# Integrating Computer-Assisted Language Learning in Saudi Schools: A change model

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## ABSTRACT
Computer-assisted language learning (CALL) technology and pedagogy have gained recognition globally for their success in supporting second language acquisition (SLA). In Saudi Arabia, the government aims to provide most educational institutions with computers and networking for integrating CALL into classrooms. However, the recognition of CALL's efficacy does not translate into easy acceptance and integration in English as a Second Language or English as a Foreign Language (ESL/EFL) classrooms in Saudi schools, particularly where teaching of both English language and information and communication technologies (ICT) is subject to religious and cultural constraints. There are other barriers that impede native Arabic speakers from learning English. Accordingly, the research question addressed in this paper is an exploration of the overt and covert factors that affect CALL use and integration in Saudi Arabian secondary schools. A case study approach using mixed methods was employed to interview and observe a sample of teachers and school inspectors in urban and rural secondary schools. Results were supplemented with an online questionnaire and analysed using both descriptive statistics and thematic analysis.

The findings lead to recommending a model to address the covert and overt issues identified, and provide systematic support for integrating CALL into Saudi Arabian English language classrooms.
**Keywords**: CALL, English language teaching, Saudi Arabia, second language acquisition

## INTRODUCTION
The Saudi Ministry of Higher Education (2011) in Saudi Arabia is aware of the need for its citizens to be at an educational and linguistic par with peers in leading nations in order to actively participate in international dialogue, employment, and trade. The government has announced various initiatives to address the problems of uneven education and prepare its citizenry for employment opportunities in international corporations (Oxford Business Group, 2010). However, the most pressing issue is to improve the ability of Saudi students to communicate in other languages. No exchange of dialogue, trade or employment can be successful unless Saudis can communicate with others around the world and, to do so, they need a high degree of proficiency in English.
Khan (2011) and Oyaid (2009) argue that Information Communication Technology (ICT) is an essential element of education, especially in the field of language learning and teaching. Computer-assisted language learning (CALL) technology and pedagogy have gained recognition internationally for their success in supporting second language acquisition (SLA) (Lambropoulos, Christopoulou, & Vlachos, 2006). According to Mahdi (2013), the Saudi government is committed to providing most educational institutions with computers and networking for CALL.

There has been considerable research into barriers to the use of technology and current technology acceptance models (Anderson, Groulx, & Maninger, 2012). Several models such as the technological pedagogical content knowledge (TPACK) model and the technology acceptance model (TAM) have been created to improve and understand the use of technology (Alsofyani, bin Aris, Eynon, & Abdul Majid, 2012). The research leading to the development of the TPACK and TAM models provides a foundation for analysing technology acceptance in English language classrooms.

Integrating CALL into schools requires planning and effort, particularly given the cultural and attitudinal barriers to its adoption (Al-Kahtani, & Al-Haider, 2010)(Al-Kahtani & Al-Haider, 2010). This research investigated the barriers to incorporating CALL in EFL classrooms and the expectations surrounding the use of such technologies. The aim was to create a model for integrating CALL more comprehensively based on identifying the needs of the Saudi educational context. Exploring the main factors affecting CALL use was the initial step to

understanding the extent of CALL's integration, and thus a basis for developing a model for supporting the Ministry of Education's implementation of this pedagogy.

## LITERATURE REVIEW

### Integrating computer-assisted language learning (CALL)

The continuous and rapid developments in ICT and education, along with changes in the pedagogy of SLA, have led to many changes in CALL, its implementation and integration. Several typologies of CALL development have been undertaken (Bax, 2003; Warschauer, 1996; Warschauer & Meskill, 2000) with the latest version by Bax (2003) identifying the eventual objective of CALL as 'normalisation'.

Discussing the future of CALL, Bax (2002; 2003) suggests the concept of 'normalisation' as a central aim for CALL practitioners to strive for. He notes that the state of normalisation will have been achieved when computers are an integral part of every lesson and other aspects of classroom life,

> *like a pen or a book without fear or inhibition, and equally without an exaggerated respect for what they can do. (p.23)*

He goes on to say that he believes that the new agenda for the future should involve planning for normalisation and then moving towards it by taking the following steps:
a) Identifying the criterial factors which normalisation requires;
b) Auditing the practice of each teaching context in the light of these criteria;
c) Adjusting our current practice in each aspect to encourage normalisation.

To achieve normalisation in any educational context, numerous factors need to be considered. These differ from context to context, of course, but might include improvements in the size, design, and location of the technology, as well as reorganisation of other physical aspects of the educational setting, timetabling and so on.

Lankshear and Knobel (2007) note that young learners in the developed nations have a new attitude to life that is fundamentally different from conventional attitudes, and is enhanced by a sense of reality that extends to virtual space. Blogging, online chatting, online gaming, iPods, smartphones and instant messaging are all normal activities. According to Warschauer and Meskill (2000), these digital tools promote the socio-cognitive pedagogy for CALL by emphasising the value of communicative and interactive instruction in authentic contexts.

Numerous studies have shown that the mere availability of technology does not guarantee its effective use and integration in education. Yet the material availability of the technology and access to it are prerequisites for its incorporation into classroom activities.

Teachers' attitudes towards technology and their skills in using it are also crucial in determining instructional choices for normalising CALL (Kreijns, Van Acker, Vermeulen, & Van Buuren, 2013; Elsaadani, 2013). According to Sardegna (2015) The top three factors affecting participants' computer use were limited facilities, time, and computer knowledge.

Zaid (2011) and Oyaid (2009) stated that provision of resources, motivation and training issues are among the key challenges still faced by introducing CALL in Saudi Arabia. Covert barriers to use include negative attitudes toward the internet and CALL.

Moreover, Al-Amr (1998), and Saqlain, Al-Qarni, and Ghadi (2013) mentioned that the easy availability of images of women, and discussion of taboo subjects (such as dating and sexuality) have led some Saudis to believe that the internet promotes anti-religious and anti-cultural morality.

Pelgrum (2001) and Al-Kahtani (2007) have classified barriers to CALL as material/overt and non-material/covert. These barriers are somewhat different in the international and Saudi contexts, as illustrated in Table 1.

**Table 1: Barriers to CALL**

| Barrier | International Context | Saudi Context (Al-Kahtani, 2007) |
|---|---|---|
| Material / Overt | 1.insufficient number of computers or copies of software | 1. accessibility, i.e., difficulties in accessing the internet, computers, technical support.<br>2. training – this is a major issue as both teachers and students require specific skills. |
| Non-material / Covert | 1.teachers' insufficient ICT knowledge and skills,<br>2. the difficulty of integrating ICT in instruction,<br>3. insufficient teacher time | 1. negative attitudes of teachers toward the internet and CALL. |

**The restricted Saudi educational setting.**

Educational policies in Saudi Arabia are under direct government regulation (Oyaid, 2009). National curriculum, syllabi and textbooks are identical across the country. The management of education is controlled through two main organisations, namely, the Saudi Ministry of Education (MOE) and the Ministry of Higher Education (SMHE). The MOE is responsible for the country's educational policy. Education is mandatory for all children from six to fifteen years and most study in government schools (Oyaid, 2009). The MOE introduced a ten-year plan in 2004 to reorganise its schooling system, introducing state projects for ICT in schools, along with teacher training and improvement to achieve the essential skills (Saudi Ministry of Education (MOE), 2004).

The new curricula aim is to assimilate ICT in education and cultivate students' skills and encourage creativity and analytical thinking to fulfil the needs of all students" (Tatweer, 2008). Integrating ICT and education is the new official mantra in developing a modern educational system that will enable Saudi Arabia to be on an educational par with other technologically advanced nations. Oyaid (2009) argues that the uncertainty and ambiguity of high-level ICT policies hampers CALL integration.

**CALL in Saudi Arabia and the Arab world.**

ICT was introduced in the Saudi education system in the 1990s, and has expanded in the last 20 years. Initially, it was used merely as an administrative tool but by the mid-1990s, computer studies were introduced as part of the secondary school curriculum (Alshumaim, & Alhassan, 2010).

Studies in Saudi Arabia and the Arab world more generally have found that there was a marked improvement in writing skills when the learners used computers versus traditional methods (Alsouki, 2001). Al-Qomoul (2005) found that using an instructional software programme for English language learning greatly enhanced students' performance in comparison to traditional methods. Likewise, Al-Abdel (2009) substantiated the efficacy of CALL in improving Jordanian secondary learners' reading comprehension abilities. Bataineh and Bani Hani (2011) piloted a study examining the probable effect of a CALL programme on Jordanian sixth-grade learners' success in English. The results showed that language acquisition is greatly affected by the means of instruction, as there is noticeable variation between the successes of traditional and CALL instruction, in favour of CALL.

## METHODOLOGY

A pilot study with a small sample size (24) of Saudi teachers and MOE inspectors in region Q was undertaken to explore the extent to which CALL has been adopted, and to identify barriers to its integration into secondary school language classes.

Quantitative and qualitative data were collected through an online questionnaire and semi-structured interviews with 22 English teachers and 2 MOE school inspectors. Interview findings were triangulated with the questionnaire results and classroom observations in both rural and urban secondary schools. Semi-structured interviews included questions around themes such as comfort in using new technology, availability and access to CALL, the effects of the internet, and personal attitudes toward CALL use.

Survey data were collected electronically through the "SurveyMonkey" platform and transferred to SPSS version 21 where descriptive statistical analyses were performed. Free text questions were analysed using thematic analysis (recognition of patterns and recurrent themes), a framework outlined by Braun and Clarke (2006). The findings were then tested against existing models for CALL integration and technology acceptance and collated to form an emerging model for CALL integration in Saudi Arabia.

## FINDINGS

### Demographic Data

The majority of EFL teachers were male and ranged from 25–40 years. At least 70% of the respondents were older than 30. Most teachers had at least six years of teaching experience and just over 76% were employed in city schools; 82% held a Bachelor's degree. Despite some respondents holding a Master's degree, there was no significant correlation between education and age.

### Computer access in schools

Over 80% of respondents reported having no internet access in their classroom, while slightly under half (45.5%) reported that students had access to a computer laboratory. Just over a third reported that students had access to Wi-Fi technology at the school and just under a third had a data projector in their classroom. The range and extent of technology available is indicated in Figure 1.

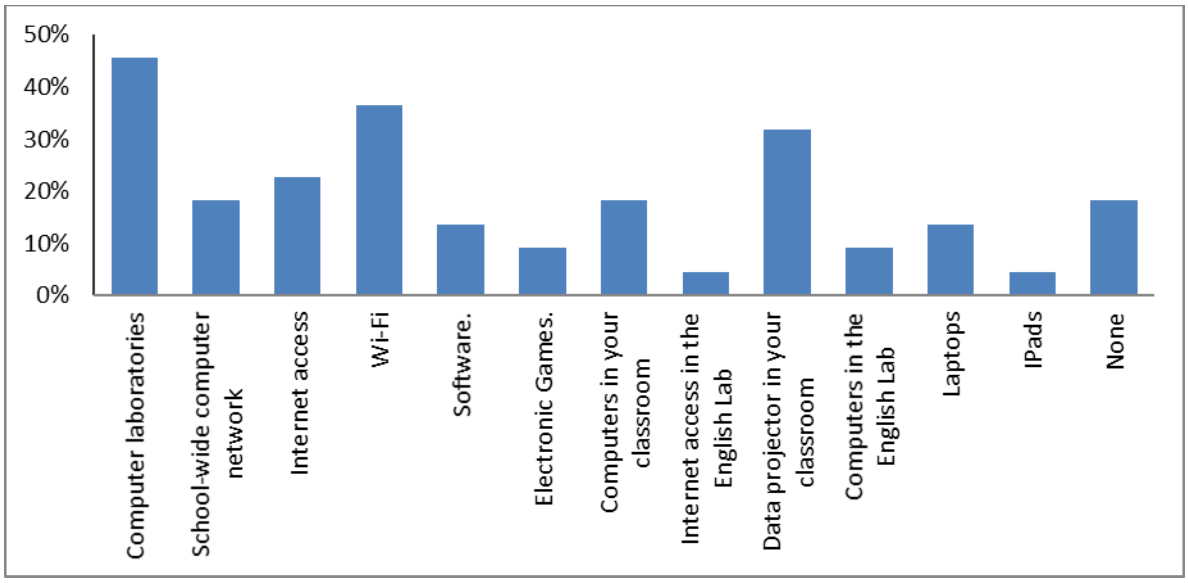


**Figure 1: Information on ICT equipment available at the schools**

Over 70% of respondents reported that they used the computer to prepare material in their classroom. Close to a third (31.8%) reported using the internet to communicate with their students. The availability of computer facilities for students after class time was low with less than 30% of respondents reporting accessibility. In addition, just over 20% of respondents expected students to use any available computer facilities. Finally, a number of other factors were reported as limiting the use of CALL including lack of computers, lack of training and lack of technical support. Cross-tabulation of data revealed that city schools had greater access to ICT than rural schools, a trend which was true for all ICT amenities. Location of the school greatly influenced ICT access.

### ICT training

Slightly over 36.4% of respondents had undertaken any form of ICT training. Of this group, slightly over a quarter completed training prior to their service as an English teacher (27.8%), another quarter had completed in-service training (27.8%), and the remaining proportion had had both pre-service and in-service training (44.4%). Notably, close to half of respondents (45.5%), who had undertaken ICT training, did so at a private training centre but less than half (45%) had completed any training within the last three years. Of those without any ICT training (63.6%), nearly three quarters cited 'lack of MOE encouragement' for not doing so. Cross-tabulation of data showed that most of the trained teachers were under 30 years old. Again, location had an impact on training, with more city teachers having training than their rural colleagues.

### Computer skills

Teachers' computer skills were very disappointing, with half to two thirds being unfamiliar with basic ICT skills. Making educational CDs, using emails for communication, distributions, chatting, and so on were all activities out of reach for most EFL teachers, and especially those in the rural schools.

### Ministry support

Respondents were asked to rate the amount of support provided by their school / the Ministry to help them use CALL in their teaching. Table 2 provides a summary of the results.

**Table 2: English teachers' self-reported ratings on MOE support**

| Statement | Not at all (%) | Slight (%) | Moderate (%) | High (%) | Total (n) |
|---|---|---|---|---|---|
| Technical support | 50.0 | 27.8 | 16.7 | 5.6 | 18 |
| Financial support 1: grant projects | 66.7 | 16.7 | 5.6 | 11.1 | 18 |
| Training support | 56.3 | 31.3 | 12.4 | 0.0 | 16 |
| Leadership | 44.4 | 38.9 | 11.1 | 5.6 | 18 |
| Financial support: support, awards for and award to innovative teachers | 66.7 | 16.7 | 5.6 | 11.1 | 18 |
| Planning | 58.8 | 11.8 | 11.8 | 17.6 | 17 |

**Teacher's' attitudes**

Teachers' attitudes toward CALL were ambivalent, with most recognising the efficacy of it as a training tool but still fearing its impact on Saudi culture and their future as EFL teachers. Location did have some impact on the attitudes of teachers; rural teachers were more worried about cultural damage and being replaced by computers.

**Table 2: English teachers' attitudes about using ICT in teaching and learning the English language**

| Statement | Strongly Agree (%) | Agree (%) | Not sure (%) | Disagree (%) | Strongly disagree (%) | Total (n) |
|---|---|---|---|---|---|---|
| CALL is not better than any other traditional teaching. | 23.5 | 0 | 41.2 | 11.8 | 23.5 | 17 |
| CALL could help enhance the quality of language teaching and learning. | 41.2 | 23.5 | 17.6 | 5.9 | 11.8 | 17 |
| CALL will enable language teachers to address their students' individual needs in a better way. | 23.5 | 23.5 | 23.5 | 17.6 | 11.8 | 17 |
| Computers and IT-related technologies will replace language teachers in the future. | 31.3 | 31.3 | 18.8 | 18.8 | 0 | 16 |
| Computers will allow students to access possible culturally incorrect contents on the internet. | 29.4 | 47.1 | 5.9 | 5.9 | 11.8 | 17 |

**Qualitative Findings**

**Classroom observation**

Two EFL classrooms were observed to gain an insight into the actual classroom practices adopted by teachers. Both classes were observed four times over a four-week period; both were in city schools and had 22 to 25 students. Only one class (at school A) had a data projector and computer for the teacher's use only in the classrooms, while the only computers in school B were in the computer lab, and were only used by the computer science teachers. Both teachers used only PowerPoint slides for EFL teaching; one already had a data projector and the other used his personal laptop and projector. The class in school A used PowerPoint frequently, two to three times a week – whereas the teacher in school B used PowerPoint only two to three times in a term. The teachers primarily used grammar translation methods for teaching. There was no use of technology by students inside the classrooms in either school. Moreover, there was no motivation by the schools' principals to encourage teachers to use the technology.

**Teacher interviews**

Analysis of the two English teacher interviews revealed some preliminary themes. Teachers claimed that when they used slides or short movies, the students were more interested and learned more easily. However, these were the only ICT activities used in class. There was no other CALL use in teaching. They mentioned that there were no suitable CALL English programs/software for students.

Both teachers noted that most of their students had smartphones or tablets yet neither used ICT to contact their students outside school, nor did they assign any CALL exercises for lack of suitable programs.

**Interviews with inspectors**

Two inspectors from the MOE were interviewed about their opinions on CALL integration in secondary schools. Both inspectors were dissatisfied with the state of CALL. Both agreed that the main fault lay with the MOE itself for being unable to provide the necessary hardware and training.

Although the inspectors agreed that CALL was an extremely efficient teaching tool, they accepted that the MOE did not specifically provide ICT to EFL classrooms and were more interested in the integration of ICT within education more broadly. The inspectors asserted that most teachers preferred traditional teaching methods and, although a few teachers did recognize the importance of CALL, they were hampered by lack of hardware and software.

Requirements cited for CALL integration by the inspectors included a clear plan to integrate CALL, computers and new ICT equipment, teacher training, technical support and a new measurement form to encourage teachers to use CALL. These elements comprise part of the emerging model for CALL integration in Saudi Arabia proposed below.

It is clear that the MOE has not yet established any parameters for CALL in English departments. And because basic performance measurements neglect CALL, there is no motivation for teachers to integrate it. This leaves supervisors with no tools to enforce CALL adoption in classrooms.

**DISCUSSION**

Findings from the pilot study have established many factors that are hampering the integration of CALL in Saudi secondary schools. Some factors are covert, such as the negative attitudes held by some teachers and lack of motivation at the MOE. Despite some fears regarding wrongful usage, many teachers use personal laptops to access multimedia. As most teachers noted that almost all students had smartphones or tablets, a lack of technological engagement in general cannot be the reason for the lack of engagement with CALL. There is also a definite lack of high-level incentives for the MOE and, to some degree, the school administration to integrate CALL more effectively.

Further covert issues elucidated by Al-Rojaie (2011) include lack of pedagogical knowledge and sufficient training in both teaching English and ICT. Furthermore, we find that CALL in EFL classrooms is not encouraged by the MOE insofar as teachers have to follow a strict format that does not include CALL but focuses on passing examinations. As one teacher noted, there are no digital or e-books to follow and there is no school website where students can log on and learn/communicate. These two constraints, in addition to the overt factors, have led to the negligible adoption of CALL.

This study also found that the overt factors, e.g., lack of computers and software detailed by Al-Kahtani (2007) and Pelgrum (2001), are among the reasons for failure to integrate CALL. Despite teachers and students having personal access to ICT – smartphones, tablets and laptops, they are unable to integrate CALL because of both overt and covert constraints. Far from providing ICT to all schools, the MOE is unable to maintain computers in the schools that do have such facilities. Furthermore, there is no effort being made to provide suitable software to teachers or enable them to search for or create their own programmes through training and removal of contextual constraints. These constraints are not linked to lack of funding or interest at the top level; it was established earlier that the SMHE (2011) is making a concentrated effort to improve EFL in Saudi Arabia. As such, the study has found the need to further investigate the discrepancy between the proposed ideals of encouraging EFL/CALL and its implementation. It is propose that a model for CALL implementation should be developed which will ease CALL integration at the ministerial, administrative and school levels, bringing it eventually to the students' home as well as classroom. The study also found that three elements should be consider before introducing CALL to Saudi schools, namely religious issues, cultural issues and political issues.

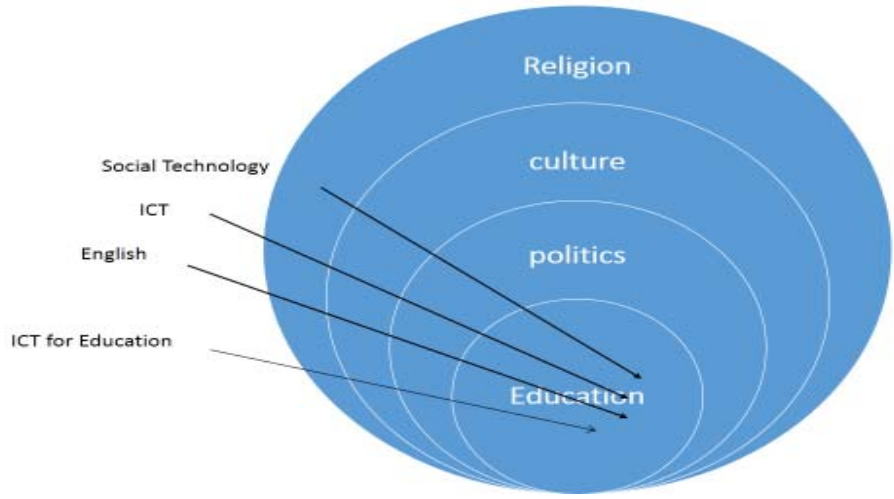


**Figure 2: The three main elements that should be addressed before introducing any new technologies in Saudi Schools**

## CONCLUSION

Findings from the pilot study have indicated that the following emergent model may be useful in addressing the covert and overt issues identified (Figure 3). This model will be further tested, developed and refined during a subsequent study to ascertain its value in removing the barriers to CALL and providing support for integrating CALL.

This model includes the barriers discussed above that affect CALL adoption. These will be explored further with the aim of identifying possible solutions to mitigate them and making the model suitable for integrating CALL in the Saudi context.

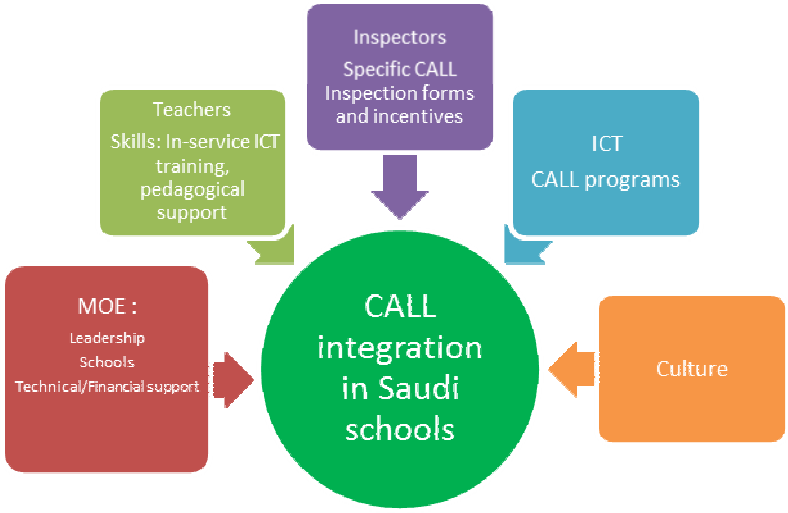


**Figure 3: Integrating CALL in Saudi schools: An emergent model**

Implementation of the proposed model will require several steps. The first is to provide specific plans and identify the organisational processes necessary to providing computers and software to schools. Second, Saudi Arabian educational policy makers need to be made aware of the importance of co-ordinating training efforts to make them more accessible to teachers and allay their fears of being replaced by CALL. Third, teachers' pedagogical role in CALL environments needs to be re-focused away from being 'dispensers of knowledge' to being knowledge facilitators. Not only computer education but also pedagogical training is necessary to instil confidence in EFL teachers and motivate them toward incorporating CALL into their pedagogy. Culture is also one of the factors that should be addressed before integrating CALL.

**REFERENCES**


Al-Kahtani, S. (2007). CALL integration: A proposal for in-service CALL training program for EFL faculty at Saudi Arabian universities. *College of Language & Translation Research Center, 42*, 1–16.

Al-Kahtani, S. & Al-Haider, S. (2010). Factors affecting the use of CALL by EFL female faculty members in Saudi higher education: Current status. *Jalt Call Journal, 6*(3), 153–170.

Al-Amr, B. (1998). Attitudes, motivation, and socio-cultural effects on English foreign language learning and proficiency: the Saudi Arabian context [MA thesis].University of Essex, UK.

Al-Qomoul, M. (2005). *The effect of using an instructional software program of English language functions on the basic stage students' achievements.* Unpublished Ph.D. thesis. Amman Arab University for Graduate Studies, Amman, Jordan.

Al-Rojaie, Y. I. (2011). Saudi EFL reading teachers' pedagogical beliefs and practices: A qualitative case study. *Journal of Arabic and Human Sciences, 5*(1), 1–19.

Alsofyani, M. M., bin Aris, B., Eynon, R., & Abdul Majid, N. (2012). A preliminary evaluation of short blended online training workshop for TPACK development using Technology Acceptance Model. *Turkish Online Journal of Educational Technology, 11*(3), 4-11.

Alshumaim, Y., & Alhassan, R. (2010, May). Current availability and use of ICT among secondary EFL teachers in Saudi Arabia: Possibilities and reality. In *Global Learn* 2010(1), 523-532).

Alsouki, S. (2001). *The effect of using computers in the teaching of L2 composition on the writing performance of tenth grade students in Amman private schools.* Unpublished MA dissertation. University of Jordan, Amman, Jordan.

Anderson, S., Groulx, J., & Maninger, R. (2012, March). Modeling the Relationship Between Preservice Teachers' Beliefs and Intentions Regarding Technology Integration. In *Society for Information Technology & Teacher Education International Conference* 2012(1), 1634–1639.

Bataineh, R., & Bani Hani, N. (2011). The effect of a CALL program on Jordanian sixth-grade students' achievement. *Teaching English with Technology, 11*(3), 3–24.

Bax, S. (2003). CALL - past, present and future. *System, 31*, 13–28.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 77–101.

Elsaadani, M. (2013). Exploring the relationship between teaching staff age and their attitude towards information and communications technologies (ICT). Online Submission

Khan, I. A. (2011). Learning difficulties in English: Diagnosis and pedagogy in Saudi Arabia. *Educational Research, 2*(7), 1248–1257.

Kreijns, K., Van Acker, F., Vermeulen, M., & Van Buuren, H. (2013). What stimulates teachers to integrate ICT in their pedagogical practices? The use of digital learning materials in education. *Computers in human behavior, 29*(1), 217-225.

Lambropoulos, N, Christopoulou, M, & Vlachos, K. (2006). Culture-based language learning objects: A CALL approach for a ubiquitous world. In P. Zaphiris, & G. Zacharia (eds). *User-Centered Computer Aided Language Learning* (pp. 22-40). Idea Group Inc.

Lankshear, C., & Knobel, M. (2007). Sampling "the new" in new literacies. In M. Knobel, & C. Lankshear(eds), *A new literacies sampler* (pp. 1–24). New York: Peter Lang.

Mahdi, H. S. (2013). Issues of computer assisted language learning normalization in EFL contexts. *International Journal of Linguistics, 5*(1), 191–203.

Oxford Business Group. (2010). *Saudi Arabian Educational Overview: Vital Roles, Productive Planning, Learning Lessons, New Development. THE REPORT.* Saudi Arabia: Oxford Business Group. 254–68.

Oyaid, A. A. (2009). *Education policy in Saudi Arabia and its relation to secondary school teachers' ICT use, perceptions, and views of the future of ICT in education.* Unpublished PhD. University of Exeter, UK.

Pelgrum, W. J. (2001). Obstacles to the integration of ICT in education: Results from a worldwide educational assessment. *Computers and Education, 37*, 163–178.

Saudi Ministry of Education (MOE). (2004). *Executive summary of the ministry of education: Ten year plan.* Riyadh: Ministry of Education.

Saudi Ministry of Higher Education (SMHE). (2011, June). *Ministry of Higher Education Portal: King Abdullah Scholarships*. Retrieved from

Saqlain, N., Al-Qarni, F., & Ghadi, N. (2013). Are English language teachers in Saudi Arabia ready to integrate technology?. *Procedia - Social and Behavioral Sciences*, 103(13th International Educational Technology Conference), 146–153. doi:10.1016/j.sbspro.2013.10.319

Sardegna, V. G., & Yu, L. T.(2014) Taiwanese Elementary School Teachers' Computer Literacy and Use: Implications for Language Teaching Training Programs. CALL-EJ Online.16-1

Tatweer. (2008)., King Abdullah Project for General Education Development. Retrieved from http://www.tatweer.edu.sa/Pages/home.aspx

Warschauer, M. (1996). Computer-assisted leanguage learning: An historical analysis. In S. Fotos (ed.), *Multimedia language teaching* (pp. 3–20). Tokyo: Logos International.

Warschauer, M., & Meskill, C. (2000). Technology and second language learning. In J. Rosenthal (ed.), *Handbook of undergraduate second language education* (pp. 303–318). Mahwah, New Jersey: Lawrence Erlbaum.

Zaid, M. (2011). Effectiveness of organized e-mail exchanges and online reading/writing on college students' literacy development and their attitudes towards English: A study from Saudi Arabia. *Asian EFL Journal*, 7, 10–47.