Language Teachers' Perceived Computer Self-efficacy: Identifying Knowledge and Skills Gaps for Teacher-driven Professional Development

Dr. Victoria Tuzlukova
Language Centre, Sultan Qaboos University
Sultanate of Oman

Louise Greenwood
Language Centre, Sultan Qaboos University
Sultanate of Oman

Jamila Al-Siyabi
Language Centre, Sultan Qaboos University
Sultanate of Oman

James Scully
Language Centre, Sultan Qaboos University
Sultanate of Oman

Abstract

This paper reports on a study that explores computer self-efficacy of English language teachers at Sultan Qaboos University and the challenges they face when using computer technology in the classroom and in their daily working lives. Also investigated are the teachers' preferred modes of training and professional development that will enhance their computer self-efficacy. The respondents are 113 Sultan Qaboos University Language Centre teachers - 41 males and 72 females – having various educational, socio-cultural and linguistic backgrounds. The results demonstrate that almost all teachers, in spite of their work experience, previous and current professional development training, still face diverse challenges in using computer technology and many of these have emerged around aspects of their computer self-efficacy, including use of Excel, presentation software, e-learning, etc. Therefore, recommendations are provided for teacher-driven professional development, which seek to raise teachers' belief in their capability to use innovative computer technology for high-quality language teaching.

Keywords: computer self-efficacy, language teachers, Language Centre, professional development, Sultan Qaboos University

Introduction

Continuing in-service English language teachers' professional development, which includes formal and informal means of helping teachers with acquiring new skills, developing new insights into pedagogy and gaining a new or advanced understanding of professional content and resources (Grant, 1994), as well as its systematic examination and enhancement have always been in focus in educational institutions in the Sultanate of Oman (Al-Dafaei, 2012; Al-Khayari, 2011; Al-Siyabi, 2009; Al-Rasbi, 2006). The Language Centre at Sultan Qaboos University is no exception. Its faculty members are involved in various types and forms of professional development, which have emerged as an important tool in enhancing teachers' knowledge base, skills, attitudes and professional beliefs (Al-Balushi et al., 2008). One such belief is about computer technologies and teachers' computer efficacy as crucial determiners of effective high quality teaching (Al-Dafaei, 2012). In relation to such beliefs, recent studies (Absalom, 2012; Absalom, 2011; Butt et al., 2012) suggest that computer self-efficacy should be considered an important trait that factors into a language teacher's ability to teach effectively in today's classroom. This classroom, in addition to innovative teaching methods and techniques, features computer-based tasks and assignments suitable for their "digital native" (Prensky, 2001) students. Furthermore, computer self-efficacy is a key to language teachers' readiness to adapt to the new reality of teaching and the workplace in general, to grow professionally and to keep in touch with what is happening in the field (Farrel, 1999). For that reason the teachers at the Language Centre seek to gain more experience in computer technologies and to enhance their computer self-efficacy, and, consequently, to achieve professional growth in their communication skills and teaching practice.

The aim of this paper is to present a study that investigates the computer self-efficacy and preferences for training in computer technologies of teachers in the Language Centre, a large language institution at Sultan Qaboos University in Oman, which employs both novice teachers and those who have been in the English language teaching profession for a decade or more. In particular, it focuses on these teachers' self-perceived knowledge and skills in using computers as well as on their ability to deal with possible challenges that are emerging from rapidly changing technology used in the workplace and in the language classroom. It also highlights the important areas for teacher-driven, research-based professional development, based on examination of teacher's self-perceived computer needs, knowledge and skills gaps.

Brief overview of professional development at Sultan Qaboos University Language Centre

According to Glatthorn (1995), teacher development is about "the professional growth a teacher achieves as a result of gaining increased experience and examining his or her teaching professionally" (p. 41). It is also about on-going interactive and cumulative learning necessary to develop new conceptions, skills, and behaviors (Fullan, 1992: 66) as well as various institutional initiatives, including the increased responsibility for excellence in teaching (Frye, 2008).

Following the above lines of reasoning, an institutional professional development forum, named the Professional Development Committee, was established at Sultan Qaboos University Language Center in 2008 (Al-Balushi et al., 2008). Since its inception the committee has been working in collaboration with the administration and other units and committees in the Centre, namely the Faculty Academic Support Unit, and the Curriculum Unit, to create a positive impact of professional development through a sequence of events by utilizing voluntary support of internal and external experts. These have included workshops, presentations, training sessions, peer observations, needs analysis and action research.

Professional development events offered by the Language Centre Professional Development Committee have involved working in teams and small groups, face-to-face and online interactions, allowing more co-operation and collaboration between teachers. Most of the events have centered on constructing specific skills of the teachers as well as about addressing short-term and immediate plans of the Language Centre. For example, the recently introduced English Foundation Program includes such elements as an electronic portfolio for enhancing students' study skills, a Moodle-based platform for posting teaching materials and students' assignments related to all four language skills as well as other language learning services, technologies and tools. Other courses in the Language Centre require teachers to be familiar with using specific presentation software, for example Prezi, as well as online platforms such as Wiggio and Google Drive. Teachers are expected to be mobile between courses and to be able to teach using the full range of these applications, some of which are an issue of concern with many teachers and require training.

Absalom (2012) indicates that "… university teachers seem to represent a reasonably well-equipped cohort of ICT users" (p.4). Nevertheless, barriers to the effective use of computers are still in existence. It can be time-consuming to prepare lessons and activities which make use of new and innovative technology. Added to this, technology is not always reliable and this can be very frustrating for teachers especially when training is insufficient and/or there is no opportunity for all faculty to articulate their training needs to enable them to exploit innovative technology to the full and with a greater degree of confidence.

Computer self-efficacy: definition and possible effects

According to psychologist, Albert Bandura (1997), self-efficacy relates to an individual's confidence in one's ability to employ suitable behavior needed to produce the preferred outcome. Bandura (1997) explains that one's perceptions of self-efficacy come from different sources and mentions four sources of self-efficacy information: guided mastery, behavior modeling, social persuasion and physiological states. The strongest influence is guided mastery, i.e. actual experiences of success in dealing with the behavior. For example, the more successful interactions people have with computers, the more likely they are to develop high self-efficacy. Other sources of self-efficacy are behavior modeling, that is observing someone else performing the behavior; social persuasion, for example, reassurance by others and physiological states, especially anxiety, which can lower self-efficacy. This reasoning suggests certain interesting implications for training in computer technology and enhancing teachers' self-efficacy in the contexts of constantly emerging and developing technology, i.e. beliefs in teachers' capability to organize and execute courses of action required to successfully accomplish a specific teaching task (Tschannen-Moran et al., 1998).

Bandura (1997) describes efficacy expectations as differing in magnitude, strength and generality. Magnitude relates to the level of difficulty of the task in question. Individuals with higher self-efficacy judge themselves as more able to complete more difficult tasks than those with lower self-efficacy. Generality relates to the breadth of application of the efficacy expectation. Bandura (1997) contends that self-efficacy expectations have different levels of strength. Individuals with strong self-efficacy find it easier to overcome problems and will persist in their efforts, whereas those with weak self-efficacy are more likely to become frustrated. As indicated by Bandura (1977), people with a low level of self-efficacy will avoid tasks for which their skills might be insufficient. Furthermore, self-efficacy affects one's ability to cope with a task once started because it affects the amount of effort one is likely to make as

well as one's persistence in dealing with the challenges involved. Following Bandura's (1997) thread of thought in relation to efficacy expectations, Chien (2012) reports that positive learning experiences lead to higher self-efficacy, which in turn enhances the effectiveness of training. This view is shared by Compeau & Higgins (1995), who contend that those with higher computer self-efficacy make more frequent use of computers, enjoy using them more and are less anxious about doing so. Consistent with Bandura (1997), Compeau & Higgins (1995) define computer self-efficacy as a person's perceptions of their ability to use a computer to carry out a certain task. According to them, individuals with highly generalized computer self-efficacy would judge themselves able to use a wide variety of software and hardware, whereas for those with less generalized self-efficacy, the number would be more limited. For example, a teacher planning a lesson which incorporates innovative technology may have a certain perception of how able they are to manage the technology, based on their self-efficacy level. Thus, computer self-efficacy affects teacher's performance.

Teachers' computer self-efficacy has also a clear impact on student achievement as demonstrated in a study of Canadian students in grades K-3 (Ross et al, 2001). A study in Pakistan indicates that students of teachers with higher self-efficacy achieve better results (Butt et al., 2012). Furthermore, the link between teacher self-efficacy, job satisfaction and student achievement is highlighted by Caprara et al. (2006). Thus, a teacher's level of self-efficacy is a strong determiner of their persistence in the face of challenges, the benefit they receive from training, their enjoyment and use of the skills in question, their anxiety and, crucially, of their students' achievements. Moreover, computer self-efficacy is dynamic, not static, and is able to increase over time with continued success (Bandura, 1986). Therefore, given the far-reaching effects of self-efficacy in an individual's personal and professional life, it is vital to explore and challenge teachers' beliefs and practices (Wallace, 1991) and to design professional development in a way to promote and increase self-efficacy. Only a careful examination of the aims, objectives and methods of professional development in the light of teacher-centered research will allow this.

The Study

Aimed at measuring and investigating teachers' computer self-efficacy in order to assess their computer knowledge and skills' gaps for teacher-driven, research-based, professional development, this study was conducted in the Language Centre of Sultan Qaboos University in the Sultanate of Oman.

The site and participants

The Language Centre is a large language institution. It provides English language services which support students in their academic studies and prepare students for their future roles in the workplace. More than 200 teachers from 30 different countries work at the Language Centre. All of them come to work at the centre with their unique experience, linguistic and socio-cultural background. They are here to help their Omani students to better adjust to the English language academic environment, improve language skills and prepare for English-medium courses in their subject areas. These teachers are supported by the Language Centre's Professional Development and Research Unit and Faculty Academic Support Unit in the form of formal professional development sessions and informal consultations to troubleshoot professional problems, including those related to the use of information and computer technologies. Members of both units comprised the team of investigators.

There were one hundred and thirteen teachers, who participated in the study, out of a total of 222, comprising just over 50% of the total academic staff of the Language Centre. The Language Centre teachers, who took the opportunity to drive professional development in the area of computer technology, are from a wide range of educational backgrounds and nationalities, with 25% of the respondents being in the age group 36-45 and 25% in the age group 46-55. 63% of the respondents were female and 37% male. In terms of highest qualification, 5% of the sample had a BA or BSc degree as their highest qualification, 83% had a MA or MSc and 11% a PhD. The average number of years teaching experience among the population is 21.45 years, with a range from 1-43 years and the average number of years experience in the Language Centre is 7.25 with a range of 0.5-26 years. 62% of the respondents had had previous training in information and computer technologies outside the Language Centre and 75% had had such training in the Language Centre.

Procedures and Instrument

Procedures. At the initial stage of the study, a survey of existing self-efficacy surveys took place. These included surveys for general and teacher self-efficacy, as well as more specialized self-efficacy surveys for information and computer technologies, computers, the internet and the web (Tschannen-Moran & Woolfolk-Hoy, 2001, Milbrath and Kinzie 2000, Compeau & Higgins, 1995; Al-Dafaei, 2012, etc.). Then the most common queries regarding the use of technology were brainstormed. In addition, a preliminary survey of the Language Centre middle management was conducted to identify the computer skills necessary for teachers to work in any of the programs offered, as well as to pinpoint areas of common difficulty for teachers in their use of information and computer technologies. These stages led to the development of the initial paper version of the survey, which was validated by a group of Language Centre faculty members. The final version of the survey in the form of an online questionnaire, which took the respondents between ten and fifteen minutes to complete, was developed using Google Drive. Later, after appropriate human ethics clearance, an invitation email with an embedded link was sent to all the Language Centre faculty members.

Instrument. The survey consisted of three sections: Personal Information, Computer Skills and Training Needs (see Appendix A for more information about the instrument).

The first section, Personal Information, consisted of ten questions asking for information on age, gender, date of obtaining highest qualification, years of teaching experience, years of experience in the Language Centre, previous computer training both outside and inside the Language Centre, frequency of using computers in everyday life and finally a question asking respondents to rate the importance of using computer technology in English language teaching.

The questions in the first section were based on the most common contributory factors to computer self-efficacy levels in the literature. To exemplify, the age factor is discussed in detail in Absalom (2011). In this preliminary study of teachers' attitudes to technology and their own literacy in information technology, it was found that the older the teacher, the more likely she/he is to have the perception that "students are way ahead of me in their use of information and computer technology" (p.623).

Another factor which is discussed is gender. However, there is disagreement about the effect of gender on computer self-efficacy scales. Busch (1995) found that male college students demonstrated higher levels of self-efficacy in programming and playing computer games. Quite interestingly, these male students reported that they had previously received more encouragement from parents and friends than the females, further substantiating Bandura's (1986) argument that encouragement plays a crucial role in enhancing self-efficacy. The findings

of the study by Halder & Chaudhuri (2011) reveal that gender is significantly related to computer efficacy. However, they found out that gender differences in computer efficacy vary according to subject area. For example, their findings demonstrated that there were no differences between genders among science teachers-in-training. However, male teachers-in-training in the humanities had higher levels of computer self-efficacy than their female peers. Hence a question is raised about what the picture in the Language Centre would be with regard to these factors.

Watson (2006) reported the positive effect of professional development on use of the internet in the classroom on levels of self-efficacy among teachers of science and mathematics. Specifically, professional development composed of an intensive workshop during a summer program with follow-up online courses led to self-efficacy levels which remained high over time. Our instrument, therefore, included questions relating to previous training both inside and outside the Language Centre.

Frequency of use is also linked to computer self-efficacy levels. In their longitudinal study of trainee teachers, Milbrath & Kinzie (2000) found that their respondents had higher self-efficacy in word processing and e-mail, which were used more frequently, whereas with database management software and computer packages used for statistics, self-efficacy levels were significantly lower, further illustrating the idea that self-efficacy can be built through successful interactions with computers.

The second section of the instrument, Computer Skills, consisted of a 55-item survey on component computer skills, inviting responses to statements beginning "I can….e.g. find a piece of information in an excel spreadsheet with more than one page", with possible responses on a 5-point Likert scale ranging from "Strongly Agree" to "Strongly Disagree", designed to assess the strength of each individual's computer self-efficacy (Bandura, 1977). This section was further sub-divided to reflect the different skill areas under scrutiny: using Microsoft Word (any version after 2004), using Microsoft Excel, using presentation software, e-mail, working online, office hardware and finally e-learning/computer-assisted language learning (CALL). Within each sub-section, the skills were arranged in ascending order of difficulty in order to try to assess the magnitude (Bandura, 1977) of computer self-efficacy in each area.

The third section, Training Needs, was designed to survey needs and wants with regard to training. Respondents were asked to choose between face-to-face group workshops, face-to-face one-to-one training, pre-recorded videos for self-access or text/screenshot instructions for self-access. Other areas surveyed in this section were the preferred timing of training, as well as the preferred composition of the training group members, e.g. colleagues teaching on the same program, from across the Language Centre or from across the university. Three open questions were included at the end of this survey. The first one asked teachers what aspect of computer technology they would choose to be trained in if they could receive the training immediately. The other questions asked for any other comments on training and any other comments on any aspect covered by the survey.

Results and discussion
Personal information and computer skills
One hundred and thirteen teachers of the Language Centre participated in the study. This number of participants makes just over 50% of the total academic staff. Table 1 in Appendix B summarizes the basic results of the study.

The study revealed a clear correlation between average scores for computer self-efficacy and age, with a demonstrable decrease in average self-efficacy scores, the older the age group.

Teachers in the highest age range of 56-65 scored an average of 207.236842. Those in the second age range of 46-55, had an average score of 209.178571. Those in the age range 36-46, scored an average 223.535714 and those in the youngest age group, below 35, had the highest average score of 228.052632.

No significant difference was found in total self-efficacy scores with regard to gender. In fact, female teachers scored very slightly higher overall than their male colleagues, with 216.097222 as opposed to 213.780488 for males (see Appendix C for more information on the impact of gender on teachers' computer self-efficacy in the four age groups).

Those teachers who had had previous training before joining the Language Centre scored significantly higher than those who had not, $p<.01$, with an average score of 220.9714286 among the former group and 205.9534884 among the latter (see Appendix D for information about the impact of previous training).

However, it was found that in-house training did not have an impact on computer self-efficacy, with those who had attended in-house training scoring an average of 215.845 and those who had not, scoring an average of 213.551 (see Appendix E for information about the impact of in-house training on teachers' self-efficacy).

With regard to frequency of use, the teachers who profess to using computers 'sometimes' or 'often' ($n = 36$) had significantly lower computer self-efficacy scores, $p<.0001$, (Mean = 195.361) than those who reported 'always' using computers ($n = 77$, mean = 224.558).

When asked their opinions on the importance of using computer technology in teaching, 98% of respondents rated this as either very or fairly important, with only four teachers rating this as not important. However, a clear correlation between this opinion and computer self-efficacy scores was identified.

Total scores for the eight categories in the component skills section were adjusted to allow for the different number of items in each category and converted to a score out of 5 to indicate computer self-efficacy of the total study population. The two areas in which teachers felt most confident were using word-processing and e-mail, similar to the study by Milbrath & Kinzie (2000). The lowest scores were in the online, classroom technology and e-learning categories (see Appendix E for more information on self-efficacy subscale scores). These findings were to some extent confirmed by the answers to the question in the final section of the instrument on training needs in which teachers were asked what skills they would like to be trained in if they could receive training the following day. The answers to this open question were analyzed using Nvivo software, which allowed a count of the number of times each target skill was mentioned. The most frequently mentioned target skills included a variety of needs, with Excel training appearing at the top of the wish list and the next three referring to e-learning and online skills. Troubleshooting problems with sound, printers and zero client computers was also mentioned frequently and this could be explained by the challenges of the unreliability of technology.

Within each skills category, the survey gave clear indications of training needs. For example, in the category of questions relating to presentation software, most people agreed that they were able to create a simple Microsoft Power-point presentation, the total faculty self-efficacy score being 514. However, when it came to adding transitions and builds to a presentation, the total faculty self-efficacy score was 402, indicating that training could usefully be given in the more advanced uses of this software. The lowest score within this category was for use of the relatively new presentation software, Prezi, with a total faculty self-efficacy score of 299. Similarly, within the group of questions relating to spreadsheet software, the overall

score among Language Centre teachers for finding a piece of information in a spreadsheet with more than one page was 519, whereas the score for creating formulae in Excel was much lower, at 387. In this way the instrument can be used to pinpoint the exact needs of faculty members in each area of computer skills
.

Training Needs

Training needs and preferences were explored in the third section of the survey. Current practice for professional development in the Language Centre is to offer voluntary, face-to-face, group training sessions which take place at convenient times during the teaching week and which are open to all members of the Language Centre. Teachers were asked to choose the most preferred option from four possibilities regarding mode and timing of training delivery, as well as the target population of the training. As regards the mode of delivery, the option of receiving one-to-one training received a score equal to that of face-to-face group training (35% each). Step by step text/screenshot instructions for individual access was second choice (18%) and the least preferred mode of instruction was pre-recorded, step-by-step videos demonstrating the target skills (12%).

An attempt to correlate the type of training preferred with self-efficacy scores was made, but no significant correlation was found. In terms of the timing of training sessions, participants slightly preferred the option of attending training sessions at convenient times during the working week (30%) to the other options of taking part in sessions either during the break between semesters (29%) or before the academic year begins (24%). The end of the academic year was the least preferred option (17%). There was a clear preference for training to be delivered and targeted to teachers working on the same program together with 58% of teachers choosing this as their first option. The second most preferred option was for training sessions which are open to all members of the Language Centre 34%, with a very low percentage preferring training to take place with colleagues from other departments in the university (8%).

In the responses to the invitation to make open comments on any aspect of training, nine mentions were made of the problem teachers face when they attend a training session, but subsequently do not use the skill in question. Suggestions to overcome this problem made by the respondents included supplying follow-up worksheets after each session that could be completed as homework assignments, continuation of sessions online or for training sessions to be offered in series as short courses. The need for training to be streamed was mentioned by five respondents, with frustrations being expressed when participants in a session have widely differing skills levels.

There were also several comments on the general subject of support. Two respondents commented on the need for consultants to answer particular questions and two comments on the need to utilize and spread the knowledge of colleagues with more advanced skills. Availability of technical support was mentioned by two people and there were a further three comments on the unreliability of technology in the university and the effect this has on classroom practice. Linked to this, there were two comments on the fact that the university should invest more in up-to-date technology, including interactive whiteboards and I-pads.

Conclusions and recommendations

University language teachers in Oman with various levels of experience and from a variety of backgrounds seem to be actively involved in using computer technology in their teaching and working life. Nevertheless, teachers in the higher age groups as well as those who have had limited training in information and computer technology and who make less frequent use of it tend to have lower computer self-efficacy. These findings suggest that there is a need for training for these groups of teachers.

The ability to use a computer for word processing and emailing is perceived as relatively high by Sultan Qaboos University language teachers. This finding suggests that these areas of teachers' computer self-efficacy can be given lower priority for training. However, there are some abilities and skills of the teachers that clearly need training and are of higher priority, namely working online, use of classroom technology, e-learning, trouble-shooting problems with office hardware, and using Excel and presentation software.

Teachers' preferred mode**s** of training and professional development that will enhance their computer self-efficacy include training sessions which are followed by self-access tasks in order to reinforce and practice the skills. Workshops given in series so that more basic tasks can be learned before moving on to more complex tasks are also preferred. Further, there is also a clear preference for professional development sessions that are streamed in terms of the ability of the teachers and targeted to their personal and professional needs. Teachers also need opportunities for one-to-one consultations with a highly experienced faculty member in order to find solutions to computer technology problems as soon as they occur.

About the Authors:

Dr Victoria Tuzlukova is the Head of the Professional Development and Research Unit at the Language Centre, Sultan Qaboos University, Oman. She has been working with the Language Centre for seven years.

Louise Greenwood is Head of Induction and Mentoring at the Language Centre, Sultan Qaboos University, Oman. She has been working with the Language Centre for seven years.

Jamila Al Siyabi is Head of Professional Development at the Language Centre, Sultan Qaboos University, Oman. Her research interests include English Language teaching and in-service teacher training.

James Scully is the Head of the Faculty Academic Support Unit at the Language Centre, Sultan Qaboos University, Oman. He has been working with the Language Centre for twelve years.

References

Absalom, M. (2012). Teachers and technology: Comparing university and school languages educators' perceptions of technology and their own IT literacy. Proceedings of *CALL: Using, Learning, Knowing, EUROCALL* conference, Gothenburg, Sweden, 22-25 August 2012. Research-publishing.net, 1-4. Retrieved March 15, 2013 from http://research-publishing.net/publication/978-1-908416-03-2.pdf.

Absalom, M. (2011). What do languages teachers think of technology and their own IT literacy? In S. Barton et al. (Eds.), *Global Learn Asia Pacific,* Issue 1, 620-626.

Al Balushi, A, Abrar, S., Al Busaidi, S. & Tuzlukova, V. (2008). Analyzing the impact of teachers' professional development on the quality of education. Proceedings of *Quality Management and Enhancement in Higher Education,* Oman National Quality Conference. 28-29 October 2008, Muscat, Oman, 29-31.

Al-Dafaei, I. (2012). Social studies teachers' level of use, attitudes and self-efficacy in computer technology in the Sultanate of Oman. Unpublished PhD dissertation. Universities Sains Malaysia: Malaysia.

Al-Khayari, S. (2011). The impact of teacher development groups on Omani teachers' classroom practice. Unpublished MA thesis. Sultan Qaboos University, Oman.

Al-Rasbi, S. (2006). In-service training needs of EFL teachers in Oman. Unpublished MA thesis. Sultan Qaboos University, Oman.

Al-Siyabi, H. (2009). The professional development of the English language teachers at the Oman Ministry of Defense. Unpublished MA thesis. Sultan Qaboos University, Oman.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioural change. *Psychological Review,* 84, (2), 191-215.

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, N.J.: Prentice-Hall.

Bandura, A. (1997). Self-efficacy: The exercise of control. New York: Freeman.

Busch, T. (1995) Gender differences in self-efficacy and attitudes towards computers. *Journal of Educational Computing Research*, 12, 147-158.

Butt, M.N, Hayat, K.. & Shahjehan. (2012). Impact of English teachers' self-efficacy beliefs on students' performance. *World Applied Sciences Journal*, 20, (7), 1031-35.

Caprara, G.V., Barbaranelli, C., Steca, P. & Malone P.S.,(2006). Teachers' self-efficacy beliefs as determinants of job satisfaction and students' academic achievement: A study at the school level. *Journal of School Psychology,* 44, (6), 473-490.

Chien, T.C. (2012). Computer self-efficacy and factors influencing e-learning effectiveness. *European Journal of Training and Development*, 36 (7), 670-686.

Compeau, D.R. & Higgins, C.A. (1995) Computer Self-Efficacy: Development of a Measure and Initial Test. *MIS Quarterly*, 19 (2), 189-211.

Farrel, T. (1999). ESL/EFL teacher development: top-down or bottom-up? Proceeding of the *1998 Korea TESOL Conference*, 39-43.

Fullan, M., & Hargreveas., A. (1992). Understanding teacher development. New York: Teachers College Press.

Glatthorn, A. (1995). Teacher development. In Anderson, L. (Ed), *International encyclopedia of teaching and teacher education* (2nd edition). London: Pergamon Press.

Grant, C. (1994). Best practices in teacher preparation for urban schools. *Actions in Teacher Education, 16,* 1-18.

Halder, S. & Chaudhuri, S. (2011) Computer self-efficacy and computer anxiety of trainee teachers: Issue of concern. *Proceedings of epiSTEME 4:* Fourth international conference to review research on science, technology and mathematics education, January 5-9, 2011, Mumbai, India. Retrieved April 2, 2013 from http://episteme4.hbcse.tifr.res.in/proceedings/strand-iii-curriculum-and-pedagogical-studies-in-stme/halder-choudhuri-v2.

Millbrath, Y. & Kinzie, M. (2000) Computer Technology Training for Prospective Teachers: Computer attitudes and perceived self-efficacy. *Journal of Technology and Teacher Education* 8 (4), 373-396.

Prensky, M. (2001). Digital Natives, Digital Immigrants Part 1. *On the Horizon*, 9(5), MCB University Press, 1-6. Retrieved February 23, 2013 from http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf.

Ross, J.A., Hogaboam-Gray, A., & Hannay, L. (2001). Effects of teacher efficacy on computer skills and computer cognitions of K-3 students. *Elementary School Journal* 102(2), 141-156.

Tschannen-Moran, M. & Woolfolk Hoy, A. (2001). Teacher efficacy: capturing an elusive construct. *Teaching and Teacher Education*, 17, 783-805.

Wallace, M. J. (1991). Training foreign language teachers. A reflective approach. Cambridge: Cambridge University Press.

Watson, G. (2006). Technology Professional Development: Long-term effects on teacher self-efficacy. *Journal of Technology and Teacher Education*, 14 (1), 151-165.

Appendix A

Investigation of LC Teachers' Perceived Computer Self-Efficacy: Identification of Knowledge and Skills Gaps for Teacher-Driven, Research-Based Professional Development.

Technology is changing rapidly and training opportunities are essential for every ELT professional. This study aims at measuring and investigating the Language Centre teachers' computer self-efficacy in order to assess their computer knowledge and identify skills gaps for professional development. This is a joint project by the Professional Development and Research Unit and the Faculty Academic Support Unit. For more detailed information about this project, please go to http://www.squ.edu.om/tabid/14123/language/en-US/Default.aspx.

Taking part in the survey

Please tick the boxes below to indicate that you are happy to take part in the survey.

1. I confirm that I have read and understood the introduction to this research project. □

2. I understand that participation is voluntary. □

3. I understand that anonymized quotes of any data I provide for this research project may be used in future publications. □

4. I agree to take part in the research study. □

Section 1 Personal Information

In this section we would like you to give us some information about yourself.

1. Age group.
   Please tick your age group.
   a. 35 or under □
   b. 36 – 45 □
   c. 46 – 55 □
   d. 56 – 65 □
   e. 65+ □
2. Gender – please tick:
   Female □
   Male □
3. Highest Degree – please tick:
   BA/BSc □
   MA/MSc □
   PhD □

4. When did you obtain your highest qualification? (Please write the year) _____

5. Please write the number of years' teaching experience you have: _____

6. Please write the number of years you have been working in the LC: _____

7. Have you had previous training in using computer technology outside the Language Centre? (Please circle)

Yes   No

8. Have you attended training in using computer technology inside the LC in the last two years? (Please circle)

Yes   No

9. How often do you use computer technology in your everyday life? (Please tick)

a. Always □

b. Often □

c. Sometimes □

d. Never □

10. How important to you is using computer technology in your teaching? (Please tick)

a. Very important □

b. Fairly important □

c. Not very important □

d. Not important at all □

Section 2 Computer Skills
This section measures your self-efficacy in carrying out a range of tasks using computers. Please rate yourself in terms of your confidence with each task.

	I can..	Disagree strongly	Disagree	Not sure	Agree	Agree strongly
	Microsoft Word – any version after 2005	1	2	3	4	5
1.	..find the 'Word' program on the computer.					
2.	..print a 'Word' document.					
3.	.. add a table to a 'Word' document.					
4.	.. copy and paste text or images.					
5.	.. add and remove page breaks to/from a 'Word' document.					
6.	..set a default font and font size in 'Word'.					
Microsoft Excel		1	2	3	4	5
7.	.. find a piece of information in an Excel spreadsheet that has more than one page.					
8.	..enter and save student grades in an Excel spreadsheet.					
9.	.. copy and paste information from one Excel spreadsheet to another.					
10.	.. create simple formulae in an Excel spreadsheet.					
11.	..extend formulae over a range of cells in an Excel spreadsheet.					
Presentation Software		1	2	3	4	5
12.	..create a simple presentation using e.g. PowerPoint.					
13.	..create a simple presentation using Prezi					
14.	..organize text on slides in a presentation.					
15.	..download a picture from the internet and add it to a presentation.					
16.	.. create a presentation with transitions and builds.					
E-mail		1	2	3	4	5
17.	..access a document attached to an email.					
18.	..send an email with an attachment.					
		Disagree strongly	Disagree	Not sure	Agree	Agree strongly
		1	2	3	4	5
19.	..send one mail to several recipients.					
20.	..send a picture of an appropriate size for an email.					
21.	..manage emails using folders / key words.					
22.	.. use a Google account to send and					

Language Teachers' Perceived   Tuzlukova, Greenwood, Al-Siyabi, & Scully

	receive emails (Gmail).				
Working Online		1	2	3	4	5
23.	.. use a Google account to share documents (Drive).					
24.	.. use a Google account to share my calendar (Google Calendar).					
25.	.. join and contribute to an online group e.g. Wiggio, 'Moodle Forum'.					
26.	..check my class list on the SQU Admissions and Registrations online system.					
27.	..enter student grades on the SQU Admissions and Registrations online system.					
28.	..book a room for a meeting using the room booking system on the Virtual Language Centre.					
29.	..capture a YouTube video using an add-on in Mozilla Firefox.					
30.	..use an online tool for referencing e.g. End Note, Zotero, Son of Citation Machine.					
31.	..back up my files to a Cloud service.					
32.	..set a proxy setting in Internet Explorer, Google Chrome and Mozilla Firefox.					
33.	..use outside on-line teaching resources e.g. Onestop English, Oxford University Press.					
34.	..create a blog or website for teaching purposes.					
35.	..sign up for a webinar.					
Office Hardware		1	2	3	4	5
36.	..troubleshoot printer problems.					
37.	..scan a flash-drive/thumbnail for viruses.					
		Disagree strongly	Disagree	Not sure	Agree	Agree strongly
		1	2	3	4	5
38.	..scan and save a document.					
39.	..back up my files to an external hard drive.					
Classroom Technology						
40.	..find and play a CD track on a classroom computer.					
41.	..use a Zero Client, assuming it is working efficiently.					
42.	..use a LCD projector in a classroom to show a document/video/picture/website.					
43.	..connect a laptop to a LCD projector using an RGB cable.					

		1	2	3	4	5
44.	..troubleshoot sound problems in a lab or classroom.					
45.	..troubleshoot problems with a Zero Client.					
E-learning / CALL		1	2	3	4	5
46.	..introduce Clarity software e.g. Tensebuster, Active Reading to students.					
47.	..teach using an already established Moodle course.					
48.	..check my students' progress on Moodle.					
49.	..create my own Moodle course.					
50.	..view my students' Moodle Reader results.					
51.	..add a new student to my class in Moodle Reader.					
52.	..create a class in Turnitin.					
53.	..create an assignment in Turnitin.					
54.	..use quick marks in Turnitin to give feedback to my students.					
55.	..create an electronic portfolio.					

Section 3 Training Needs and Preferences

1. Which type of training would you prefer? Please grade the following options:

	1= least preferred	2	3	4 = most preferred
a. One-to-one, face-to-face training session				
b. Face-to-face group workshops.				
c. Pre-recorded, step-by-step videos demonstrating the skill.				
d. Step-by-step text /screenshot instructions for individual access.				

2. When would you prefer training to take place? Please grade the following options:

	1= least preferred	2	3	4 = most preferred
a. During the semester break (January/February)				
b. Convenient slots during a normal working week				
c. At the end of the spring semester before going on leave				
d. One week before classes start.				

3. Which group of people would you most like to be trained with? Please grade the following options:

	1= least preferred	2	3= most preferred
a. The people teaching the same course as me.			
b. Colleagues from across the LC.			
c. Colleagues from across SQU.			

4. If you could receive training <u>tomorrow</u> on any aspect of computer technology, what would you like it to be about?

5. Any other comments on training?

6. Any other comments on any aspect of this questionnaire?

Appendix B
Basic Results Of The Study: Test Level Statistics

Number of Items	55
Number of Examinees	113
Minimum Possible Score	55
Maximum Possible Score	275
Minimum actual score	96.0000
Maximum actual score	275.0000
Mean	215.2566
Median	215.0000
Standard Deviation	32.6171

Appendix C
Impact of Gender on Teachers' Computer Self-efficacy

		Female			*Male*	
	n	Mean	St Dev	n	Mean	St Dev
<35	16	227.438	23.441	3	231.333	30.665
36-45	17	210.647	32.766	11	243.455	26.987
46-55	20	206.500	26.544	8	215.875	26.281
56 up	19	201.105	36.077	19	213.368	38.238
Total/Overall	72	216.097	30.570	41	213.780	36.645

Appendix D
Impact of Previous Training Outside the Language Centre on Teachers' Computer Self-efficacy

Category	#	*Average Group 1*	*St.Dev*
Training Before LC	70	220.9714286	32.9972744
No Training Before LC	43	205.9534884	30.2518386

	113		

Appendix E
Impact of Training in the Language Centre on Teachers' Computer Self-Efficacy

Category	#	Mean	St. Dev.
ICT Training in LC	84	215.845	31.073
No ICT Training in LC	29	213.551	37.780
	113		

Appendix F
Collective efficacy Subscale Scores

Word	Excel	Presentation software (PowerPoint, Prezi)	E-mail	Online	Office Hardware	Classroom technology	E-learning
4.67	4.08	3.92	4.61	3.39	4.12	3.42	3.59