EXPLORING THE GAP BETWEEN A PRE- AND POST-INSTALLATION OF A CORPORATE E-LEARNING PROGRAM IN AN ACCOUNTING WORKPLACE

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ABSTRACT

Although earlier concentration has addressed the use of corporate e-learning programs (CELP), the dissimilitude between pre and post installation reaction to CELP is less explored. This study adopted a two-phase investigation to survey learner intention to use CELP and actual behavior within an international accounting firm. In the pre-installation phase, a survey was conducted to evaluate learner intention to use CELP, followed one year later by a second investigation to examine learner reactions to CELP and the actual usage frequency/ duration. The results of this study identified there is actually a difference between intention and actual usage duration. Further questionnaire surveys were implemented to identify learner reactions and factors that could potentially contribute to the gap between intention and actual usage duration. Results also indicated that scheduling was the critical factor leading to the differences in actual usage. The conclusions clarify the relationships among learner intention to use CELP, actual usage frequency/ duration, and subsequent reactions towards it.

INTRODUCTION

Among the many available forms of training media, e-learning has been widely adopted for obtaining skill-based organizational outcomes (Welsh, Wanberg, Brown, & Simmering, 2003; Zhang, 2004). Many financial institutions invest in e-learning programs to help their employees acquire knowledge regarding new services to better meet the diverse requirements of their customers (Luor, Hu, & Lu, 2009). A report published by Learning Circuits and E-learning News (2008) showed that corporate employees represent the majority (73.2%) of e-learning users. This figure highlights the attempts of businesses to develop their core competencies through low-cost, convenient, and flexible e-learning mechanisms. To aid in employee training, employers install and make e-learning programs available on the internet. Easy access to programs such as these can strengthen an institution's competitiveness, especially if the market in which the institution operates is highly competitive. In Taiwan, the accounting industry is facing just such competitive pressure in terms of service quality and administrative efficiency (Wu, 2008; Cheng, 2011). Researchers have noted that Taiwan has a high-performing society that encourages employees to improve their performance and rewards them for excellence (Javidan & House, 2001; Luor, Lu, Johanson, & Wu, 2009).

Like any training program, corporate e-learning programs (CELPs) encounter the difficulties of attracting, satisfying learners and keeping them engaged until the completion of the program (Noe, 2002; Wang & Wang, 2004; Lee, Tseng, Liu, & Liu, 2007). As with the success of any organizational policy, success in implementing CELP depends largely on employee participation (Wang & Wang, 2004). If learners perceive that courses are optional or have little positive effect on learners, lower completion rates are a likely result (Welsh et al., 2003). By analyzing learner reactions to CELP, executives can determine whether the learners accept the program; in other words, learner comments regarding the program can help to improve future implementation (Weibel, Stricker, & Wissmath, 2012). It is also important that CELP directors are aware of both favorable and unfavorable reactions to ensure that factors contributing to the success or failure of training activities are revealed (Stricker, Weibel, & Wissmath, 2011). To capture the entire spectrum of CELP, this study adopted both formative and summative approaches to examine learner reactions to CELP before and after installation of the program separately (Mohr, 1995; Luor et al., 2009) For the formative evaluation, a questionnaire was adopted to analyze the processes of the program (Mohr, 1995). For the summative evaluation, another questionnaire was developed to concern a program's effect on the development of knowledge and skills (Kirkpatrick, 1996; Luor et al., 2009).

Previous research has provided evidence that learners in an e-learning environment outperform their counterparts in traditional learning settings (Shachar & Neumann, 2010; Stricker et al., 2011; Weibel et al., 2012). In addition, Luor et al. (2009) further proposed a gap between the learner intention and actual usage of CELP. However, few studies have explored how different factors influence the actual behavior to CELP within the contextual relation of a   practical workplace at the same time. In short, this study had two goals. First, a framework was developed and tested based on the variables of intention to use CELP (INT), actual usage freqency (AUF), actual usage duration (AUD), perception of utility (UT), satisfaction (SAT) and affective reaction to e-learning (AR). This frame was used to provide a better understanding of how learner intention influences the actual usage of CELP and helped to identify the rationale behind the observed relationships.

Second, doubts have been raised as to whether a gap actually exists between INT, AUF, and AUD. Moreover, a further questionnaire survey was conducted to find out the critical factors that may contribute to this gap.

METHOD

Hypothesis

INT and AUF/ AUD

Based on the theory of reasoned action (TRA; Fishbein & Ajzen, 1975) and the theory of planned behavior (TPB; Ajzen, 1991), learner intention to participate in a specific behavior derives from their attitude to that behavior. A lot of studies have proposed the relationship between intention and behavior (Kim & Hunter, 1993; Luor *et al*., 2009). These theories suppose that actual behavior draws from intention to use (Fishbein & Ajzen, 1975, Ajzen, 1991, Taylor & Todd, 1995). Both TRA and TPB regard intention as the precedent of actual behavior. That is, only learners with intentions toward a particular behavior are likely to follow through. In the contextual relation of CELP, learner INT is positively related to actual usage (AU). AU in this study adopted two methods for calculation: (1) learner log-in frequency (AUF); and (2) learner review duration (AUD). According to TRA and TPB, the following hypothesis was proposed.

Hypothesis 1: Learner INT is positively related to learner AUF, such that the higher the learner INT, the higher the learner AUF.

Hypothesis 2: Learner INT is positively related to learner AUD, such that the higher the learner INT, the longer the learner AUD.

AUF/ AUD , UT, SAT, and AR

Four criteria are commonly thought as proper for training evaluation: reactions, learning, behavior, and results (Kirkpatrick, 1959 & 1996; Luor *et al*., 2009). Moreover, reaction is the most frequently measured consequence in practice among them (Brown, 2005). Reaction is defined as how learners perceive a CELP, including the learning content and structure, learning strategies, facilitated design, information and interface design, and learning assessment and feedback in this study. Evaluating a CELP in terms of learner reaction is the same as measuring trainee feelings (Kirkpatrick, 1996). From the viewpoints of CELP designers, reactions are effective because they authorize organizations to evaluate learner satisfaction towards program. This evaluation may in turn help the organization to determine the courses to offer and the instructors to appoint. In measuring learner reaction, this study adopted the three types of reactions proposed by Brown (2005) and Luor *et al*. (2009): UT, SAT and AR. UT refers to the degree to which learners feel the CELP is useful (Brown, 2005; Luor *et al*., 2009). Learners with high UT tend to use what they learned at work and suggest the CELP to their colleagues (Orvis, Fisher, & Wasserman, 2009). SAT directs to the degree to which learners are satisfied with the environment in which corporate e-learning courses are delivered (Brown, 2005; Liaw, Huang, & Chen, 2007). Even though this point is not directly related to the content of the CELP, it plays an important role because technical problems can reduce the likelihood that learners will participate in e-learning (Luor *et al*., 2009). AR refers to the general affective feeling that learners have toward the CELP (Brown, 2005; Luor *et al*., 2009). This type of reaction can often affect the retention of CELP. Thus, the following hypotheses were proposed.

Hypothesis 3: Learner AUF is positively related to learner UT, such that the higher the learner AUF, the higher the learner UT.

Hypothesis 4: Learner AUD is positively related to learner UT, such that the longer the learner AUD, the higher the learner UT.

Hypothesis 5: Learner AUF is positively related to learner SAT, such that the higher the learner AUF, the higher the learner SAT.

Hypothesis 6: Learner AUD is positively related to learner SAT, such that the longer the learner AUD, the higher the learner SAT.

Hypothesis 7: Learner AUF is positively related to learner AR, such that the higher the learner AUF, the higher the learner AR.

Hypothesis 8: Learner AUD is positively related to learner AR, such that the longer the learner AUD, the higher the learner AR.

Participants

The participants were employees at an international accounting firm in Taiwan. This firm is among the top four accounting firms in Taiwan. A total of 330 Level I employees from the auditing department participated in this study. The CELP comprised four e-courses, including pre-audit meeting, audit practice I, audit practice II, and post-audit review. The four e-courses were designed and developed with the cooperation of this firm and the researcher, using the ADDIE method.

Measures

This study explored learner intention and actual usage to CELP before and after the installation of this program separately. To achieve this objective, this study measured participant intention to use CELP (INT), utility (UT), actual satisfaction (SAT), and affective reaction (AR) to CELP on the basis of items from the scale by Fishbein & Ajzen (1975) and Brown (2005). All items were measured on a 5-point Likert scale ranging from 1 to 5 (strongly disagree to strongly agree). The items used in this study and the reliability coefficients of each construct are shown in Table 1. All items were adopted from well-developed scales that have been used extensively in previous studies (Cacioppo & Petty, 1984; Fishbein & Ajzen, 1975). Because the reliability coefficients exceeded .70 and because the proposed relationships among the study variables were consistent with the relationships indicated by previous research (Schmidt & Hunter, 1996; Luor *et al*., 2009), the psychometric properties of the items in this study should be acceptable (Kim & Hunter, 1993; Schmidt & Hunter, 1996).

To ensure the content validity of the scale (Schmidt & Hunter, 1996), ten individuals participated in the pre-test according to Cheng (2011). Five participants were employees with experience in e-leaning at the firm in the case study. Each item in the questionnaire was evaluated using a three-point Likert scale, including A as "Unclear question", B as "Needed modification", and C as "Clear question". Usually, the items that had an A-point were deleted, the items that had a B-point were revised, and the items that had a C-point were kept for the questionnaire. The five other participants included three experts in accounting and two experts in e-learning. Each item in the questionnaire was also assessed using a three-point Likert scale, with 1 as "It is not necessary to ask the question", 2 as "It is useful, but not essential to ask the question", and 3 as "It is essential to ask the question". The questions that received a one-point score were deleted, the questions that received a two-point score were revised, and the questions that received a three-point score were kept in this study.

Table 1. Measurement and Reliability

Measurement items		Cronbach's α
1.Intention towards corporate e-learning (INT)		
	I was intent on using the corporate e-learning program.	
2.Utility (UT)		
	Using e-learning was relevant to my work.	0.915
	Using e-learning provided useful skill and knowledge.	
3.Technology satisfaction (SAT)		
	The e-learning interface was easy to use.	0.907
	The e-learning allowed for easy review.	
	I am satisfied with the e-learning interface.	
4.Affective reaction (AR)		
	I enjoyed using e-learning.	0.949
	With e-learning, this material was fun.	
	I am satisfied with e-learning.	
	I will recommend e-learning to others.	

Procedures

Prior to installation of the CELP, employee intention to use CELP was surveyed. The questionnaire measured employee perceptions of INT with regard to CELP. Of the 330 questionnaires distributed during Sep-Nov 2010, 312 valid responses were obtained. A second survey to evaluate employee reactions to the CELP was conducted one year after installation. Of the 312 employees who had played a part in the pre-installation survey, only 178 employees had actually used the CELP. Thus, the response rate was 57.05% in the post-installation survey. Table 2 presents the demographic background of the 178 participants.

To determine whether a gap really exists between INT and AU in the accounting industry, this study defined high-intention participants as those whose score on the intention scale was larger than the mean score of 3.7. Consequently, 104 employees that had used the CELP were identified as high- intention participants. A

median-split method was then used to divide high-intention participants into two groups on the basis of their AUD. AUD was evaluated according to time that participants reviewed CELP (median AUD=95 minutes). 53 employees were in the high-intention and high-usage group (HH group) and the remaining 51 employees were in the high-intention and low-usage group (HL group). Moreover, a measure of the nine identified critical success factors was developed on the basis of factors critical to e-learning obtained from the previous literature (Alexander, 2001; Bonk, 2001; Soong, Chan, Chua, & Loh, 2001; Masoumi, 2006; Packham *et al.*, 2004; Welsh *et al.*, 2003 ; Féraud, 2005; Luor *et al.*, 2009). 104 questionnaires were then distributed to all high-INT employees on the spot, resulting in a response rate of 100%.

Table 2. Demographic background of participants

Item	Group	Persons	%
Gender	Male	40	22.5%
	Female	138	77.5%
	Total	178	100%
Age	20 ~ 24	129	72.5%
	25 ~ 29	44	24.7%
	30 ~ 34	5	2.8%
	Total	178	100%
Education	Bachelors	131	73.6%
	Masters	47	26.4%
	Total	178	100%
Possession of professional certificate(s)	Yes	7	3.9%
	No	171	96.1%
	Total	178	100%
Note: Of the 7 respondents with professional certificate(s), 1 reported to have both a Taiwan CPA license and a US CPA license, 3 reported to have a Taiwan CPA license, and 3 reported to have a US CPA license.			

Analysis
This study adopted path analysis with regression to analyze the data. In general, the coefficient value that is correlated with each path represents the power of each linear relationship.

RESULTS
Regression Approach Results
As shown in Table 3, most correlations among variables were less than 0.8, indicating that there was no chance of multicollinearity among the variables in this study (Kettanurak, Ramamurthy, & Haseman, 2001). Table 3 presents the descriptive statistics of variables in this study. The INT statistics had a high mean value (3.7), which implies that the participants generally had a positive intention to use CELP. The bivariate relationships showed that all significant correlations were less than 0.80, except for the correlation between SAT and AR ($r = 0.836$, $p < 0.01$). The following relationships that held after the installation of the CELP are significant: INT is correlated with AUF, and AUF is correlated with AUD. However, the relationship between INT and AUD is not significant. Specifically, neither learner AUF nor AUD is positively related to learner UT ($\beta = 0.005$, $p > 0.05$; $\beta = 0.003$, $p > 0.05$), to SAT ($\beta = 0.064$, $p > 0.05$; $\beta = 0.07$, $p > 0.05$) and to AR ($\beta = 0.044$, $p > 0.05$; $\beta = 0.001$, $p > 0.05$). In a word, no matter AUF or AUD is not correlated with UT, SAT, or AR. In addition, the relationship between INT and AUD is not significant. In other words, the regression results supported Hypothesis 1 but not Hypotheses 2 to 8. The research model is shown in Fig.1.

Table 3. Mean, Standard Deviation, and Correlation among Study Variables

	1	2	3	4	5	6
Before system installation						
INT-AVG	3.70(.825)	.122**	.077	.490***	.552***	.588***
Actual usage						
AUF		9.89(8.492)	.731***	.005	.064	.044
AUD			298.8(451.05)	.003	.007	.001
UT-AVG				4.02(.67)	.723***	.642***
SAT-AVG					3.824(.717)	.836***
AR-AVG						3.639(.739)

Mean (standard deviation) is shown on the diagonal.
** Correlation is significant at the .05 level (2-tailed); *** Correlation is significant at the .01 level (2-tailed).
INT, intention; AUF, learner log-in frequency; AUD, learner review duration by minutes; UT, utility; SAT, satisfaction; AR, affective reaction to e-learning.
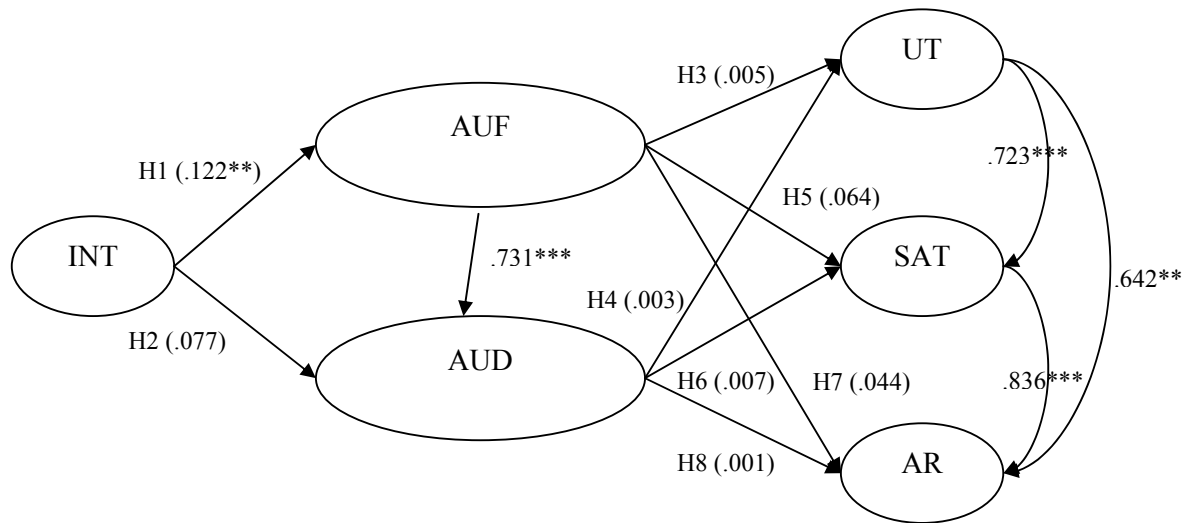

Fig. 1. Research Model
Note: ** Correlation is significant at the .05 level (2-tailed); *** Correlation is significant at the .01 level (2-tailed).

Formative Evaluation of CELP

Although learner AU is not correlated with UT, SAT, or AR, this study further adopted a questionnaire to explore learner opinions of CELP for formative evaluation. Hereafter, the high mean values of learner response were added up to report the results. Table 4 illustrates that most of the learners had a positive attitude toward CELP, in terms of learning content and structure, learning strategies, facilitated design, information and interface design, learning assessment, and feedback. It could be inferred that CELP increased learner motivation to engage in the program. However, actual usage did not cultivate in accordance with their positive attitudes toward the CELP. The reason may be that (1) learners did not have sufficient time to use CELP, or (2) learners were accustomed to the conventional knowledge delivery model in an actual classroom. Radical changes in the knowledge delivery model through technology may result in employee resistance to learning (Wang, 2009).

Table 4. Formative Evaluation of CELP

Dimension	Item	N	SA	A	N	D	SD	M
Learning content and structure	1-1. The content of CELP clearly describes the topics I am to learn.	178	36 (20%)	109 (61%)	30 (17%)	2 (1%)	1 (1%)	3.99
	1-2. The content of CELP clearly explains what knowledge I can acquire.	178	39 (22%)	105 (59%)	29 (16%)	5 (3%)	0 (0%)	4.00
	1-3. The content of CELP clearly describes what skills I can acquire.	178	33 (19%)	107 (60%)	32 (18%)	6 (3%)	0 (0%)	3.94
	1-4. The content of CELP clearly explains what kind of work attitude I should have.	178	38 (21%)	96 (54%)	34 (19%)	10 (6%)	0 (0%)	3.91
	1-5. The content of CELP completely conforms to the instructional goals.	178	31 (17%)	107 (60%)	34 (19%)	5 (3%)	1 (1%)	3.91
	1-6. The content of CELP is suitable for me.	178	32 (18%)	101 (57%)	39 (22%)	6 (3%)	0 (0%)	3.89
	1-7. The content of CELP is correct.	178	30 (17%)	97 (54%)	42 (24%)	8 (4%)	1 (1%)	3.83
	1-8. The content of CELP is well organized in an appropriate order.	178	33 (18%)	107 (60%)	30 (17%)	7 (4%)	1 (1%)	3.92
	1-9. The content of CELP is well organized in a process that meets my needs.	178	35 (20%)	108 (60%)	26 (15%)	8 (4%)	1 (1%)	3.94
	1-10. The content of CELP is well organized in each unit.	178	33 (18%)	105 (59%)	34 (19%)	5 (3%)	1 (1%)	3.92
	1-11. The content of CELP provides adequate materials in each unit.	178	32 (18%)	101 (56%)	37 (21%)	7 (4%)	1 (1%)	3.88
	1-12. The content of CELP clearly explains what kinds of prerequisite skills I should possess.	178	27 (15%)	99 (56%)	44 (25%)	8 (4%)	0 (0%)	3.81
	1-13. CELP offers supplementary learning resources.	178	37 (21%)	96 (53%)	37 (21%)	8 (5%)	0 (0%)	3.91
	Learning content and structure				3.91			
Learning strategies	2-1. CELP inspires learning motivation.	178	26 (15%)	91 (51%)	50 (28%)	10 (5%)	1 (1%)	3.74
	2-2. CELP offers adequate examples and demonstrations.	178	41 (23%)	99 (56%)	31 (17%)	6 (3%)	1 (1%)	3.97
	2-3. CELP is presented in a way that meets learner needs.	178	35 (20%)	102 (57%)	33 (18%)	7 (4%)	1 (1%)	3.92
	2-4. CELP provides explanations in each stage of learning.	178	39 (22%)	100 (56%)	33 (18%)	5 (3%)	1 (1%)	3.96
	Learning strategies				3.90			
Facilitated design	3-1. CELP provides a helpful user manual.	178	25 (14%)	102 (57%)	38 (21%)	12 (7%)	1 (1%)	3.78
	3-2. CELP inspires me to participate in learning activities.	178	29 (16%)	95 (53%)	46 (26%)	7 (4%)	1 (1%)	3.81
	3-3. CELP clearly shows what I have accomplished.	178	26 (15%)	101 (56%)	40 (22%)	10 (6%)	1 (1%)	3.79
	3-4. CELP offers adequate facilitated functions (such as	178	28 (16%)	104 (58%)	39 (22%)	5 (3%)	2 (1%)	3.85

	FAQ).						
	Facilitated design				3.81		
Information and interface design	4-1. The materials of CELP are clear.	178	38 (21%)	103 (58%)	30 (17%)	6 (3%)	1 (1%)	3.96
	4-2. The materials of CELP are good.	178	28 (16%)	101 (57%)	38 (21%)	10 (5%)	1 (1%)	3.81
	4-3. Multimedia of CELP enhances my interest in learning.	178	32 (17%)	83 (47%)	53 (30%)	8 (5%)	2 (1%)	3.76
	4-4. Multimedia of CELP facilitates my understanding of the materials.	178	32 (18%)	101 (57%)	38 (21%)	6 (3%)	1 (1%)	3.88
	4-5. Multimedia of CELP has been adequately used to support instruction.	178	29 (16%)	98 (55%)	45 (25%)	5 (3%)	1 (1%)	3.84
	4-6. The interface of CELP has an appropriate appearance.	178	34 (19%)	90 (51%)	46 (26%)	6 (3%)	2 (1%)	3.83
	4-7. The interface of CELP has appropriate content.	178	33 (19%)	90 (51%)	46 (26%)	8 (5%)	1 (1%)	3.82
	4-8. The interface of CELP has appropriate colors.	178	32 (18%)	84 (47%)	52 (29%)	9 (5%)	1 (1%)	3.77
	4-9. The interface has appropriately designed functions.	178	27 (15%)	86 (48%)	58 (33%)	6 (3%)	1 (1%)	3.74
	4-10. The interface of CELP has an appropriate layout.	178	30 (17%)	91 (51%)	50 (28%)	6 (3%)	1 (1%)	3.80
	4-11. Multimedia of CELP is convenient to use.	178	31 (17%)	91 (51%)	49 (28%)	6 (3%)	1 (1%)	3.81
	4-12. Multimedia of CELP is designed in a consistent way.	178	31 (17%)	97 (55%)	41 (23%)	8 (4%)	1 (1%)	3.84
	4-13. The browser tool is easy to recognize.	178	38 (21%)	91 (51%)	45 (25%)	3 (2%)	1 (1%)	3.91
	4-14. The browser tool is easy to operate.	178	43 (24%)	88 (49%)	41 (23%)	5 (3%)	1 (1%)	3.94
	4-15. I can select units to learn by myself.	178	51 (28%)	77 (43%)	41 (23%)	8 (5%)	1 (1%)	3.95
	4-16. I can adjust my learning pace and schedule by myself.	178	48 (27%)	79 (44%)	41 (23%)	8 (5%)	2 (1%)	3.92
	Interface design				3.86		
Learning assessment and feedback	5-1. CELP offers adequate opportunities for practice.	178	34 (19%)	96 (54%)	40 (22%)	7 (4%)	1 (1%)	3.87
	5-2. CELP allows me to understand my learning progress and outcomes.	178	31 (17%)	101 (57%)	37 (21%)	8 (4%)	1 (1%)	3.86
	5-3. The practice activities of CELP conform to the instructional goals.	178	36 (20%)	99 (55%)	37 (21%)	5 (3%)	1 (1%)	3.92
	5-4. CELP provides adequate problems for learning assessment.	178	28 (15%)	100 (56%)	37 (21%)	12 (7%)	1 (1%)	3.80
	5-5. CELP provides sufficient feedback.	178	30 (17%)	93 (52%)	39 (22%)	15 (8%)	1 (1%)	3.76
	Learning assessment and feedback				3.84		
Total				3.88			

Factors Causing the Gap between Intention to Use CELP and Actual Usage

Previous studies have identified many critical factors that may influence a learner's decision to withdraw from e-learning, including retention, motivation, and satisfaction (Alexander, 2001; Bonk, 2001; Packham *et al.*, 2004; Luor *et al.*, 2009). In this study, despite the strong intentions of learners to use CELP, low actual usage of

CELP still commonly occurred. It is suggested that factors important to the success of CELP within an environment can be grouped into four categories: IT, instructor, learner, and institution support (Selim, 2007; Luor *et al.*, 2009). The nine factors summarized in this study may contribute to the difference between intention and actual usage: (1) motivation: motivation is important to future usage (Alexander, 2001; Bonk, 2001); (2) intimidation: learners are less likely to use e-learning spontaneously when intimidation appears (Soong *et al.*, 2001); (3) enjoyment: enjoyment is related with learner intention to use e-learning (Soong et al., 2001; Luor *et al.*, 2009); (4) scheduling: scheduling is important to whether or not learners can use e-learning (Masoumi, 2006); (5) usefulness: job-relevance and the usefulness of course content seem to be critical incentives for learners (Welsh *et al.*, 2003) ; (6) technical problems: technical problems can detract from learner actual usage of e-learning (Packham *et al.*, 2004; Féraud, 2005; Luor *et al.*, 2009); (7) problem-solving abilities: improving problem-solving is the key to motivate learner usage of e-learning (Masoumi, 2006); (8) performance: expecting improvements in performance can influence the future usage of CELP (Soong et al., 2001; Masoumi, 2006); and (9) management support: management support is the key to learner usage of e-learning (Féraud, 2005; Luor *et al.*, 2009).

A nine-item scale was used to determine whether the HH group and the HL group differed in their perceptions of the nine factors causing the gap between INT and AUD. Each item was also measured using a 5-point Likert-type scale ranging from 1 to 5 (strongly disagree to strongly agree). The results show that the two groups differed with regard to scheduling, as in Table 5. It can be inferred that scheduling is the critical factor influencing actual usage duration. Moreover, scheduling is the most likely reason not to support the proposed relationships among AUD/AUF, UT, SAT, and AR.

Table 5. Descriptive data and t-test between HH group and HL group

Factors	HH	HL	t-value
Motivation (The firm encourages me to use CELP)	3.76 (.52)	3.72 (.83)	1.81
Intimidation (I feel intimidated to use CELP)	1.95 (.63)	1.98 (.92)	-1.73
Enjoyment (I enjoy using CELP)	3.70 (.67)	3.67 (.58)	1.72
Scheduling (I have adequate time to use CELP)	3.85 (.97)	2.97 (.75)	2.94**
Usefulness (CELP provides me useful courses)	4.15 (.87)	3.98 (.76)	1.84
Technical problems (I have technical problems to use CELP)	2.43 (.57)	2.41 (.61)	1.73
Problem-solving abilities (Using CELP can improve my problem -solving abilities)	3.69 (.68)	3.72 (.52)	1.75
Performance (Using CELP can improve my performance)	3.86 (.52)	3.84 (.67)	1.65
Management Support (I use CELP because of management support)	3.46 (.72)	3.42 (.75)	1.71

** $p < .05$

DISCUSSION
Based on the related literature, the proposed framework of learner intention, actual usage, utility, satisfaction, and affective reaction to CELP was examined. The results confirm some of the proposed hypotheses but deny most of them. The findings in this study demonstrate that learner intention to use CELP (INT) is positively related to log-in frequency (AUF). On the other hand, surprisingly, INT is not related to learner review duration (AUD), suggesting that there is really a gap between INT and AUD. Based on the literature review and questionnaire conducted in this study, one critical factor leads to this gap: scheduling, which was also proposed by Masoumi (2006). It is known that the higher the learner intention to use CELP, the more frequently learners will log in. However, due to scheduling difficulties, learners do not always have adequate time to review the content of CELP. The issue of scheduling mirrors many possible barriers that may stop employees from using CELP. In response to this topic, this study agrees with the opinion of Hwang, Chang and Chen (2004) to block some periods for study to ensure employees have enough time to use CELP in the practical workplace. Another possible solution to this problem is to have employees participate in CELP at home. Furthermore, it is known that only learners who have good scheduling skills frequently spend time using CELPs and benefit from them.

Another surprising finding is that actual usage of CELP is not positively related to UT, SAT or AR, regardless of AUF or AUD, suggesting that when employees try to use CELP, they generally do not have a positive reaction to the CELP. However, according to the formative evaluation of CELP by learners conducted in this study, the percentage of strongly agree and agree adequately explained that most of the learners had a positive attitude toward CELP for learning content and structure, learning strategies, facilitated design, information and interface design, learning assessment and aspects of feedback. A reasonable inference may be that many learners do not have adequate time to carefully review the CELP. In this case, they seldom had specific attitudes or reactions to CELP. In summary, the findings in this study echo those in previous studies, such that only when learners have both motivation and necessary e-learning abilities will they recognize the implementation of CELP as a positive change (Stricker et al., 2011). In addition, based on the formative evaluation of CELP, it can be inferred that CELP increases learner motivation to engage in the program. This suggests that CELP constitutes an organizational intervention that is worthy of promotion.

The variables adopted in this study were based on the previous literature (Fishbein & Ajzen, 1975; Ajzen, 1991; Brown, 2005; Liaw, Huang, & Chen, 2007; Luor *et al*., 2009; Stricker *et al*., 2011; Weibel *et al*., 2012). Previous research has provided evidence that learners in an e-learning setting outperform their counterparts in traditional learning environments (Shachar & Neumann, 2010; Weibel *et al*., 2011; Stricker *et al*., 2011). However, few studies have explored how different factors influence actual usage and reactions to CELP in the practical workplace.The present study developed and tested the framework of INT, AUF, AUD, UT, SAT and AR in the accounting industry. This study verified the argument again proposed by Luor *et al*. (2009) that a gap actually exists between learner intention and actual usage. In addition, the study further finds out that the learner INT is correlated with AUF, suggesting that learner intention to CELP is positively related to their log-in frequency. A follow-up survey also indicates that scheduling is the critical factor leading to differences in AUD in the accounting industry. Future researchers would be suggested to look for other factors to forecast the behavior of learner intention and following behavior. Furthermore, future researchers should determine whether other variables, such as goal orientation and organization atmosphere (Luor *et al*., 2009; Orvis *et al*., 2009), destroy the relationships among INT, AUD, UT, SAT, and AR.

Finally, this study has some limitations. The results may be of somewhat limited with regard to external validity because the participants comprised the employees of an accounting firm in Taiwan. One must keep in mind that the relationship of learner intention, and their log-in frequency was limited to Taiwan-based participants; thus, readers should be aware of geographic limits. Moreover, additional analysis for other e-learning courses should be conducted to draw conclusions regarding the framework proposed in this study. Finally, the performance of participants, such as achievements using training material, has not been evaluated yet; however, efforts are currently underway to obtain this kind of "hard" data in follow up study.

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