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Exploring Status and Attitudes; Computer Assisted Language Learning in Iranian High Schools

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ABSTRACT

Due to its increasing role in language learning, Computer Assisted Language Learning (CALL) is now widely studied. Much of the recent studies have focused on examining stakeholders' attitudes and investigating its impact on the employment of CALL. We followed a componential definition by considering more variables that allegedly define CALL and as such influence its integration into high school language learning curriculum. The context-related components of CALL were defined, and a total score was assigned which presented a broader understanding of CALL as a variable in the current study. Also, engaging more stakeholders in such studies is supposed to add to the validity and provide a more tangible picture. As such, this study considered four groups of participants, that is students, teachers, preservice teachers and principals. The findings revealed that all groups had moderate to high CALL scores, indicating acceptable CALL skills and knowledge to be gradually qualified to higher standards. Moreover, the study indicated the groups' attitudes did not significantly predict the use of CALL in high school language learning curriculum. It is concluded that other variables, may play a more determining role in predicting the integration of CALL into English classes in high schools.

Introduction

Computer-assisted language learning (CALL) is a highly effective program for language learning, revolutionizing formal language education to a large extent. Teachers worldwide are integrating computers, especially the internet and multimedia, into their instructional practices, as highlighted by Warschauer and Healey (1998). Cognitive researchers put an emphasis on the importance of comprehending linguistic input and noticing gaps in language learning, with motivation playing a crucial role in cognitive processes and deepening understanding (Chapelle, 2001). Technology and related tools can increase motivation and provide opportunities for comprehension and gap noticing.

Drawing on Vygotsky's socio-cultural theory and the zone of proximal development (ZPD), computers mediate language learning, enhance learning experiences and foster self-regulation and independence. Exposure to more linguistic input and multimedia strengthens mental connections and improves memory and learning (Tunçuk, 2010). CALL offers abundant materials and activities available on the internet and stored on computers, facilitating repeated exposure to rich input for language learning purposes. Additionally, it engages learners cognitively and affectively in language learning process (Tomlinson, 2013). These activities also contribute to automaticity and the reconstruction of language skills (McLaughlin, 1980), making language learning more automatic and improving the reconstructing process.

A wide range of the studies have examined factors that impact the integration of CALL in language classes (Aslan & Zhu, 2017; Guillen-Gamez et al., 2020; Nguyen & Habók, 2022). Likewise, researchers have explored different stakeholders' attitudes towards CALL in various educational settings to identify factors, barriers, and reasons for using or not using CALL in educational settings. In this realm, the research reveals that "human agency" is of paramount importance in the acceptance and efficacy"of CALL (Nguyen & Habók, 2022; Abolghasseminits et al., 2013). Students', as a key human agency, attitudes towards the utilization of CALL should be emphasized in the effective use of technology in language learning settings, namely schools (Ma et al., 2005).

The results have indicated that active participation, having control over the learning process, information gathering, negotiation of meaning, and independence are important characteristics of learners who use computers for language learning purposes

(Park & Son, 2009). Thus, their attitudes and affective states should be taken into account when integrating CALL into schools effectively.

Recent studies have indicated that students' attitudes to CALL have tended to be positive (Nguyen & Habók, 2022; Lodhi et al., 2019) and influenced by factors including computer availability, perceived usefulness and ease of use, self-efficacy, self-paced learning, teacher-led instruction, and multimedia (Tunçok, 2010). Additionally, computer use, experience, age, gender, years of studying English, cultural context, and students' needs all influence attitudes towards CALL (Tunçok, 2010). Furthermore, CALL has a positive impact on language skills, such as speaking and reading skills, and subskills including grammar and vocabulary knowledge, and giving and receiving feedback (Tunçok, 2010).

Similar to students' role, teachers play a vital role in implementing CALL and technology in school classes (OTA, 1988). An effective integration of CALL into classroom depends heavily on the attitudes of the teachers (Park & Son, 2020; Scherer et al., 2018). For instance, if teachers agree that CALL integration does not meet their own or their students' needs, they are not likely to employ the related tools into their teaching (Park & Son, 2020). Therefore, teachers' attitudes towards CALL play a significant role in its integration.

Teachers' attitudes towards technology are highlighted by Huang and Liaw (2005) and Shapka and Ferrari (2003). Language educators are responsible for leveraging technology to support language learning (ACTFL, 2017). However, obstacles including inadequate professional development and limited facilities hinder CALL implementation in educational settings (Yang & Huang, 2008; Hedayati & Marandi, 2014). More specifically, the implementation of CALL in Iran faces its own unique set of obstacles and challenges, such as infrastructure-related issues, curriculum development process, and unclear goals and objectives.

Research has shown that teachers generally have positive attitudes towards CALL integration (Aydin, 2013; Ertmer et al., 2014; Kessler, 2007; Lam, 2000; Mollaei & Riasati, 2013; Yang et al., 2008). Factors influencing teachers' attitudes include cultural factors, readiness, learner-oriented environments, computer training, school support, creative teaching practices, and beliefs (Mollaei et al., 2013; Yang et al., 2008). Barriers such as lack of support, limited software knowledge, and technical issues also

impact attitudes negatively (Aydin, 2013; Ertmer et al., 2014). Professional development, training opportunities, equipment availability, time constraints, and teachers' goals and beliefs also influence attitudes to a large extent (Ertmer et al., 2014).

Similar to teachers, school principals and administrators play a significant role in CALL implementation (Cox et al., 1988). Obstacles including infrastructure, personnel, curriculum development, software/hardware availability, unclear goals, instructional challenges, and administrative issues are named by this group of people (Akbaba-Altune, 2006). To sum up, in the context of Iran, addressing teachers' attitudes and challenges, and gaining support from principals and administrators are crucial for successful CALL implementation.

This research stands out from previous studies by considering CALL as the dependent variable. A new componential definition of CALL was provided, encompassing a wide variety of components including PC ownership, computer skills, completion of computer courses, frequency of computer use, utilization of PC-related tools, internet access, CALL experience, and participation in CALL courses. These components determine the use of CALL in different domains, along with the proficiency level of its users and their readiness to employ it in educational settings (Aydin, 2013; Cox et al., 1988; Ertmer et al., 2014; Kessler, 2007; Lam, 2000; Liaw et al., 2007; Mollaei et al., 2013; SariÇoban, 2013; Teo, 2009; Teo et al., 2007; TunÇok, 2010; Yang et al., 2008). Previous studies have not treated CALL as a distinct variable, focusing only on attitudes towards CALL without clear componential definition. They relied on established definitions by CALL practitioners, overlooking factors like tools, duration of computer usage, and computer ownership. These factors were considered background information, not examining their precise effectiveness on CALL integration into language learning contexts.

Several scholars have proposed well-known definitions of CALL (Egbert & Petriel, 2005). However, providing a unified definition for CALL is difficult due to its dual nature as an academic discipline and practical tool (Torsani, 2016). It is important to provide a specific and componential definition of CALL tailored to specific contexts, taking unique circumstances and requirements into account. This study investigated the attitudes of teachers, students, and principals, towards the componential definition of CALL. The objective was to examine the effect of attitudes on the integration and

acceptance of CALL in high schools, aiding educational authorities in developing effective curricula based on the findings.

The following research hypotheses guided this study:

1. Students do not have positive attitudes towards the use of CALL in high schools.
2. Teachers do not have positive attitudes towards the use of CALL in high schools.
3. Preservice teachers do not have positive attitudes towards the use of CALL in high schools.
4. Principals do not have positive attitudes towards the use of CALL in high schools.
5. There is no relationship between CALL and the attitudes of stakeholders.
6. The attitudes of stakeholders do not predict the use of CALL in high school curriculum

Method

Participants

This study engaged four groups of participants: students, teachers, pre-service teachers, and principals. A total of 297 students aged 16-17 were selected from two high schools in Ardabil city, Iran. While students from all three grades (first, second, third) were included, the selection process was not equal or random due to limitations in having access to students and non-cooperation from some schools.

In addition to students, 100 high school English teachers, 113 preservice teachers, and 50 high school principals participated in this study. The teachers' ages ranged between 40 and 49 years with BA degree. Moreover, almost equal number of young male and female preservice teachers (within the 19-29 years' age range) reported their ideas. They were selected from Mohaghegh Ardebili and Farhangian universities comprising both undergraduate and graduate students in TEFL programs. They were selected as preservice teachers because they represent the new generation and possess fresh perspectives on emerging trends and technology. The last group of participants were BA and MA holder (within the 40-49 years' age range) high school principals.

Instruments

Participants' attitudes towards CALL were assessed using 5-point Likert Scale questionnaires (1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree). Separate questionnaires were provided for each group of participants. More specifically, to evaluate students' attitudes towards CALL, two Likert-scale questionnaires were synthesized from the studies by Vandewaetore and Desmet (2009) and Talebinezhad et al (2013). The originally reported reliability of these questionnaires was confirmed in this study (α = .83). The new questionnaire for students consisted of five sections with a total of 48 items. Also, for teachers' attitudes towards CALL, Mollaei et al.'s (2013) questionnaire on teachers' perception of integrating CALL into classrooms was used.

Preservice teachers' questionnaire was a combination of questionnaires used in Kit-Ma et al. (2005) and SariÇoban (2013). Each variable in these questionnaires demonstrated high reliability (αPU = 0.93, αPE = 0e95, αSN = 0.89, αIU = 0.87, α = 0.78, and α = 0.68), respectively. The questionnaires were merged to encompass both technological acceptance model (TAM) components (i.e., perceived usefulness, perceived ease of use, subjective norm, and facilitating conditions) and Computer Attitude Scale (CAS) components (i.e., affective component, perceived usefulness, perceived control, behavioral intention). This resulted in a single questionnaire with a total of 50 items based on the study's objectives.

The questionnaire for principals was selected based on Brummelhuis and Tjeerds' (1993) study. The reported reliability for this questionnaire indicated a high level one (α = .96). It encompassed three sections with a total of 38 items. The questionnaires for teachers, preservice teachers, and principals also have an open-ended question to gather their ideas, suggestions, and barriers related to the implementation and use of CALL which will be considered in another paper.

To measure CALL as a distinct variable, scoring scales were defined by the researchers (Table 1). They scored the components of CALL and calculated the CALL scores for each participant. A more detailed quantitative assessment of CALL was pursued in order to more reliably determine the relationship between attitudes towards CALL and its real employment.

Table 1
Call Score Details for Students

Owning PC	score	Skill in using	score	Passing computer course	score	Frequency of use	score	Using tools (7 tools)	score
Yes	4	Very little	1	Yes	4	Once a week or less	1	Often	4
No	0	Little	2	No	0	Once or twice	2	Sometimes	2
		Average	3			3 or 4 times	3	Never	0
		Much	4			5 or more times	4		
		Very much	5						

We included seven tools for the last question including Electronic Mail, Computer Games, Online Shopping, Consulting Web for Assignments, Entertainment, Social Media Interaction, and Using Office. It was supposed that higher and wider involvement in the use of computer will be a better index of familiarity with computer and as such developing a more positive attitude towards CALL. Links for the instruments are provided at the end of the paper.

Additionally, to provide the quantitative definition of CALL, every component of CALL was scored from 0 to 5. Thus, total score for students as such was from 1 to 45. The scale and scores are represented in Table 1.

Table 2
Call Score Details for Principals, Teachers, Preservice Teachers

Course attendance	scores	Do you own pc	Scores	Access to internet	scores	Experience with CALL	scores	Skill	scores
Yes	4	Yes	4	Yes	4	a = computer course	2	No competence	1
No	0	No	0	No	0	b = CALL course	4	Little competence	2
						c = CALL seminar/ conference	3	Moderate competence	3
						d = read about it	1	Much competence	4

Likewise, for other groups, components of CALL were scored from 0 to 4 and total score was from 1 to 20 which indicates their CALL scores. The scale and scores are detailed in Table 2.

Data Collection Procedures

Firstly, the data collection procedures for the current study involved obtaining permission from the Ministry of Education and distributing questionnaires to students, teachers, and principals in high schools. The Persian version of the students' questionnaire was distributed by principals as face-to-face contact with students was not allowed due to some limitations. Their questionnaires were collected over one-month period of time. English version of teachers' questionnaires was given to them and they were asked to return the completed questionnaires within a maximum of one week. Finally, a total of 100 questionnaires were collected from teachers.

The principals also, returned 50 completed Persian version questionnaires after approximately one week. Additionally, 113 questionnaires were collected from BA and MA students of Mohaghegh Ardebili (89 preservice teachers) and Farhangian universities (24 preservice teachers) at the end of their classes. The questionnaires were completed and returned within 15 minutes after distribution. All answers (even if they answered *No*) to the CALL-related questions were considered in calculating the total CALL score for each participant.

Results

The results of CALL and attitude questionnaires appear below in Table 3.

Table 3
Descriptive Statistics of CALL and Attitude Scores

	N	Minimum	Maximum	Mean	Std. Deviation
Teachers' CALL	100	.00	20.00	16.09	2.67
Teachers' attitude	100	75.00	144.00	112.30	16.47
Preservice teachers' CALL	113	1.00	20.00	13.58	3.75
Preservice teachers' attitude	113	85.00	162.00	130.57	15.99
Principals' CALL	50	7.00	20.00	13.68	3.30
Principals' attitude	50	28.00	124.00	80.64	22.79
Students' CALL	297	1	45	21.45	7.72
Students' attitude	297	8	219	133.02	23.50

The statistical analyses for each group and their results are separately presented below:

Students

The first research question examined the Iranian students' attitudes towards the use of CALL in high schools. The results indicated that students had negative attitudes towards CALL, thus, the null hypothesis was confirmed. Furthermore, students' moderate CALL score showed their relatively good place in CALL.

Based on the results of the normality test, Spearman correlation was used to calculate the correlation coefficient which indicated that CALL and students' overall attitudes significantly correlated which led to reject the null hypothesis. Based on Cohen's (1988) guideline this correlation was medium. Also, linear regression was used to examine whether the use of CALL in high school classrooms for language learning purposes can be predicted by attitudes of students. The results are shown in Table 4.

Table 4
The Result of Linear Regression for Students

M	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.329ᵃ	.108	.105	7.306	.108	35.790	1	295	.000

As seen in Table 4, Adjusted R² was .105 suggesting that 10.5% of the variance of the dependent variable (i.e., CALL) was accounted for by the independent variable (i.e., attitude). It suggests that attitude had 10.8% power to predict the integration of CALL into language learning curriculum in high schools. Results of one-way ANOVA also indicated statistically significant difference, demonstrating that attitude as the independent variable had statistically significant relationship with the dependent variable.

Teachers

The second question tapped into the high school teachers' attitude towards the use of CALL at high schools. The results showed that teachers had positive attitudes towards the integration of CALL into the high schools, and as a result, the null hypothesis was rejected. Additionally, the results revealed that teachers had high CALL score.

The results showed that there was no significant correlation between the two variables and the null hypothesis was confirmed. Correlation was very small which means that there was no strong relationship between CALL and teachers' attitudes towards CALL.

Table 5
The Result of Linear Regression for Teachers

M	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.019ᵃ	.000	-.010	2.68011	.000	.036	1	98	.850

a. Predictors: (Constant), teachers' overall attitudes

The results of linear regression indicated that CALL did not have any relationship with attitude and could not be predicted through gathering teachers' attitudes. Likewise, the results of one-way ANOVA revealed that CALL did not have any association with teachers' attitude.

Preservice Teachers

The results showed that preservice teachers had negative attitude towards CALL (the null hypothesis was confirmed accordingly). The CALL score was also high for preservice teachers. Correlation value shows that there was a relationship between CALL and preservice teachers' attitude towards CALL; however, the correlation was medium (Cohen, 1988). It means that preservice teachers had positive attitudes towards the integration of CALL into the language classrooms at high schools.

Linear regression showed that only 7.4% of the variance of the dependent variable was accounted for by the independent variable (Table 6). Also, results of one-way ANOVA and regression coefficients confirmed the regression results and reported statistically significant results. The result of regression coefficient also indicated that attitude had statistically significant impact on the dependent variable.

Table 6
The Result of Linear Regression for Preservice Teachers

M	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.273ᵃ	.074	.066	3.62902	.074	8.930	1	111	.003

a. Predictors: (Constant), preservice overall attitudes

Principals

Mean scores of the answers to questions have indicated that principals had negative attitude towards CALL. Same as other three groups, principals reported high CALL scores. Results of Spearman correlation showed that there was no relationship between CALL and the principals' attitude towards CALL; which means that the principals' attitude was not effective in using CALL in language learning at high schools and the

null hypothesis was not rejected. The correlation was also very small. Table 7 presents the correlation results.

Table 7
The Result of Linear Regression for Principals

M	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.050[a]	.002	-.018	3.32781	.002	.118	1	48	.732

a. Predictors: (Constant), principal overall attitudes

Linear regression analysis supports the correlation analysis that principals' attitudes could not predict the integration of CALL into the high school classrooms (Table 7). The results of one-way ANOVA indicated that the findings were not statistically significant. Also, regression coefficients results showed that the principals' attitudes didn't have a statistically significant effect on the integration of CALL into high schools.

Discussion

This study explored three groups' attitudes towards CALL integration into the Iranian high school language learning curriculum as well as their effect on its utilization. Factors impacting CALL were found to influence its use. Students expressed negative attitudes towards CALL, contradicting previous studies (Nguyen & Habók, 2022; Lodhi et al., 2019; TunÇok, 2010). They mentioned some reasons, such as limited facilities, inadequate management, and lack of appropriate training opportunities and software. Despite their negative attitudes, students had the necessary requirements for using CALL, as indicated by their moderate CALL score. However, students' attitudes accounted for only 10.8% of the variance, on the use of CALL in high school classrooms.

In contrast to students, teachers reported positive attitudes towards CALL in high schools, consistent with previous research (Ertmer et al., 2014; Lam, 2000; Kessler, 2007; Mollaei et al., 2013; Yang et al., 2008). Teachers showed proficiency in using CALL, shown by their high CALL score. However, despite their positive attitudes, teachers' attitudes did not correlate with their actual use of CALL. In other

words, teachers' attitudes may not reliably predict their skill level or the success/failure of CALL integration in language learning classes in high schools.

Likewise, preservice teachers expressed negative attitudes towards CALL, contrary to previous studies (Teo, 2009, Teo et al., 2007; SariÇoban, 2013). Despite their negative attitudes, preservice teachers indicated competence in computer-related areas, as evidenced by their high CALL score. Like students, preservice teachers' attitudes towards CALL had limited predictive power (7.4%) regarding its use in language learning classes in high schools.

Similarly, principals were reported to have negative attitudes towards CALL, yet they demonstrated proficiency in using CALL-related tools, as shown by their high CALL score. However, there was no significant relationship between principals' attitudes and the use of CALL which means that principals' attitudes may not reliably predict CALL integration into language learning at Iranian high schools.

Overall, the findings revealed that while attitudes towards CALL varied among participants, these attitudes had limited predictive power in terms of the integration and utilization of CALL in language learning classes at Iranian high schools. Other factors, including available resources, management support, and training opportunities, may play a more significant role in exploring the successful implementation of CALL in the high school curriculum. The open-ended responses shed more light on the context and barriers of implementing CALL from the stakeholders' perspective. Principals identified financial problems as the most significant barrier to CALL integration and emphasized the need for CALL to be a mandatory program for both teachers and students in the high school curriculum. Teachers put an emphasis on the lack of CALL facilities in schools, students' unfamiliarity with CALL, and learning through CALL as key barriers to consider in English teaching. They also pointed out the absence of computers in rural regions and the challenges posed by disengaged and lazy students. Teachers suggested that parental involvement and support, along with the actions of authorities, should be taken into account when incorporating CALL into classrooms. Furthermore, they emphasized the importance of considering users' culture.

Preservice teachers expressed positive views on CALL, focusing on its benefits in enhancing teaching and learning process, motivating learners, fostering creativity, and being essential for modern life. They also stated specific advantages like enhancing

writing skills and the availability of various programs like dictionaries. However, they identified some barriers, including the lack of equipment and facilities in schools, teachers' and learners' limited knowledge and experience with CALL, and insufficient training opportunities. They emphasized the importance of up-to-date and regular training courses. Similar to a study conducted by Lam (2000), preservice teachers believed that the country and society were not fully prepared for CALL implementation. They also expressed concerns about student distractions and the perception that computer use is boring and detrimental to their health.

Students provided noticeable suggestions for enhancing English language learning through CALL, including using online games, different audio files, PowerPoint with teacher guidance, conversations with natives, Google for language learning, and speaking books and classes. These suggestions should be considered by researchers and authorities to identify the most appropriate and effective variables for widespread integration of CALL into the language learning curriculum in Iranian high schools.

Conclusion

The current study revealed that the participants' attitudes towards CALL had limited predictive power and impact on the integration of CALL into English classes in Iranian high schools. Also, the participants demonstrated high or moderate CALL abilities and knowledge, indicating that these factors are not barriers to the use of CALL. Further research is needed to explore other variables, conditions, and circumstances that may influence the integration of CALL more comprehensively. The study also identified financial issues, cultural considerations, parental disagreement, and resistance from authorities as additional barriers to the appropriate integration of CALL. These findings highlighted the importance of considering multiple factors to effectively integrate CALL into English classrooms in Iranian high schools.

The findings indicated that attitudes, whether positive or negative, did not have a significant impact on CALL itself or its implementation in English classes in Iranian high schools. Furthermore, stakeholders indicated acceptable and high levels of CALL knowledge and skills. Therefore, there are definitely other variables that may play an influential role in the integration of CALL into the high school curriculum, and further research is needed to identify these variables. The open-ended questions provided

valuable insights into the potential barriers and suggestions for utilizing CALL in high school classrooms. These findings also emphasized the importance of considering these factors to develop effective and prolific curriculum and improve the quality of high school English classes. It is also of high value for researchers to shift their focus from attitudes towards other variables and explore alternative methods and tools to understand why CALL has not been widely integrated into Iranian high schools. Future studies should consider additional stakeholders, including parents and other authorities, and expand the components of CALL based on specific research needs and purposes.

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Link 1: English Version of Students' Questionnaire
https://drive.google.com/file/d/1MjIbQEQG6Fn060mF6h8acl71fsv87nr8/view?usp=sharing

Link 2: Teachers' Questionnaire
https://drive.google.com/file/d/1W7eOYFO82K3YKzMhprx69DAjLywhkoCM/view?usp=sharing

Link 3: Preservice Teachers' Questionnaire
https://drive.google.com/file/d/1LHovpYG5dj6V5neFGllA_hIABbBGH7vO/view?usp=sharing

Link 4: Principals' Questionnaire
https://drive.google.com/file/d/1gya5U_U_3wPzhVsSCSn33l8USVxegMXv/view?usp=sharing