

Mobile-assisted language learning (MALL), interdisciplinary competences and L2 speaking strategies among Chinese higher vocational college students

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Received: 1 April 2024
Available Online: 15 June 2024

Revised: 15 May 2024
DOI: 10.5861/ijrsl.2024.021

Accepted: 30 May 2024

ISSN: 2243-7754
Online ISSN: 2243-7762

OPEN ACCESS



Abstract

English speaking plays an important role in EFL learning in Chinese higher vocational colleges. It is found that mobile-assisted language learning (MALL), interdisciplinary competences and second language (L2) speaking strategies have an impact on English speaking. The study explored Chinese higher vocational college students' MALL, interdisciplinary competences and L2 speaking strategies using descriptive research. Online surveys were conducted among 443 students involving all the three grades from Chinese higher vocational colleges, among which 405 responses were qualified for the collection of result. The findings showed that Chinese higher vocational college students have a positive attitude towards MALL, interdisciplinary competences and L2 speaking strategies. There is a highly significant correlation among the respondents' MALL, interdisciplinary competences and L2 speaking strategies. The results have led to a language learning program to enhance the EFL learning and teaching. Chinese higher vocational colleges may consider offering more free online resources to students and English teachers, allow the application of mobile phones, IPADS or computers in English classes, create a relaxed environment for MALL and enhance students' English-speaking ability. Higher research college students in China may do surveys on their own EFL speaking ability on MALL, interdisciplinary competences, L2 speaking strategies, and make comparison between their findings and those of this research, with the purpose of exploring more effective methods to improve their English learning.

Keywords: mobile-assisted language learning (MALL), interdisciplinary competences, L2 speaking strategies, higher vocational college, students

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1. Introduction

China's higher vocational education is an important type of education, in which English as a second language (L2) is a compulsory course. English speaking is an important part of the second language acquisition process. However, there are still some gaps in the research on mobile-assisted language learning (MALL), interdisciplinary competences and L2 speaking strategies. Mobile-assisted language learning is an approach that utilizes mobile technologies and applications to enhance the language learning experience (Dong, Yuan & Xu, 2023). Interdisciplinary competences refer to the comprehensive skills and knowledge displayed by an individual in multiple subject areas (Zhang & He, 2012). L2 speaking strategies cover many aspects, including memory, cognition, compensation, metacognition, emotion and social strategies.

MALL, interdisciplinary competences and L2 speaking strategies are three important areas that have a profound impact on second language acquisition, especially on the improvement of speaking skills. By combining MALL, interdisciplinary competences and L2 speaking strategies, teachers can provide students with a more convenient, interesting, comprehensive and scientific learning experience, thus improving students' English speaking ability more effectively. This study not only has practical application value for finding out the correlation of students' MALL, interdisciplinary competences and L2 speaking strategies, but also provides a new perspective and thinking for English education research and practice.

Objectives of the study -This study aims to explore mobile-assisted language learning (MALL), interdisciplinary competences and L2 speaking strategies among Chinese higher vocational college students so as to propose an effective language speaking program for EFL learning and teaching. Specifically, the paper sought to describe the profile of respondents in terms of age, sex, majors, and English learning experience; to determine mobile-assisted language learning (MALL) of respondents as to aim, appropriateness and form; to identify the respondents' interdisciplinary competences in terms of interdisciplinary skills, reflective behavior and recognizing disciplinary perspectives; to assess the L2 speaking strategies in terms of memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies and social strategies; to test the differences in responses on mobile-assisted language learning (MALL), interdisciplinary competences and L2 speaking strategies among Chinese higher vocational college students when grouped according to the profile; to test the relationships among the variables of mobile-assisted language learning (MALL), interdisciplinary competences and L2 speaking strategies; and to propose an effective language speaking program for EFL learning and teaching.

2. Methods

The study used descriptive research method. The data were gathered through standardized survey questionnaires that suited the problems set in the study. This study was descriptive for it described the personal and professional profile of the respondents. This study was quantitative in nature and it also determined the relationships between mobile-assisted language learning, interdisciplinary competences and L2 speaking strategies of the respondents. The participants of this research study were the students of Chinese higher vocational colleges, ranging from Grade One to Grade Three who are majored in arts or science. Different responses were expected from respondents with different years of English learning. There were 443 students of Chinese higher vocational colleges participating in the survey questionnaires, in which 405 valid questionnaires or 91.42 percent of the total population were qualified for the collection of result.

The instruments applied in gathering and collecting data for the study were questionnaires including MALL, interdisciplinary competences and L2 speaking strategies. Part 1 is about the respondents' profile in terms of age,

sex, majors and years of English learning. Part 2 is from Mobile Assisted Language Learning in Saudi EFL Classrooms: Effectiveness, Perception, and Attitude, developed by Alkhudair (2020), with regards to 3 sub-domains: aim, appropriateness and form. Part 3 is from Developing a Measure of Interdisciplinary Competence for Engineers, focused on 3 sub-domains: interdisciplinary skills, reflective behavior and recognizing disciplinary perspectives. Part 4 is from Using Oxford’s Strategy Inventory of Language Learning (SILL) to Assess the Strategy Use of a Group of First and Third Year EFL Algerian University Students developed by Bessai (2018), related to 6 sub-domains, 50 indicators: memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies and social strategies. There are 101 items in total. A 4-point Likert scale with the options of strongly disagree, disagree, agree, and strongly agree was used to display the replies.

Data analysis was conducted with the goal of discovering useful information, drawing conclusions, and supporting decision-making. The researcher used many aspects and methods of data analysis, encompassing various techniques under various names. The collected data were entered, cleaned and analyzed using SPSS version 20.0. In the process of data analysis, the composite mean was first proposed and stated, and then the weighted mean of each sub-variable according to the target was used as the most important indicator of the processing data results and was consistent with the ranking. The results of these indicators revealed the most essential influencing factors and aspects. Ratings, weighted mean, and verbal interpretations were represented by four Likert scales to test student's agreement toward something by selecting strongly disagree, the lowest to strongly agree, the highest. A comprehensive analysis was conducted on the comprehensive average, the highest weighted average and the lowest weighted average respectively. Additionally, frequency distributions, percentages, rankings, and T-tests were also included in the analysis to raise some questions.

Prior to conducting this investigation, the researcher sought the approval of the Ethics Board Review of the Lyceum of the Philippines University. None of the respondents' names was disclosed for ethical consideration and confidentiality policy for the sake of their identity or to practice or utilize ethnic consideration. The researcher had already made it known to the respondents that the questionnaire was only a big data survey for performing this research and there was no other use or aims. Respondents voluntarily participated in the study. In addition, the questionnaire was administered on the basis of the respondents' comprehension of the research instructions and research items. As for citations, the researcher made certain that all citations were included in the references section. Privacy and anonymity of the respondents were of paramount importance and received good consideration. The researcher maintained the highest level of objectivity in discussions and analysis throughout the research process.

3. Results and Discussion

Table 1
Summary Table on Mobile-Assisted Language Learning

Indicators	Weighted Mean	Verbal Interpretation	Rank
Aim	3.11	Agree	2
Appropriateness	3.09	Agree	3
Form	3.14	Agree	1
Composite Mean	3.11	Agree	

Legend: 3.50 – 4.00 = Strongly Agree; 2.50 – 3.49 = Agree; 1.50 – 2.49 = Disagree; 1.00 - 1.49 = Strongly Disagree

Table 1 presents the summary of respondents’ responses on mobile-assisted language learning. Item 3 on form scored 3.14, ranking No.1. The study found that as for the form of MALL, participants’ overall perceptions were positive, showing a high degree of agreement. For aim, the score is 3.11, ranking the second. This shows that participants agreed with the goal of language learning on mobile devices and were positive overall. The results of appropriateness (3.09) showed that participants were positive and agreed with the applicability of language learning on mobile devices. For learning forms, Mobile Assisted Language Learning (MALL) brings innovative and more novel opportunities. The immersive learning experience helps to increase learners’ motivation and interest, making learning more lively and interesting (Arvanitis & Krystalli, 2021). MALL plays an active role in learning aims. After setting learning goals, learners can share resources through the MALL platform, which provides opportunities for mutual help and supervision. As to the appropriateness, mobile language learning

platforms usually provide a variety of learning resources and tools in which learners can find skills that suit their learning style. On the basis of the existing positive attitude, the application scenarios of mobile language learning should be actively expanded, the active exploration of learners should be supported and encouraged, and students should be helped to participate in online activities and formulate learning plans to further improve the learning effect (Czerska, 2016).

Table 2*Summary Table on Interdisciplinary Competences*

Indicators	Weighted Mean	Verbal Interpretation	Rank
Interdisciplinary Skills	3.11	Agree	2
Reflective Behavior	3.09	Agree	3
Recognizing Disciplinary Perspectives	3.12	Agree	1
Composite Mean	3.11	Agree	

Legend: 3.50 – 4.00 = Strongly Agree; 2.50 – 3.49 = Agree; 1.50 – 2.49 = Disagree; 1.00 - 1.49 = Strongly Disagree

Table 2 shows item 3 on recognizing disciplinary perspectives scored 3.12, ranking No.1. The study found that when it came to identifying disciplinary perspectives, participants' overall perceptions were positive, showing a high degree of agreement. Interdisciplinary skills scored 3.11, ranking the second. Reflective behavior scored 3.09, ranking the third. The results showed that in terms of reflective behavior, participants held a positive attitude and expressed agreement. Respondents had the highest overall agreement on Recognizing Disciplinary Perspectives. It shows that they possess key competences in interdisciplinary interaction. As to studies on "Interdisciplinary Skills", Klaassen (2018) proved that students are not only capable of mastering knowledge of different disciplines, but also able to find the internal links between different disciplines and integrate knowledge independently. The relatively weak ranking of "Reflective Behavior" indicates that respondents are relatively weak in this area. In order to strengthen this ability, it is suggested that learners should be encouraged to actively appreciate the views of different disciplines to prevent disciplinary bias.

Table 3*Summary Table on L2 Speaking Strategies*

Indicators	Weighted Mean	Verbal Interpretation	Rank
Memory Strategies	3.09	Agree	5
Cognitive Strategies	3.12	Agree	4
Compensation Strategies	3.15	Agree	1.5
Metacognitive Strategies	3.08	Agree	6
Affective Strategies	3.14	Agree	3
Social Strategies	3.15	Agree	1.5
Composite Mean	3.12	Agree	

Legend: 3.50 – 4.00 = Strongly Agree; 2.50 – 3.49 = Agree; 1.50 – 2.49 = Disagree; 1.00 - 1.49 = Strongly Disagree

Table 3 presents the summary of the respondents assessment on L2 speaking strategies. The composite mean of 3.12 indicates that the respondents agreed in general. Among the 6 sub-domains cited, the average scores of compensation strategies and social strategies are both 3.15, ranking the highest, which was followed by affective strategies (3.14). Students showed strong agreement in L2 speaking strategies, particularly in terms of compensation strategies and social strategies. The reason for the high recognition may lie in the practical needs of the actual language application. Bestari and Kuswandono. (2023) found that students demonstrated their self-motivation and self-management ability by rewarding themselves, which helped to improve students' level of critical and metacognition thinking. The effectiveness of emotional strategies in learning, including self-motivation, emotional expression, mutual learning, and the use of oral strategies that help improve learning outcomes, develop academic abilities, and enhance social and communication skills. On the other hand, items such as metacognitive strategies (3.08) and memory strategies (3.09) rated the lowest. There are many reasons for the low recognition of memory strategies. Traditional English learning is limited by the limited classroom content and lack of sufficient learning resources (Richards, 2015). Future education should focus on providing diverse learning resources, developing associative memorization, strengthening practical application, and encouraging students to participate more actively in oral practice.

Table 4*Relationship Between Mobile-Assisted Language Learning and Interdisciplinary Competences*

Aim	rho-value	p-value	Interpretation
Interdisciplinary Skills	.356**	0.000	Highly Significant
Reflective Behavior	.454**	0.000	Highly Significant
Recognizing Disciplinary Perspectives	.410**	0.000	Highly Significant
Appropriateness			
Interdisciplinary Skills	.448**	0.000	Highly Significant
Reflective Behavior	.401**	0.000	Highly Significant
Recognizing Disciplinary Perspectives	.465**	0.000	Highly Significant
Form			
Interdisciplinary Skills	.456**	0.000	Highly Significant
Reflective Behavior	.456**	0.000	Highly Significant
Recognizing Disciplinary Perspectives	.387**	0.000	Highly Significant

Legend: Significant at p-value < 0.01

Table 4 presents the association between mobile-assisted language learning and interdisciplinary competences. It was observed that the computed rho-values indicate a moderate direct correlation because the resulted p-values were less than the alpha level. This means that there was significant relationship exists and implies that the better is the mobile-assisted language learning, the better is interdisciplinary competences.

As for aim to interdisciplinary skills, reflective behavior and recognizing disciplinary perspectives, the calculated Rho-values are 0.356, 0.454 and 0.410 respectively, and the corresponding p-values are all 0.000. This indicates that there is a highly significant positive correlation between mobile-assisted language learning and interdisciplinary competences in goal setting. As for appropriateness to interdisciplinary skills, reflective behavior and recognizing disciplinary perspectives, the calculated Rho-values are 0.448, 0.401 and 0.465 respectively, and the corresponding p-values are 0.000. This indicates that there is a highly significant positive correlation between mobile-assisted language learning and interdisciplinary competences in appropriateness. As for form to interdisciplinary skills, reflective behavior and recognizing disciplinary perspectives, the calculated Rho-values are 0.456, 0.456 and 0.387 respectively, and the corresponding p-values are all 0.000. This indicates that in form, there is a highly significant positive correlation between mobile-assisted language learning and interdisciplinary competences.

In summary, all calculated P-values are less than 0.01 significance level, so it can be concluded that there is a significant positive correlation between mobile-assisted language learning and interdisciplinary competences.

Table 5*Relationship Between Mobile-Assisted Language Learning and L2 Speaking Strategies*

Aim	rho-value	p-value	Interpretation
Memory Strategies	.462**	0.000	Highly Significant
Cognitive Strategies	.414**	0.000	Highly Significant
Compensation Strategies	.337**	0.000	Highly Significant
Metacognitive Strategies	.390**	0.000	Highly Significant
Affective Strategies	.395**	0.000	Highly Significant
Social Strategies	.366**	0.000	Highly Significant
Appropriateness			
Memory Strategies	.487**	0.000	Highly Significant
Cognitive Strategies	.401**	0.000	Highly Significant
Compensation Strategies	.459**	0.000	Highly Significant
Metacognitive Strategies	.425**	0.000	Highly Significant
Affective Strategies	.417**	0.000	Highly Significant
Social Strategies	.457**	0.000	Highly Significant
Form			
Memory Strategies	.420**	0.000	Highly Significant
Cognitive Strategies	.383**	0.000	Highly Significant
Compensation Strategies	.397**	0.000	Highly Significant
Metacognitive Strategies	.462**	0.000	Highly Significant
Affective Strategies	.350**	0.000	Highly Significant
Social Strategies	.372**	0.000	Highly Significant

Legend: Significant at p-value < 0.01

Table 5 shows the association between mobile-assisted language learning and L2 speaking strategies. It was observed that the computed rho-values indicates a moderate direct correlation because the resulted p-values were less than the alpha level. This means that there was significant relationship that exists and implies that the better is the mobile-assisted language learning, the better are the strategies in speaking employed.

As for aim to memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies and social strategies, the calculated RHO-values are 0.462, 0.414, 0.337, 0.390, 0.395 and 0.366 respectively, and the corresponding p-values are all 0.000. This indicates that there is a highly significant positive correlation between mobile-assisted language learning and L2 speaking strategies in goal setting. As for appropriateness to memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies and social strategies, the calculated RHO-values are 0.487, 0.401, 0.459, 0.425, 0.417 and 0.457 respectively, and the corresponding p-values are 0.000. This indicates that there is a highly significant positive correlation between mobile-assisted language learning and L2 speaking strategies in appropriateness. As for form to memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies and social strategies, the calculated RHO-values are 0.420, 0.383, 0.397, 0.462, 0.350 and 0.372 respectively, and the corresponding p-values are all 0.000. This indicates that on form, there is a highly significant positive correlation between mobile-assisted language learning and L2 speaking strategies.

Table 6

Relationship Between Interdisciplinary Competences and L2 Speaking Strategies

Interdisciplinary Skills	rho-value	p-value	Interpretation
Memory Strategies	.396**	0.000	Highly Significant
Cognitive Strategies	.366**	0.000	Highly Significant
Compensation Strategies	.299**	0.000	Highly Significant
Metacognitive Strategies	.405**	0.000	Highly Significant
Affective Strategies	.393**	0.000	Highly Significant
Social Strategies	.443**	0.000	Highly Significant
Reflective Behavior			
Memory Strategies	.497**	0.000	Highly Significant
Cognitive Strategies	.415**	0.000	Highly Significant
Compensation Strategies	.387**	0.000	Highly Significant
Metacognitive Strategies	.451**	0.000	Highly Significant
Affective Strategies	.373**	0.000	Highly Significant
Social Strategies	.394**	0.000	Highly Significant
Recognizing Disciplinary Perspectives			
Memory Strategies	.445**	0.000	Highly Significant
Cognitive Strategies	.454**	0.000	Highly Significant
Compensation Strategies	.401**	0.000	Highly Significant
Metacognitive Strategies	.454**	0.000	Highly Significant
Affective Strategies	.406**	0.000	Highly Significant
Social Strategies	.426**	0.000	Highly Significant

Legend: Significant at p-value < 0.01

Table 6 displays the association between interdisciplinary competences and speaking strategies. It was observed that the computed rho-values indicates a moderate direct correlation because the resulted p-values were less than the alpha level. This means significant relationship exists and implies that the better is the interdisciplinary competences, the better are the strategies in speaking employed.

As for interdisciplinary skills to memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies and social strategies, the calculated RHO-values are 0.396, 0.366, 0.299, 0.405, 0.393 and 0.443 respectively. The corresponding p-value is 0.000. This indicates that in terms of interdisciplinary skills, there is a highly significant positive correlation between interdisciplinary competence and L2 speaking strategies. According to Yang et al. (2022), in their 8-week interdisciplinary course, learners are guided to create stories using spoken English, and it is found that interdisciplinary skills can make students' spoken English more creative and able to use English more skillfully. This is a good proof of the research results of this paper.

As for reflective behavior to memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies and social strategies, the calculated RHO-values are 0.497, 0.415, 0.387, 0.451, 0.373 and 0.394 respectively, and the corresponding p-values are 0.000. This indicates that there is a highly significant positive correlation between interdisciplinary competence and L2 speaking strategies in reflective behavior.

As for recognizing disciplinary perspectives to memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies and social strategies, the RHO-values obtained by calculation are respectively 0.445, 0.454, 0.401, 0.454, 0.406 and 0.426, and the corresponding p-values are all 0.000, which further confirms the significance of the positive correlation relationship. The results indicate that learners with good awareness of interdisciplinary perspectives and active participation in interdisciplinary communication and cooperation are more likely to adopt verbal strategies such as recitation, imitation of native language use, practice, and interaction with native speakers.

Table 7
Proposed Language Learning Program for Chinese Higher Vocational College Students

Key Result Area/ Program Objectives	Strategies / Activities	Success Indicators	Persons Involved
1. Mobile-Assisted Language Learning			
<p>Appropriateness</p> <p>-applications facilitate language learning.</p> <p>Objectives:</p> <p>1. To improve students' recognition of the mobile facilitation on language learning.</p> <p>2.To help students use the good method of mobile application for interaction in English class.</p>	<p><u>Improving the ability to use mobile applications</u></p> <p>-take part in training seminars on how to use the common mobile applications</p> <p>-participate in skill competitions on English speaking with the help of mobile applications</p> <p>-practice more with partners with higher scores</p> <p><u>Gaining more accesses to mobile learning resources</u></p> <p>-learn about more online speaking courses and practice how to use them</p> <p>-take part in class activities on finding more effective English speaking apps and websites</p> <p>-use mobile applications and website resources in class to interact with other students and teachers.</p> <p><u>Enhancing the effect of mobile applications</u></p> <p>-complete M-based English speaking tasks in the spare time</p> <p>-take part in class activities presenting how students use mobile applications for English speaking by making use of the fragmented time</p> <p>-ask for meaningful feedbacks and suggestions on the use of mobile applications</p>	<p>95 percent of the students can improve their recognition of the mobile facilitation on language leaning and can skillfully use mobile applications to interact in English class.</p>	<p>Instructors, English teachers, Students, Peers</p>
2. Interdisciplinary Competences			
<p>Reflective Behavior</p> <p>- frequently stop to think about where I might be going wrong or right with a problem solution</p> <p>Objective:</p> <p>To improve students' ability of self-reflection and self-cognition when solving a problem</p> <p>- often make comparisons among different approaches when I decide to do things</p> <p>Objective:</p> <p>To enhance students' ability to make the best choice among different ones</p>	<p><u>Developing self-reflection and self-cognition habits</u></p> <p>-discuss factors that lead to solution or failure of a problem</p> <p>-identify one's own advantages and disadvantages in solving a problem</p> <p>-enhance confidence in one's own ability to solve problems</p> <p><u>Improving contrastive thinking ability</u></p> <p>-display the usage and effect of different approaches to the same problem</p> <p>-do the same thing with other students majoring in different disciplines and make comparison</p> <p>-take part in campus activities with students from different disciplinary backgrounds</p> <p><u>Enhancing interdisciplinary competences</u></p> <p>-enrich knowledge in other fields</p> <p>-invite schoolmates from different majors to express their views on the same problem</p> <p>-compare different solutions in terms of different ways</p>	<p>90 percent of the students can well identify their own advantages and disadvantages in solving problems and provide different solutions to the same problem.</p>	<p>Instructors, English teachers, Students, Peers</p>

- frequently use knowledge and skills from another field and imagine a different result Objective: To enhance students' awareness and ability to solve problems in different ways			
3. L2 Speaking Strategies			
Metacognitive Strategies - try to find as many ways as I can to use my English Objective: To help students adopt many different ways to use English	<u>Increasing participation in different English activities</u> -take part in different English activities, for example, English movies, English songs competitions, English lectures and English corner activities -use English in different situations, for example, English presentation in class, English tour guide of the campus, English corner in dormitories, and English speaking competition on the stage. -compare the effect of different students' participation in the different activities and situations. <u>Enhancing ability to use English in different ways</u> -practice speaking English with different partners -use nonverbal language to complement the verbal English language expressions -get rid of the language anxiety when adopting different ways to use English	95 percent of the students can adopt many different ways to use English.	Instructors, English teachers, Students, Peers

4. Conclusions and Recommendations

The findings revealed seven points. First, more than half of participants are female, 20 years old and above, and Science majors with 12 years below of English learning from Chinese higher vocational colleges. Second, the respondents had an agreeable positive attitude towards MALL, were clear about the aim of MALL, could make good use of its appropriateness and form to facilitate communication and supplement the tradition learning. Third, the respondents agreed on interdisciplinary competences, could distinguish the differences between different disciplines and establish connections, master some interdisciplinary skills to solve practical problems, make comparison and conduct reflections to improve English speaking ability. Fourth, the respondents agreed on L2 speaking strategies, could learn and practice English speaking in various ways to strengthen memory, eliminate language anxiety, compensate expression deficiency and improve the effect of communication. Fifth, there was no significant difference in the respondents' MALL, interdisciplinary competences and L2 speaking strategy when grouped according to the profile variables. Respondents' personal characteristics did not influence their responses to MALL, interdisciplinary competences, and L2 speaking strategies at a significant level. Sixth, there was a highly significant correlation among the respondents' MALL, interdisciplinary competences and L2 speaking strategies, which have a good influence on one another and are conducive to students' English speaking, thus, the better adoption of MALL, the better integration of different disciplinary, and the better application of L2 speaking strategies. And last, a language learning program to enhance the EFL of Chinese higher vocational college students was proposed.

The researcher proposes the following recommendations. First, Chinese higher vocational colleges may consider offering more free online resources to students and English teachers, tolerate the application of mobile phones, IPADS or computers in English classes, create a relaxed environment for MALL and enhance students' English-speaking ability. Second, English teachers may provide training and more accesses to target online learning resources to improve the effect of students' MALL application, develop student self-reflection habit, contrastive thinking and interdisciplinary competences to solve practical problems, design different English-speaking activities and enhance students' ability to use English in different ways. Third, Chinese higher vocational college students may learn to better use the mobile tools, online resources, various knowledges from different disciplines and different L2 speaking strategies to improve their EFL speaking ability. Fourth, College administrators may consider evaluating the proposed program for the enhancement of MALL, interdisciplinary competences, L2 speaking strategies, and eventually the enhancement of the speaking ability for Chinese higher

vocational college students. Fifth, future researchers may consult Chinese higher vocational college students on improving EFL speaking ability based on MALL, interdisciplinary competences, L2 speaking strategies, and explore the significance of MALL, interdisciplinary competences, L2 speaking strategies on EFL listening, reading and writing enhancement. Last, higher research college students in China may do survey on their own EFL speaking ability on MALL, interdisciplinary competences, L2 speaking strategies, and make comparison between their findings and those of this research, with the purpose of exploring more effective methods to improve their own English learning.

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