected in Tourism English teaching.
Through the interviews, it can be seen that the current frontline teachers are only at the primary stage of having heard of MAR technology, and none of teachers have operated or used it in actual teaching, and some of teachers said that they heard of it for the first time when they were interviewed, which is believed to be the situation of most English teachers in vocational colleges in China. Young students have been exposed to AR technology earlier and more often than teachers, although more than 70% of them said they had only experienced AR technology in games. The domestic research on the subject teaching based on MAR technology in recent years was reviewed, and most of them were limited to the higher level of literature discourse in China. In countries and regions where research on MAR technology in education is more advanced, the combination of MAR technology with education and teaching is still at an immature stage of experimentation and application, and there is no real integration and lack of specific design solutions for teaching practice (Kourouthanassis et al., 2015).

Similarly, after learning about MAR technology, all teachers and more than 90% of students have similarly high expectations for and look forward to using MAR application, with which they believe the Tourism English course will be significantly more interesting than the current one, the classroom atmosphere will be more active, and the teaching effect will be improved. Teachers also expect that MAR technology will create real situations for students, simulating real work situations, motivating students, arousing their curiosity, and leading to acquiring a sense of accomplishment. In addition, it is expected that MAR will enable students to experience the tour guide career in the classroom, which will trigger active thinking and active learning, and enhance students' vocational skills to better adapt to the workplace and meet the needs of society.

Fully understand the needs, carefully design the application, improve the quality of Tourism English teaching in all aspects with MARTEL.
Considered the questionnaires and interviews, both teachers and students report a positive attitude toward MARTEL application. Teachers express the necessity of studying with MARTEL and suggest conducting research and developing the application on the premise that it can be applied and promoted on a large scale thus to make use of the marginal effect and save costs. They hope that MARTEL can make the teaching content more vivid, concrete and easy to understand by simulating actual scenes, so as to enhance students' learning experience and make them more active and positive in acquiring knowledge, thus improving the teaching effect and bringing a qualitative leap to the teaching of Tourism English (Munzaki, et al., 2016).

At the same time, students expressed more excitement about MARTEL. They valued the fun nature of the design and expected to add some incentives to encourage persistent use. In terms of operation, the teachers' prediction and student' self-assessments were consistent in their perceptions that after some training, they would be able to master MARTEL easily,

quickly, and accurately without creating new burdens. The teachers also made many valuable suggestions for MARTEL based on their own experiences to better improve the quality of Tourism English teaching. In terms of functions, they think MARTEL should focus on the combination of knowledge points, speaking practice, interactive functions, accurate restoration of scenarios, etc., which can help students improve their communicative skills, and meanwhile the convenience should be considered along with use. The teachers and students believe that MARTEL can change the dull classroom atmosphere, and then enhance students' interest in learning tourism English, and eventually help improve students' overall Tourism English language ability.

Conclusion
For a long term, the teaching method of Tourism English in HVC has been focusing on imparting knowledge, like teachers' monologue, while students become the audience, let alone playing roles, so students' experience is not strong. The existing technological teaching tools, such as Superstar learning platform, are not effective enough and are often used only as a tool for grading assignments (Yu, 2022). Teachers also reported that students only passively participated in the learning tasks assigned on the platform and are not motivated to use the existing learning platform to learn actively. The students also reported a general lack of interest in the English course and that the existing teaching tools could not meet their needs for improving their language skills. At the same time, based on the interview sessions conducted, the facilities and equipment at HVC are relatively backward and lack cutting-edge and advanced technical support. The practical training sites required by Tourism Management, such as tour guide simulation training classrooms and hotel management training workshops, are not fully developed, and the lack of on-site practice opportunities is unfavorable to both teaching and learning of Tourism English, which is equal to artificially increasing the difficulty of learning. Compared with general education, vocational education has higher level of practical requirements, and more investment in practical training facilities and equipment, both in terms of capital and manpower (Zu et al., 2022).

Through questionnaires and interviews, both teachers and students expressed the lack of English proficiency, the insufficient effect of existing technological teaching tools, and feedback quite positively on MAR technology and MARTEL, indicating that the demand of MARTEL is considerable. It is foreseeable that as an advanced and interesting teaching tool, MARTEL application will be able to improve teaching and learning efficiency, increase student's motivation, make Tourism English an innovative and high-quality course, and even to a certain extent, change the teaching ecology of domestic Tourism English courses. At the same time, MARTEL can help students get in touch with the real work environment by combining knowledge and practice. At the emotional level, MARTEL is also expected to improve the teacher-student relationship, enhance the class interaction, liven up the classroom atmosphere and assist the teacher-student relationship to move from rigidity to harmony. During the surveys, both teachers and students gave their perception of MAR and MARTEL application, and made many practical suggestions for improvement, which brought many new inspirations to this study, and at the same time, they were eager to put MARTEL into use as soon as possible, which strengthened the confidence to carry out this study soon. Hence, findings from this present study haoped to act as a guide to Ministry of Education, learning institutions, tourism agencies, educational technologist, and instructional designers in providing quality education for all through technology and innovation.

References

Alharbi, Y. G. (2019). A review of the current status of English as a foreign language (EFL) education in Saudi Arabia. Global Journal of Education and Training, 1(2), 1-8.

Badger, R. ,and Yan, X. (2012). The use of tactics and strategies by Chinese students in the listening component of IELTS. IELTS collected papers, 21(2), 454-486.

Breen, R. L. (2006). A practical guide to focus-group research. Journal of Geography in Higher Education. 30(3), 463-475.

Chen, L., Chen, P., and Lin, Z. (2020). Artificial intelligence in education: A review. Ieee Access. 4(8), 75264-75278.

Chostelidou, D. (2010). A needs analysis approach to ESP syllabus design in Greek tertiary education: a descriptive account of students' needs. Procedia-Social and Behavioral Sciences. 2(2), 4507-4512.

Clarke, V., Braun, V., and Hayfield, N. (2015). Thematic analysis. Qualitative Psychology: A Practical Guide To Research Method. 4(3), 222-248.

Diana, S., and Mansur, M. (2018). Need analysis on English teaching materials for ICT students. ETERNAL (English, Teaching, Learning, and Research Journal). 4(2), 209-218.

Etikan, I., Musa, S. A., and Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. American journal of theoretical and applied statistics. 5(1), 1-4.

Ghavifekr, S., and Rosdy, W. A. W. (2015). Teaching and learning with technology: Effectiveness of ICT integration in schools. International Journal Of Research In Education And Science. 1(2), 175-191.

Jiang, W.-J., Zhong, B.-L., Liu, L.-Z., Zhou, Y.-J., Hu, X.-H., and Li, Y. (2018). Reliability and validity of the Chinese version of the Childhood Trauma Questionnaire-Short Form for inpatients with schizophrenia. PLoS One. 13(12), 133-147.

Kallio, H., Pietila, A. M., Johnson, M., and Kangasniemi, M. (2016). Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. Journal of Advanced Nursing. 72(12), 2954-2965.

Kholidi, M. A., Azhan, N. A. S., and Ariawan, S. (2022). Needs Analysis of English Language Use in Tourism Industry in Selangor, Malaysia. LSP International Journal. 9(1), 123-136.

Kourouthanassis, P., Boletsis, C., Bardaki, C., and Chasanidou, D. (2015). Tourists responses to mobile augmented reality travel guides: The role of emotions on adoption behavior. Pervasive and Mobile Computing. 4(18), 71-87.

Kurlantzick, J., and Li, H. (2015). National College Entrance Examination (NCEE). Modern China, p. 231.

Li, F. (2020). Factors influencing Chinese students' choice of an international branch campus: A case study. Journal of Studies in International Education. 24(3), 337-351.

Macaro, E., Curle, S., Pun, J., An, J., and Dearden, J. (2018). A systematic review of English medium instruction in higher education. Language teaching. 51(1), 36-76.

Munzaki, D. F., Suadah, L., and Risdaneva, R. (2016). Teaching methods used by students of department of English language education of Uin Ar-Raniry in teaching English at English course. Englisia: Journal of Language, Education, and Humanities. 4(1), 10-26.

Naciri, A., Baba, M. A., Achbani, A., and Kharbach, A. (2020). Mobile learning in Higher education: Unavoidable alternative during COVID-19. Aquademia. 4(1), 20016.

Nizar, N. N. M., Rahmat, M. K., and Maftuhah, S. (2020). Evaluation of Pre-service Teachers' Actual use towards Augmented Reality Technology through MARLCardio.

Nugroho, L. (2021). The Role of Information for Consumers in The Digital Era (Indonesia Case). Artvin Çoruh Üniversitesi Uluslararası Sosyal Bilimler Dergisi. 7(2), 49-59.

Pambudi, N. A., and Harjanto, B. (2020). Vocational education in Indonesia: History, development, opportunities, and challenges. Children and Youth Services Review. 115, 105092.

Prachanant, N. (2012). Needs analysis on English language use in tourism industry. Procedia-Social and Behavioral Sciences. 66, 117-125.

Pogany, L., De Las Cuevas, C., andLazary, J. (2021). Validation and analysis of the Patient's Health Belief Questionnaire on Psychiatric Treatment in a sample of Hungarian psychiatric patients. Neuropsychopharmacologia Hungarica: a Magyar Pszichofarmakologiai Egyesulet Lapja= Official Journal of the Hungarian Association of Psychopharmacology. 23(1), 221-231.

Qasem, Y. A. M., Abdullah, R., Jusoh, Y. Y., Atan, R., and Asadi, S. (2019). Cloud computing adoption in higher education institutions: A systematic review. Ieee Access. 7, 63722-63744.

Saleem, A. N., Noori, N. M., and Ozdamli, F. (2022). Gamification applications in E-learning: A literature review. Technology, Knowledge and Learning. 27(1), 139-159.

Siriwardhana, Y., Porambage, P., Liyanage, M., and Ylianttila, M. (2021). A survey on mobile augmented reality with 5G mobile edge computing: architectures, applications, and technical aspects. IEEE Communications Surveys & Tutorials. 23(2), 1160-1192.

Taherdoost, H. (2016). Validity and reliability of the research instrument; how to test the validation of a questionnaire/survey in a research. How to test the validation of a questionnaire/survey in a research (August 10, 2016).

Tavakol, M., and Dennick, R. (2011). Making sense of Cronbach's alpha. International journal of medical education. 4(2), 53-64.

Turnbull, D., Chugh, R., and Luck, J. (2020). Learning Management Systems, An Overview. Encyclopedia of Education and Information Technologies. 1052-1058.

Yu, Z. (2022). The effects of the superstar learning system on learning interest, attitudes, and academic achievements. Multimedia Tools and Applications. 1-16.

Yu, Z., Xu, W., and Sukjairungwattana, P. (2022). Examining student behavioral intention of superstar learning system by extending its technology acceptance model. International Journal of Web-Based Learning and Teaching Technologies (IJWLTT). 17(1), 1-16.

Zhou, X., Tang, L., Lin, D., and Han, W. (2020). Virtual & augmented reality for biological microscope in experiment education. Virtual Reality & Intelligent Hardware. 2(4), 316-329.