Adaptation of English Teachers to the Use of CALL in Technical Secondary Schools in Nyanza District, Rwanda, and Its Implications on Students' Performance in English

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ABSTRACT

In some Rwandan schools, the use of Computer-Assisted Language Learning (CALL) in English teaching has influenced students' English performance. In technical secondary schools, language teachers have begun utilizing new technologies as pedagogical tools to enhance students' English performance. The current study investigates how teachers adapt to the use of CALL and its implications for students' performance in English subjects in some Rwandan technical secondary schools. Sociocultural theory in language teaching guided this investigation. It used a descriptive research design with a sample of 24 English teachers from Nyanza Technical Secondary Schools. This study utilized a census of all 24 English teachers. Data were collected using questionnaires in the form of a Likert scale. Descriptive analyses indicate that 91% of respondents have a positive attitude towards CALL. The findings show that teachers of English use CALL in teaching English, which affects students' performance in English. The inferential analysis results show a P value of 0.020, which is lower than the significant correction of 0.05. Therefore, the study findings confirm the teachers' positive attitude towards CALL. According to the research, the Rwanda TVET Board should train new teachers and continue updating existing English teachers with new CALL technologies.

Keywords: *Adaptation, Computer-Assisted Language Learning, English, Performance, Technical Secondary Schools*
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I. INTRODUCTION

In many countries around the world, English is considered the official language of instruction and a means of communication among a diversity of people. In many ways, English can serve as a bridge between society and the outside world. Certainly, everyone who wishes to communicate globally should learn the English language (Clyne & Sharifian, 2008).

Despite being the native language of the British, English has now become a universal language that strongly influences many facets of life, including cultural, social, and political arenas, as well as commerce around the world. Nevertheless, English skills are now mandatory for education, the law, business, and some employment. Similarly, the language is also very valuable to non-native speakers. This is because the language has gained prominence over other languages in the world since the 20th century, due to its own prestigious significance (Dutta, 2019).

On the other hand, Computer-Assisted Language Learning (CALL) describes a range of technology approaches used in language learning, such as online language applications, interactive multimedia, wikis, blogs, and email. Over the past few years, these various technologies have become more widely employed by language learners in schools and other settings (Chapelle, 2010). Besides, technology in language teaching has the ability to engage students in the center of learning by optimizing opportunities for a wider diversity of spoken languages with different accents and improving their language skills (Chapelle, 2009).

However, the Rwandan government announced at the end of 2008 that all educational levels must teach the English language component (Tabaro & Twahirwa, 2018). Since then, all educational levels in Rwanda have been teaching that language, but its use outside of the classroom has been rare. Students' reliance on formal language classrooms, where teachers provide limited opportunities to practice the language outside of the classroom in a real-life context, presents a barrier to their successful language acquisition (Wold, 2006).

In Rwanda, the use of English in daily conversations is extremely limited and challenging. Sibomana (2014) has argued that the language skills of most of those who claim to be fluent in that language are sometimes questionable. In many Rwandan technical secondary schools, students graduate with a low level of English skills. This is a common issue in basic education schools, also known as G.S. schools. Despite teaching all subjects in English, except for Kinyarwanda and French, students are demotivated to learn this second language, sparking a substantial debate.

According to Emmanuel et al. (2020), secondary school students who use English as a non-native language in their education process may face failure, but they will also receive tolerance and promotion. In fact, the correction of this issue occurs gradually over the years of education, as a comparison of a student's results across different years reveals some improvement. In other words, the students' past and current performances give hope of doing better. However, the performance in the English language learning process remains poor in comparison to the Ministry of Education's expectations.

Furthermore, individual differences among learners affect their success in language (Mitchell & Myles, 2004). Sibomana (2014) refers to individual differences and categorizes them as learner attributes in terms of the work students do, or self-perception, personal knowledge, and self-determination.

1.1 Statement of the Problem

English, Rwanda's official language of instruction, is considered one of the most important languages in technical education for demonstrating skills to meet labor market demand. In this regard, the Rwanda TVET Board (RTB) attempted all possible ways to support the teaching and learning of English across technical secondary schools. Nevertheless, the students' performance in English at the Technical Secondary Schools of Nyanza District is not at the intended level, despite the fact that English is a medium of instruction across all subjects.

Poor English performance among students not only impacts the overall performance in TSS, but also impacts the employability of TSS graduates. Hence, there is an urgent need to investigate the extent to which computer-assisted instruction can help boost the teaching of English in TSS.

1.2 Research objective

To investigate the level of teachers' adaptation to the use of CALL and its implications on students' performance in English

1.3 Research Hypothesis

H_{O1}: Teachers' adaptation to CALL has no significant positive impact of on Students' performance in English subject

II. LITERATURE REVIEW

2.1 Theoretical Framework

This study was inspired by the sociocultural theory of language teaching. According to sociocultural theory (SCT), language learning is a social process (Blau & Peled, 2012). Interaction with others facilitates the acquisition of language, which subsequently becomes an individual's property. The modern application of SCT draws on Vygotsky's notions of introducing a multimodal approach to the current digital educational system through tools such as computers.

Therefore, we selected sociocultural theory (SCT) to direct this study, as students excel in language when they interact with diverse language users, particularly native speakers; in this context, CALL serves as the most effective solution when a physical native is not present. Thus, students will gain experience through computer-based interaction with various English-language materials.

2.2 Empirical Review
2.2.1 Teachers' Attitude towards CALL

Undeniably, various scholars have conducted research highlighting the crucial role of teachers' attitudes towards technology. Albirini (2006) investigated the attitudes of high school English as Second Language (ESL) teachers in Syria towards CALL and found that the positive attitudes were associated with greater ease in integrating technology into teaching, leading to improved student performance.

Galvis (2012) stated that teachers' personal attitudes significantly influence their decisions regarding the use of technology. Gilakjani & Leong (2012) list the attitude of teachers towards computers as a major factor affecting the successful implementation of CALL in language classrooms, whether positive or negative. In fact, Sarıçoban (2013) noted that students' ability to interact with computers depends mainly on the attitudes and adaptability of teachers to integrate technology in education.

Studies by other scholars, such as Gupta et al. (2021) and Blau and Peled (2012), suggest that teachers' attitudes and views about technology can influence the successful integration of CALL into language classes. As a result, the way that teachers adapt technology in English class is crucial to the effectiveness of its integration. Teachers that have a positive attitude towards technology may incorporate CALL efficiently, which improves student competency and language learning experiences (Nguyen, 2021).

Thus, fostering positive attitudes and providing adequate support and training for teachers to utilize CALL can contribute to the effective integration of technology in language education.

2.2.2 Teachers' computer skills in implementation of CALL

As computers have become increasingly ubiquitous in educational settings, homes, and workplaces, the demand for language learning and computer literacy has surged. Language educators are leveraging new technologies as innovative pedagogical tools in the field of foreign language instruction (Seljan et al., 2004).

Park and Son (2009) revealed that teachers' computer skills and knowledge have a significant influence on their decisions to use CALL. That said, CALL technologies can support language learning in multiple ways, including by allowing teachers to provide timely feedback, facilitate pair and group work, encourage exploratory and comprehensive learning, enhance student language achievement, provide access to authentic language materials, and facilitate interaction (Daar, 2020). Moreover, these technologies can personalize instruction and create opportunities to draw from a variety of resources. Computers can enable these benefits by making language learning more enjoyable, efficient, and effective in a classroom. However, realizing these benefits requires teachers to possess adequate computer skills (Kiliçkaya & Seferoglu, 2013).

In his research, Nami (2021) concluded that language teachers must possess relevant computer literacy to effectively integrate any ICT approach, including CALL, into their daily teaching practices. This would allow them to understand technologies better and develop their pedagogical knowledge to their satisfaction. Furthermore, Yildirim (2000) argued that the successful implementation of CALL hinges on teachers' computer proficiency, as it directly affects their role by motivating their English language learners.

Therefore, applying CALL in English language teaching does not depend on materials but also on teachers' positive outlook on the use of technology (Ndahayo & Ndayambaje, 2024).

2.2.3 Teachers' Training in ICT and CALL Integration

Strong initial preparation and continuous professional development for teachers are crucial for supporting successful student learning in education, particularly when integrating technology (Germuth, 2018). Researchers such as Egbert et al. (2002) and Yildirim (2000) indicated that ICT teacher training programs greatly improve teachers' computer skills and confidence in utilizing technology.

Kiliçkaya and Seferoglu (2013) conducted a study in Turkey which demonstrated that providing ICT training to language teachers enables them to effectively incorporate a variety of CALL-based materials and tools into their classrooms. This training empowers teachers to leverage technology in their teaching methods and enhance students' learning experiences. In Saudi Arabia, Alkahtani (2017) highlighted various issues that arise regarding the integration of ICT tools into school programs; the emphasis was on the need for appropriate training to align digital education. Vi (2011) supported this notion by revealing that training in ICT significantly improves teachers' knowledge and skills, ultimately enhancing students' performance. Vi (2011) further recommended that teachers require training in information and communication technology to effectively support English language teaching.

Ultimately, normalizing the integration of CALL into language teaching can generate benefits because an emphasis on training teachers in the domain remains crucial (Vi, 2011). Providing teachers with continuous professional development opportunities focused on technology integration can foster more confident and competent teachers, leading to better outcomes for students in the digital era. Such training equips teachers to effectively harness the potential of technology to enhance language learning and create engaging and effective language classrooms (Haleem et al., 2022).

III. METHODOLOGY

3.1 Research Design

This research adopted the descriptive research design. Leedy and Ormrod (2015) explain that descriptive research helps to determine and report things naturally with the characteristics, behaviors, attitudes, opinions, or perceptions of a group or population being studied. This design was the best fit in the sense that it was well tied to our study, which was intended to describe the current situation of teachers' adaptability to the use of computer-assisted language learning in teaching and learning English in Nyanza Technical Secondary Schools.

3.2 Research Setting

The research setting pertains to the location where data collection occurs (Igwenagu, 2016). Therefore, the research setting for this study was comprised of 8 technical secondary schools in Nyanza Districts, encompassing Nyanza TSS, Lycee de Nyanza, Maranatha TSS, Kavumu TSS, Hanika TSS, Busasamana TSS, Sainte Trinite, and HVP Gatagara.

3.3 Research Population

The target population refers to the specific group from which the researcher intends to gather information for his/her study (Narayan, 2015). The population for this study comprised English teachers from 8 Technical Secondary Schools (TSS) situated in Nyanza District which makes a total of 24 target group.

3.4 Sample size

The current research used a census of all 24 teachers. A census is a study of every unit, everyone or everything, in a population. This infers a complete enumeration, which means a complete count. Furthermore, census is a quantitative research method where the researcher collects data and analyses it using statistics (Creswell, 2009.)

3.5 Research Instruments and Data Collection

In this study, the researchers used questionnaires containing four Likert scaling questions to collect data. Making such a choice depended on the expedient, cost-effective, and swift nature of questionnaires for collecting substantial data from sizable sample groups. Researchers judged the questionnaire adequate because it helped them "evaluate aspects like subject behaviors, preferences, intentions, attitudes, and opinions, which align with the scope of this research" (Abawi, 2017).

The questionnaires' designations included statements with predetermined response options. These statements aimed at capturing information pertaining to the study variables, focusing on three key areas: The first area of focus was teachers' adaptation to the use of CALL. The questionnaire examined the extent to which teachers had incorporated CALL into their teaching methods and how this influenced students' performance in English. Each of the statements used close-ended statements, providing respondents with structured options for their responses.

IV. FINDINGS & DISCUSSIONS

4.1 Introduction

This chapter presents the findings from the collected and analyzed data. It starts with response rate, demographic characteristics of respondents, and then data presentation and analysis. The study's findings align with its objectives. The analysis delves into teachers' adaptation to the use of CALL and its implications for students' English performance. Findings were presented using descriptive statistics and inferential statistics. This was done in tables and discussions thereof.

4.2. Response Rate

The research sampled 24 English teachers from technical secondary schools in the Nyanza District of Rwanda, who responded to the questions focusing on their adaptation to the use of CALL and its implications for students' performance in English. The responses to the research questions offered insightful perspectives on various aspects of integrating technology into English language teaching.

Table 1

Response Rate

Sampled	Responded	Response Rate
24	24	100%

The above table 1 indicates the study sampled of 24 English teachers from technical secondary schools in the Nyanza District of Rwanda. All the interviewees responded to the questions focusing on teacher's adaptation to the use of CALL and its implications for students' performance in English.

4.3 Demographic Characteristic of Respondents

This study revealed information about teachers of English as subject from 8 Nyanza TSS. Their gender, age and school status were taken into consideration. The findings are discussed in Table 2.

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Table 2
Distribution of Respondents' Demographic Characteristics

Demographic Characteristic		Frequency Distribution	Percentage
Age	18 to 23	1	4.16%
	24 to 29	5	20.83%
	30 to 35	15	62.50%
	36 to 40	2	8.33%
	Above 41	1	4.16%
Gender	Male	14	58.33%
	Female	10	41.66%
School Status	Public	16	66.66%
	private	6	25%
	Government Aided	2	8.33%

N=24

Findings indicated that most of the teachers (15, 62.5%) who participated in this study were aged between 30 and 35, followed by 5 (20.83%) who were aged between 24 and 29. Furthermore, 2 (8.33%) teachers were between the ages of 36 and 40, while only one teacher, who was 41 years old, was between the ages of 18 and 23. Therefore, the study concludes that most teachers of English in Nyanza TSSs are aged between 30 and 35 years old. Furthermore, as far as gender is concerned, 14 (58.33%) teachers are males, while 10 (41.66%) are females. Therefore, there was no significant difference between male and female teachers teaching English as a subject in Nyanza TSSs. The study findings indicated that 16 (66.66%) of schools are public, 6 (25%) are private, and 2 (8.33%) are government-aided.

4.3 Presentation of Findings
4.3.1 Teachers' Adaptability to the Use of CALL
The analysis aimed to determine how participants perceived the effect of teachers' adaptation on the integration of CALL while teaching the English subject. Initially, the distribution of responses in terms of frequencies and corresponding percentages across the Likert scale is displayed in Table 3.

Table 3
Distribution of Responses to the Teachers' Adaptation to the Use of CALL

Statements	SA	A	D	SD	Mean	Std. Dev.
My attitude toward the use of technology influences the integration of CALL in the teaching of English language	2(8.3%)	22(91.7%)	0	0	3.92	.282
Integrating CALL affects teaching of English language positively and improves students' performance	12(50%)	12(50%)	0	0	3.50	.511
Integration of CALL as teachers of English makes easy my job of teaching since I have less tasks	15(62.5%)	7(29.2%)	2(8.3%)	0	3.54	.658
CALL fits for getting variety information when teaching English	14(58.3%)	10(41.7%)	0	0	3.5833	.50361
The integration of CALL in teaching of English language is quite tasking and involving students in real learning	15(62.5%)	9(37.5 %)	0	0	3.63	.495
The availability of enough computer skilled teachers of English has improved students' performance in English.	0	14(58.3%)	10(41.7%)	0	3.58	.504
Through training in ICT, teachers acquire confidence in the mastery of English language.	4(16.7%)	16(66.7%)	3(12.5%)	1(4.2%)	2.96	.690

N=24

It was observed from Table 3 that most of the respondents strongly agreed that teachers' attitudes toward the use of technology influence the integration of CALL in the teaching of the English language. On the other hand, teachers further agreed that integrating CALL affects the teaching of the English language positively, hence improving students' performance. Both the respective means of 3.92 and 3.50 proved the language teaching improvement via students' performance. Furthermore, teachers strongly agreed that integration of CALL as teachers of English makes their job of teaching easier and agreed that CALL is an appropriate means of getting variety information when they are teaching the language. This fact was confirmed by a mean of 3.54 and 3.58 for the respective statements. The study further established the perception with regard to teachers' training in the use of ICT in teaching. The mean of 2.96 and standard deviations of .690 were established to enable the researcher to draw inferences from the findings.

This implies that teachers are adaptive to the CALL and have a positive attitude toward its integration into English teaching. These findings join the findings of Sarıçoban (2013) who asserted that the performance of students

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who use computer technology depends largely on the attitudes of teachers and their willingness to embrace technology in education. This also confirms the findings of Kafu-Quvane and Chikoko (2019), who claimed that the extent to which technology is implemented in education, depends on teachers' positive attitudes towards it, and successful technology integration heavily relies on teachers' adaptation.

Table 3 also highlights that through training in the use of ICT in teaching, teachers acquire confidence in the mastery of the English language, which consequently enhances students' performance. Kiliçkaya and Seferoglu (2013) announced this as they demonstrated that providing ICT training to language teachers enables them to incorporate a variety of CALL-based materials and tools into their classrooms effectively. The descriptive analysis from Table 2 confirms these researchers' findings, as they supported the inferential analysis that demonstrated the positive and significant correlation between teachers' adaptation and students' performance since the P value equals 0.020, which is less than the significant correlation of 0.05.

The responses to the open-ended research questions offer insightful perspectives on various aspects of integrating technology into English language teaching.

Firstly, the teachers' attitudes toward technology significantly influence their willingness to integrate CALL into their teaching practices. Positive attitudes towards technology are likely to enhance the adoption and effective use of CALL, which can lead to improved teaching outcomes and better student performance in English.

The majority of the teachers agreed that integrating CALL positively affects the teaching of English, as it enriches the learning experience and boosts students' performance. This positive impact is attributed to the interactive and engaging nature of CALL, which provides diverse resources and tools that facilitate better understanding and retention of language concepts. CALL is perceived as an appropriate means of accessing a variety of information when teaching English. It opens up a wealth of online resources, including multimedia content, interactive exercises, and up-to-date materials that can make lessons more dynamic and relevant.

The availability of computer-skilled teachers was highlighted as a crucial factor in improving students' performance in English. Teachers who are proficient in using technology can better leverage CALL tools to enhance their teaching methods and address individual student needs more effectively.

Finally, training in ICT use is essential for teachers to acquire confidence in their mastery of the English language. Continuous professional development in technology use not only improves teachers' technical skills but also their pedagogical strategies, leading to more effective teaching and better learning outcomes for students.

In conclusion, the adaptation of English teachers to the use of CALL in Nyanza District's technical secondary schools has significant positive implications for students' performance in English. While there are challenges related to workload and student engagement, the overall benefits of integrating technology in language teaching are evident, particularly when teachers are well-trained and possess a positive attitude toward the use of CALL.

4.3.2 Findings for Students' Performance as Dependent Variable

The study sought to find out the level of English language performance in 3 consecutive years in the study area. The findings were presented in Figure 1.
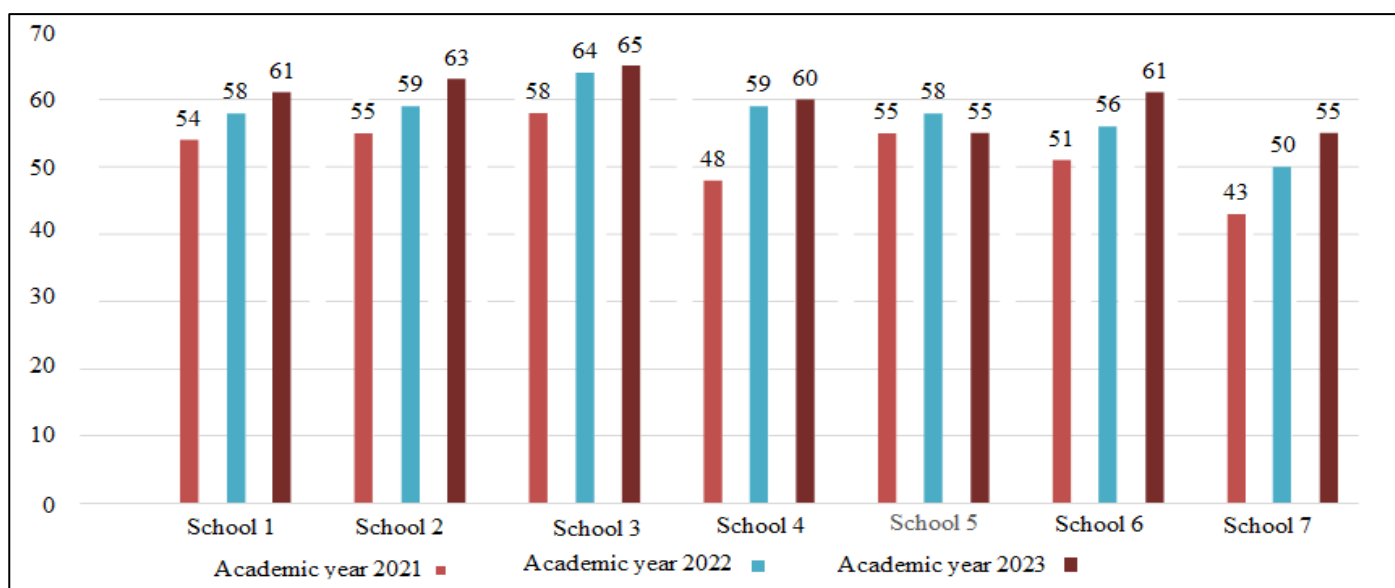
Figure 1
Students' Performance in English Subject in 3 Consecutive Academic Years

Considering how students performed in English subjects in three consecutive academic years in seven technical secondary schools, we found average percentages of 52%, 57.7%, and 60%. These percentages were recorded in 2021, 2022, and 2023 for five students in the construction technology trade in the third-term end assessments. Thus, as the years pass, the change in English performance depends on the use of ICT in teaching across all subjects in technical secondary schools, which has become a vibrant emphasis of RTB.

4.4 Inferential Analysis
4.4.1 Pearson Correlation

Table 4 shows that there was a significant positive correlation between teachers' adaptation and students' performance since the P value equals 0.020 (r = 0.227, P = 0.020). However, the correlation was found to be statistically significant at the P<.05 level of significance. As a result, we conclude that teachers' adaptation to the use of CALL in English affects positively the performance of students in Nyanza Technical Secondary Schools.

Table 4
The Relationship between Teachers' Adaptation to the Use of CALL and Students' performance

		Teachers Adaptation	Students' Performance
Teachers' Adaptation	Pearson Correlation	1	.187*
	Sig. (2-tailed)		057
	N	24	105
Students' Performance	Pearson Correlation	.227*	1
	Sig. (2-tailed)	.020	
	N	24	105

*. Correlation is significant at the 0.05 level (2-tailed).

4.4.2 Hypothesizes Regression Analysis

The study seeks to investigate the effect of teachers' adaptation to the use of CALL on the students' performance in English. The following hypothesis was proposed: There is a significant positive impact of teachers' adaptation to CALL on students' performance in English.

The dependent variable was regressed to predict variables of teachers' adaptation. The independent variable significantly predicts students' performance in English, $F_{(2, 102)} = 3.141$, $P<.047$, which indicates that the factors under the study have a significant impact on students' performance. Moreover, $R^2 = 0.581$ indicates that the model explains 58.1% of the variance in students' performance.

Additionally, coefficients were further assessed to ascertain the influence of the independent variable on the dependent variable. $H0_1$ evaluated whether teachers' adaptation did not significantly and positively affect students' performance. The results revealed that teachers adaptation' to the use of CALL significantly and positively affects students' performance ((B .458, t = 2.321, p =.022). Hence, $H0_1$ was rejected.

Table 5
Impact of Independents Variables on Dependent Variable

Hypotheses	Regression weights	B	t	p-value	Results
$H0_1$	TA SP	0.458	2.321	0.022*	Supported
R	0.241				
F(2,102)	3.141				

Note. *p<0.05. TA: Teachers' Adaptation to the use of CALL, SP: Students' Performance.

V. CONCLUSIONS & RECOMMENDATIONS

5.1 Conclusions

Following the completion of data collection and subsequent analysis, the research question was directly addressed by incorporating both descriptive and inferential statistics and drawing conclusions. Teachers who held positive attitudes towards the use of technology in the classroom were more likely to effectively incorporate CALL into their teaching practices, an aspect that triggered students' performance. Overall, the findings show that teachers' positive attitude towards CALL, the perceived usefulness of CALL resources, and the provision of adequate training on the new methodology of teaching English using ICT were critical factors that certainly increased the performance of students when learning the English language in their classes.

Based on the research findings, it is evident that teachers from technical secondary schools in the area of research have a positive attitude towards CALL integration. Nevertheless, the training opportunities for English teachers in CALL integration are quite limited. Consequently, to address this issue effectively, it is essential to invest more efforts in improving these facilities and expanding training opportunities for teachers. This proactive approach would contribute significantly to resolving the existing challenges in English language learning.

5.3 Recommendations

Based on the results collected in the field and the analyses made accordingly, some recommendations have been made. In fact, despite an increased use of computers in teaching, fundamental changes still have to occur within educational perspectives, mainly with a focus on language teaching. Computer-assisted language learning training should be regularly provided to new and existing English teachers to update them on new technologies in English teaching.

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