2 Exploring the influence of teachers' education and professional development in Cypriot higher education CALL practices

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Abstract

The present study examines Computer Assisted Language Learning (CALL) practices in the Cypriot Higher Education (HE) system and their relation to teachers' education in CALL and professional development. It involves 28 second language instructors from public and private universities in the Republic of Cyprus. A survey was designed to assess CALL training, CALL training for technology integration, and CALL practices. The analysis of the data reveals a considerable variety in instructors' training, which ranged from in-service training, seminars, conferences, and lectures on CALL or CALL training as part of Master of Arts (MA) or Philosophical Doctorate (PhD) programmes. Despite this variety, the perception of instructors towards the training received for technology integration was generally positive, particularly in terms of its usefulness for the evaluation, selection, and use of computer-based instructional material. However, we found significant differences in their perception towards effectiveness of training, leading to the creation of computer-based instructional materials. Similarly, differences were found in the frequency of usage of mobile devices, website creators, wikis, and photo-graphic programmes.

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1.   Introduction

There are many factors that can influence teachers' use of computer technology in the classroom (Lin, Huang, & Chen, 2014); teachers' CALL training is a crucial one (Son & Windeatt, 2017). The question of whether L2 teachers' technology training contributes to the integration of computer technology into the classroom has been widely addressed in several studies. For instance, Hong (2010) points out that there is still an insufficient number of quality courses and workshops that integrate technology education into L2 teacher education programmes. Nonetheless, Hong (2010) asserts that many efforts have been made in order to develop and integrate CALL teacher education into L2 teacher education programmes. These efforts include technology workshops, lectures on CALL, online courses, face-to-face courses specifically designed for a CALL certificate, and CALL MAs (Hubbard & Levy, 2006; Reinders, 2009). However, other studies have shown that effective technology integration is not happening, despite training teachers on the use of technology (Ertmer & Ottenbreit-Leftwich, 2010). As Guichon (2009) suggests, this could be explained by the fact that the technologies discovered during CALL education programmes might swiftly become obsolescent after teachers obtain certification.

In addition to recognising the presence of obsolescent technology in CALL education programmes, Kessler (2006) highlights that much of what teachers know about technology for language teaching results from informal or *ad hoc* experience through conference workshops, in-service training, personal reading, and other forms of self-edification. Moreover, in his study, he found that teachers perceive that formal instruction does not serve pedagogical needs, specifically when they need to create their own CALL-based materials. The author emphasises that this is due to the lack of satisfaction with the CALL

preparation they received. He also suggests that "formal language teacher preparation programmes have largely neglected to equip their graduates with the related knowledge and skills they need to enter today's technologically advanced language classroom" (Kessler, 2006, p. 23). However, Debski (2006) has demonstrated that an MA in CALL can offer learning opportunities that are adequate in serving the needs of future teachers, not just from a practical perspective but from theoretical frameworks that enable a meaningful integration of technology into teaching and learning.

In the Republic of Cyprus, research on teachers' use of technology and CALL teacher education has been carried out in different educational settings. Vrasidas (2015) conducted a large scale survey in Cypriot public elementary schools, where he found that, despite the rhetoric of reform that dominates education discourse, the adoption of technology was not occurring as expected. The study showed that, although teachers were aware of the benefits of technology integration, the majority were not applying it; this was due to many factors, including inadequate training seminars provided to teachers. Similar results were found in the investigation that Papayianni (2012) undertook in order to determine English language teachers' CALL use in secondary education in Cyprus. According to the findings, in-service teacher training programmes failed to provide teachers with the required technical and pedagogical knowledge and skills to make successful use of technology; that is why, she argues, training is a major factor that influences teachers' decisions in terms of CALL implementation (Papayianni, 2012, p. 126).

In the context of Cypriot HE, previous studies have described the perceptions of second language (L2) instructors towards technology integration in language teaching (Athanasiou & Nicolaou, 2014) as well as the profile of the language centres established in the Republic of Cyprus, and the training provided by these centres to their staff (Papadima-Sophocleous & Parmaxi, 2016). The purpose of the present study is, therefore, to contribute to the description of the current situation of the Cypriot HE system, by examining HE L2 instructors' CALL education and its relation to CALL practices.

2.   Method

As a means of better understanding the complexity of HE L2 instructors' integration of technology into the classroom and its relation with CALL education and professional development, the aim of this study was threefold: (1) to determine what kind of CALL education HE L2 instructors in the Republic of Cyprus have received; (2) to examine HE L2 instructors' perceptions towards the CALL training received; and (3) to identify to what extent HE L2 instructors' CALL education and professional development affect their CALL practices.

2.1.   Participants

The population of this study consisted of HE L2 instructors from the seven (two public and five private) universities in the Republic of Cyprus. A web-survey was sent out to the 97 instructors employed in these universities. The online survey response rate was 28.8%. It slightly exceeded the return rate of previous research obtained in similar studies that were carried out in different educational contexts (Georgina & Hosford, 2009; Yu, Sun, & Chang, 2010). The majority of language instructors in our sample taught English (50%), followed by Greek (14.3%), Spanish (10.7%), French (7.1%), Italian (7.1%), Turkish (7.1%), and Russian (3.6%). Regarding the instructors' educational qualification, 78.5% were holders of an MA and 21.5% were holders of a PhD. The gender distribution of the instructors was 25% male and 75% female, and their average age was 39.89 (SD 9.5) In terms of their years of teaching experience, their average was 16.14 years (SD 8.02) and their average years of experience as CALL practitioners was 6.82 (SD 2.51).

2.2.   Instrumentation and data analysis procedure

The data collection instrument was an online survey. A first version of the survey was piloted in order to context-test the instrument and to obtain some data to be used for item analysis. The final version consisted of four sections. We designed the first section where we included questions targeting the respondent's personal background characteristics. The second section was used to obtain information

related to instructors' education, type of CALL training received, and instructors' perceptions towards CALL training usefulness for technology integration. This section included dichotomous questions, multiple choice questions, and a rating scale. The 13 items of this rating scale were adapted from Kessler (2007). The participants were asked to rate their perceptions towards their CALL training based on a five-point Likert scale (1=*completely disagree*, 2=*disagree*, 3=*neutral*, 4=*agree*, 5=*completely agree*). The third section was designed to measure the instructors' frequency of technology use in classroom practices. The 21 items in this section were adapted from Papanastasiou and Angeli (2008). These items were included on a five-point Likert scale (1=*never*, 2=*once per term*, 3=*once per month*, 4=*once per week*, 5=*always*). The last section of four items measured instructors' perceptions towards the technical infrastructure at their working place. A five-point Likert scale ranging from *completely disagree* to *completely agree* was used.

As far as the internal consistency reliability of the instrument is concerned, the sections of the survey that were pertinent to Cronbach's alpha revealed an acceptable value of .899 (Dörnyei, 2010). After the survey had been administered, all responses were recorded and scored for statistical analysis, including descriptive statistics and the Mann-Whitney U test. The Mann-Whitney U test, a nonparametric equivalent of the independent sample *T*-test, was performed to identify if any differences in participants' responses were significantly different (Larson-Hall, 2010). The Mann-Whitney U test was used due to the small sample size and a concern for the data not being normally distributed.

3. Results and discussion

We first explored the type of CALL training and education instructors received. All the participants of the survey affirmed that they had been trained in the use of CALL. The survey revealed a considerable variety in the instructors' CALL training background. We classified these into two groups: the first group (G1), consisting of 13 instructors (46.4%), received CALL training as part of their MA or PhD as well as from in-service training, seminars, conferences, and lectures

on CALL; the second group (G2) of 15 instructors (53.6%) only received CALL instruction as part of in-service training, seminars, conferences, and lectures on CALL.

We then examined instructors' perceptions towards their CALL training. Despite the varied CALL training backgrounds, the overall picture in terms of the perceived usefulness towards CALL training was very positive. The average mean score on the five-point Likert scale for all 13 items was 4.24 (*SD*=0.53) for G1 and 4.08 (*SD*=0.45) for G2. This showed that the participants of the two groups agreed that their CALL training helped them reflect, evaluate, select, use, and create computer-based instructional material. The Mann-Whitney U test showed that there was no significant difference (*U*=77.00, *p*=.699) between the two groups. When further investigated, individual items also showed no significant differences between G1 and G2 except for *Create computer-based instructional materials,* where the two groups significantly differed. Table 1 presents the results of instructors' perceptions towards received CALL training.

Table 1. Descriptive statistics and Mann-Whitney U test results of instructors' perceptions towards received CALL training

	Group 1 (N=13)		Group 2 (N=15)		Mann-Whitney U test	
	M	SD	M	SD	U-value	p-value
Reflect on your teaching practices with technologies.	4.31	0.63	4.21	0.80	88.5	.891
Evaluate computer-based instructional material.	4.15	0.80	3.79	0.89	70.5	.292
Make decisions regarding the selection of software for instruction.	4.15	0.80	3.93	0.73	76.0	.435
Make effective decisions regarding the use of technology for instruction.	4.38	0.65	3.93	0.62	57.5	.069
Use new technologies for language instruction.	4.62	0.65	4.29	0.61	63.0	.127
Use computer-based material for teaching the four language skills.	4.31	0.85	3.77	1.17	61.5	.210

Use course management systems (e.g. Blackboard, Moodle, etc.)	4.00	1.00	4.43	0.51	71.0	.291
Use new technologies to interact with your students.	4.38	0.65	4.43	0.51	90.0	.956
Use new technologies with your students to create collaborative learning projects.	4.08	0.86	3.93	1.00	85.0	.750
Create computer-based instructional materials.	4.46	0.66	4.00	0.55	55.0	.050*
Design technology-enhanced learning activities for your students.	4.38	0.51	4.07	0.73	70.0	.252
Facilitate learning rather than teaching directly.	4.31	0.63	4.21	0.70	85.0	.746
Teach your students to select appropriate software to improve their language skills.	3.69	1.11	3.64	1.28	90.5	.979

Note: * difference between means is at $p \leq .05$.

The data obtained indicate that the highest mean was reported in *Use new technologies for language instruction* followed by *Create computer-based instructional materials* for G1; for G2 this is represented by *Use course management systems* and *Use new technologies to interact with your students*. Interestingly, these are the only two items where G2's mean score is higher than G1's. By contrast, in the rest of the questions, G1 instructors present a higher mean in their perceptions towards the usefulness of the training received. In the opposite direction, *Teach your students to select appropriate software to improve their language skills* was the item with the lowest mean for both groups (slightly above 3.5). This shows that participants did not perceive that their training prepared them to foster autonomous learning with the use of technologies.

Additional analyses were performed to identify to what extent teachers' CALL education and professional development affect CALL practices; in particular, we were interested in examining hardware and specific software usage per semester. The overall mean of scores as a combined measure was

3.31 (*SD*=0.62) for G1 and 2.90 (*SD*=0.84) for G2 on the five-point Likert scale that ranged from *never* to *always*. This indicates that participants of the first group generally used technology in their classes slightly above the midpoint in the scale ('once per month') and the second group slightly below that point. In addition, a Mann-Whitney U test was conducted to determine whether there were differences between groups in hardware and software usage. Results of that analysis indicated that there was no significant difference between G1 and G2 (*U*=57.00, *p*=.062). However, when we further analysed individual items in order to identify areas where the two groups could differ, we found significant differences in the use of *mobile devices, website creators, wikis, photo-graphic software*, and *dictionaries*: G1 showed higher familiarity with using these items for language learning/teaching purposes than G2. Provided in Table 2 are the summary of means, standard deviations, and the results for the Mann-Whitney U test for the 21 items that measured the frequency of using hardware and software in the class.

Table 2.   Descriptive statistics and Mann-Whitney U test results of instructors' usage of technology in their classes per semester

	Group 1 (N = 13)		Group 2 (N = 15)		Mann-Whitney U test	
	M	SD	M	SD	U-value	p-value
Computer	5.00	0.00	4.73	0.80	84.5	.180
Mobile devices	3.46	1.39	2.13	1.36	49.0	.021*
Projector	4.92	0.28	4.93	0.26	96.5	.918
Interactive whiteboard	2.54	1.61	1.87	1.64	75.0	.237
Word processor	4.69	0.63	4.27	1.16	79.0	.302
Presentation	4.23	0.73	4.40	0.91	79.5	.363
Internet browsers	4.92	0.28	4.40	1.06	71.5	.094
Cloud storage services	3.92	1.44	3.47	1.77	88.5	.659
Website creators	3.31	1.44	2.20	1.26	53.5	.036*
Blogs	2.85	1.46	1.93	1.22	58.0	.059
Wikis	2.77	1.54	1.67	1.05	52.5	.029*
E-learning platforms	4.31	1.03	4.00	1.31	84.0	.495
Social Media	3.54	1.85	2.87	1.68	76.0	.298
Audio/Music programmes	3.92	1.50	2.87	1.60	59.5	.069

Photo-Graphic programmes	2.69	1.38	1.67	1.40	45.0	.010*
Video editing software	2.31	0.95	2.00	1.51	68.0	.153
Instant messaging	1.92	1.32	1.67	1.18	85.5	.529
Video chat	2.08	1.55	2.00	1.25	96.5	.959
Translators	3.00	1.73	2.47	1.60	78.0	.350
Dictionaries	4.31	1.18	3.13	1.51	47.0	.014*
Games	3.15	1.41	2.33	1.29	63.0	.103

Note: * difference between means is at p≤.05.

Table 2 shows that of the four different devices listed in the survey, *computer* followed by *projector* were the most used by respondents of the two groups, who reported that they 'always' use them in their classes. In the opposite direction, the *interactive whiteboard* was the less used, though while the mean for G1 used it in the mid-point between 'once per term' and 'once per month', G2 used it slightly below 'once per term'. It is noteworthy that this item is not only related to CALL education but also to the technical infrastructure at their working place. This is not the case for the use of *mobile devices,* where we found significant differences between the groups. G1 used it between 'once per month' and 'once per week', G2 slightly used it above of 'once per term'. Concerning software usage, the most used by both groups (above 'once per week') were *internet browsers* followed by *word processors*, *e-learning platforms* and *presentations*. *Cloud storage services, audio programmes*, and *dictionaries* are also one of the most used software by G1 but not G2. Similarly, G1 also tended to use *blogs, social media, translators* and *games* 'once per month', yet for these four items participants of G2 responded that they use them below that frequency. Among the less used software in ascending order were *instant messaging, video chat*, and *video editing*, which both groups tended to use 'once per term'.

The data analysis depicted how HE L2 instructors perceived their CALL training. The survey responses showed that participants of both G1 and G2, regardless of their CALL education background, believed that their CALL training helped them to carry out CALL practices. However, besides this similarity in instructors' perceptions towards the training received, responses in terms of

frequency of technology usage varied according to their CALL preparation. In general, G2 tended to use less frequently hardware and software than G1. Furthermore, significant differences were found in specific items, such as in the use of *wikis,* a database that can be developed collaboratively; yet both groups reported that their CALL training encouraged them to use new technologies with their students to create collaborative learning projects. The variation observed in instructors' beliefs and in their actual use of technology suggests that CALL training as part of MA or PhD programmes does make a difference, in other words, the knowledge and skills provided by these programmes are not obsolescent after instructors obtain certification (Guichon, 2009) nor impractical for pedagogical purposes (Kessler, 2007). Nonetheless, the results presented in this study reflected the frequency of technology usage, no differences can be reported on how the various technologies were used.

Finally, since the use of technology could be constrained by the working place characteristics, we also examined instructors' perceptions towards this factor. The results are presented in Table 3.

Table 3.   Descriptive statistics and Mann-Whitney U test results of instructors' perceptions towards their working environment

	Group 1 (N=13)		Group 2 (N=15)		Mann-Whitney U test	
	M	SD	M	SD	U-value	p-value
A variety of computer software is available for use at my working place.	3.77	1.01	3.33	0.82	75.50	.286
The technical infrastructure at my working place is adequate.	3.31	1.32	3.33	1.11	96.50	.962
The technical support at my working place is adequate.	3.31	1.03	3.13	1.06	88.50	.664
The internet connection at my working place is adequate.	3.62	1.04	3.47	1.13	93.00	.829

The CALL training received did not seem to affect the instructors' attitudes with regards to their working place. No significant differences were found in this

respect. Moreover, the four individual items in this measure had a mean score above three and below four for both groups, representing the neutral point on the Likert scale. However, each item is also characterised by a high standard deviation, indicating that participants of each group differed in their perceptions towards this factor. A possible explanation for this is that instructors belonged to different institutions, where the integration of CALL in language programmes varied according to university guidelines (Papadima-Sophocleous & Parmaxi, 2016) as well as the availability of resources and access to technology (Athanasiou & Nicolaou, 2014).

4.   Conclusions

This study focussed on exploring CALL practices in the HE system in the Republic of Cyprus, and CALL education as one of the factors affecting those practices. The results of our survey showed different backgrounds in CALL education that did not affect instructors' attitudes towards the CALL training received. In general, the participants of the study agreed that their CALL preparation helped them to achieve pedagogical uses of technology. Yet, significant differences were found on the use of mobile devices and specific software between instructors who had formal and informal CALL preparation and those with only informal CALL preparation. These findings suggest that the knowledge and skills provided by MA or PhD programmes contribute to teaching with technologies at a higher level than informal CALL training. However, the degree of this contribution was lower than we expected, since significant differences in technology use for teaching purposes were only found in five items of the 21 listed in our survey.

In this exploration, the relevance of our study should be understood as illustrative rather than definitive. Our findings cannot be generalised to the whole population of language instructors in the Republic of Cyprus. Instead, the results should be taken as a description of CALL practices related to HE instructors with a particular CALL training background. In addition, since the study was conducted by a web-based interface, it could be possible that responses only represent those

who are technology inclined. Future researchers may recruit a larger sample of participants to offer additional perspectives. It could also be possible that some instructors responded in technologically desirable ways. Because of this, we suggest that follow-up research should also examine CALL practices through observation. Despite these limitations, the findings of the study contribute to a better understanding of Cypriot HE L2 instructors' profiles, their CALL education, their beliefs about their CALL training, and their current CALL practices.

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