

Current use of e-learning in the accounting industry

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ABSTRACT: Many enterprises still have insufficient understanding of e-learning. Their knowledge of e-learning is limited to the construction of a learning platform, and acquisition and production of learning materials. As a result, even if they have invested a huge amount of funds into building an e-learning environment, they still cannot obtain immediate results and may, thus, abandon the established environment. In-depth interviews for this study were conducted at two international accounting firms in Taiwan and ten conclusions are summarised in exploration of the current use of e-learning in the accounting industry.

INTRODUCTION

To maintain competitiveness, enterprises usually invest substantial funds into the education and training of human resources [1]. Among the various media for education and training, e-learning has gradually become a dominant channel that is relied on to deliver knowledge and techniques to employees [2][3]. According to Welsh et al, the *digital revolution* is driven by technological advancements [3]. Applying technology to education and training has multiple benefits. Through synchronous and asynchronous communication and learning methods, learners are enabled to learn in the way and at a pace they prefer and to engage in group discussion [4][5]. Synchronous but non face-to-face communication avoids unpleasant events that may occur during face-to-face interactions [6], and asynchronous communication provides opportunities for contemplation [6][7]. Bonk pointed out that integrating new technologies into education and training can increase learning effectiveness in an e-learning context [8]. Therefore, enterprises can use e-learning to increase their training effectiveness and return on investment in training [9][10].

A report released through Learning Circuits and E-learning News suggested that business employees constitute the majority (73.2%) of e-learning users [11]. This figure reveals that most businesses attempt to maintain their core competencies through low-cost, convenient and flexible e-learning mechanisms. It also implies that development of e-learning strategies should be focused on corporate employees first. Luor used 30 keywords to explore papers on Computer-Assisted Learning (CAL) among 71 Social Science Citation Index (SSCI)-grade journals published between 1998 and Feb 2006 [12]. Among the 536 papers, only 7 were related to corporate e-learning (2.2%), suggesting that academic efforts on corporate e-learning are still insufficient.

If corporate e-learning is so important why has it not been extensively studied? One main reason is that the introduction of e-learning involves a wide array of issues, including learning theories, curriculum development, performance evaluation, human resource development strategies and even integration of knowledge management and human resource education. Roblyer said that educational technology is not simply a medium for disseminating learning materials but a set of teaching methods that should be carefully designed to meet learner demands [13]. Academia and practice should, thus, work together to build a foundation for application of education technology.

Business organisations are under tremendous competitive pressure to improve service quality and administrative efficiency [14]. Many of them have developed e-learning courses that can be offered via the Internet and personal computers to help their employees to flexibly acquire new knowledge and enhance their competencies to satisfy customer needs [15]. The population of e-learning users in the US exceeded 3.5 million in 2007 [16]. This population is still growing at an annual growth rate of 21.5% [16]. For businesses, more dedication from the academic field is urgently needed. They need researchers' assistance in developing industry demand-oriented e-learning courses.

Nonetheless, before academic researchers begin to offer their assistance, they must understand the current conditions of, and difficulties in, implementing corporate e-learning, which is also the aim in this article.

A 2008 report released by PricewaterhouseCoopers (PwC), one of the world's largest accounting firms, showed that despite the global economic slowdown, PwC generated revenue exceeding US\$28.2 billion in 2008, a 14% growth from the previous year [17]. These statistics indicated that accounting services are an important part of business. Hence, the current conditions of, and difficulties in, implementing e-learning in the accounting industry was investigated in this study.

METHODOLOGY

Thanks to the assistance of two international accounting offices in Taiwan, the in-depth interview method was adopted in this study. The two international accounting offices, which offered assistance to this study, are among the top four accounting offices in Taiwan. They have branches in northern, central and southern Taiwan.

The reason for conducting in-depth interviews was to extract participants' personal experiences and viewpoints. The semi-structured interview method was adopted. Based on the evaluation models proposed by Kirkpatrick, Phillips, and Chung and Yang [18-22], a tentative interview guide was developed for each type of subject, namely CPA (leaders), directors of human resource and training development (e-learning managers) and auditors (e-learners). Later, three accounting experts and two e-learning experts were invited to review and finalise the interview guide to improve the content validity of interview questions. A three-point Likert's scale was applied to each question. The three-point Likert's scale included 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*.

Essentially, 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. Five undergraduate accounting students were invited to examine which items were unclear. Each item was assessed by a three-point Likert's scale. The three-point Likert's scale included 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 with a B-point were revised the items with a C-point were kept for the interview. The interview with 3 leaders, 7 e-learning managers and 10 e-learners from the two accounting offices was conducted between October and December of 2009. A summary of the basic data of the participants is provided in Table 1.

Table 1: A summary of respondents' basic data.

Type of subjects	Code	Sex	Age	Length of service (year)	Education	Certificate
CPA (leader)	11A	Male	42	15	MA	R.O.C. CPA
	11B	Male	39	15	BA	R.O.C. CPA
	21A	Male	38	14	MA	R.O.C. CPA, AICPA CPA, CIA
Directors of education and training (e-learning managers)	12A	Female	44	17.5	MA	
	12B	Female	36	12.5	MA	
	12C	Female	32	3.5	MA	
	22A	Female	36	14	BA	R.O.C. CPA
	22B	Female	32	10	BA	R.O.C. CPA
	22C	Male	34	10	MA	
	22D	Female	32	10	BA	
Auditors (e-learners)	13A	Male	28	1.2	MA	R.O.C. CPA
	13B	Male	32	4	MA	R.O.C. CPA
	13C	Male	35	7	MA	R.O.C. CPA
	13D	Female	38	8	BA	
	13E	Female	35	12	BA	
	23A	Female	25	0.2	MA	AICPA CPA
	23B	Female	27	4	BA	
	23C	Male	25	3	BA	R.O.C. CPA
	23D	Female	27	4	BA	
	23E	Male	34	10	BA	R.O.C. CPA

Before the interview, all participants received a copy of the interview guide via email. Interviews with leaders and e-learners were carried out according to the one-to-one approach. Because the tasks handled by e-learning managers were wide and highly specific, the one-to-many approach was adopted to obtain more comprehensive data from them at one time. During the interview, the participants were led according to their responses to extract more in-depth opinions. As well, various tips were followed on processing qualitative data [23][24], including: 1) record the interview under consent of the participant and transcribe the taped results; 2) encourage participants to use their own language or ways they can better express themselves; 3) organise the interview records and notes within 24 hours after the interview; and

4) carefully read the transcribed script and confirm with the participant via phone or email if any section is unclear. These tips helped to enhance the reliability of the collected data. The tasks of auditors are highly professional. It was inevitable that they used jargon during the interviews. Because the researcher was once a practitioner of accounting and also holds a degree in accounting, no problem existed in communicating with the respondents during the interviews and could reduce much obstruction caused by this type of problem. Through in-depth interview with leaders, e-learning managers and e-learners respectively, this study not only produced a profound understanding of the background, features, promotion and difficulties regarding the development of e-learning in this industry, but it also examined whether their views are consistent (or in conflict).

RESULTS

Basic Data of the Participants

The demographic variables of the participants were as follows. Female and male participants were in almost equal proportion. Most were in the age group 30 to 39 (65%). In terms of length of service, those having 10-year (55%) and 3- to 5-year (30%) experience constitute the majority. The proportions of participants having a BA degree and a MA degree as the highest degree are equal. As well, more than half of them (55%) hold a professional certificate(s) in accounting.

In-Depth Interview Results

Through in-depth interview, 10 conclusions were reached as to the current use of e-learning in the accounting industry. The interview results are presented in the following fashion. Participants' responses are in italics and a specific notation is used to indicate who provided the response to which question and when, and where it is located in the transcript. For instance, 2009-10-05-11A-01-01 denotes *the first paragraph of response to the first question provided by respondent coded 11A on October 5, 2009.*

1. The e-learning courses are mainly dominated by foreign developers; e-learning resources are globally shared but devoid of local features.

In international accounting offices, education and training is usually provided in three ways, including face-to-face instruction, e-learning and on-job training (2009-12-07-11D-03-02). However, on-job training has always been the dominant approach, and face-to-face instruction and e-learning are used only as supplementary measures. Due to advancement of technology and cost considerations, the two accounting offices began development of e-learning courses in 2002. As this task requires professional human resources and techniques, their e-learning courses are mainly produced and dominated by their overseas headquarters (global HQ) and shared with global branches at some cost. Therefore, the e-learning courses adopted by the two accounting offices are globally consistent but devoid of local features.

Most of the available online courses are provided by the global (headquarters) and what we have now are mostly face-to-face instructions (2009-10-16-22A-23-05).

The e-learning materials are globally shared via a global platform (2009-10-16-22C-02-07).

Most of the available e-learning courses have been developed by our US firm (2009-10-16-21A-02-03).

Most of the e-learning content has been designed by the global HQ (2009-12-07-11A-02-05).

The global HQ has a special research and development centre dedicated to designing e-learning courses for auditors, and these materials have been unified for all global branches (2009-10-16-21A-06-01).

The global HQ has designed e-learning courses for all levels of auditors and we, as a local branch, have made less effort in such aspect (2009-10-16-22A-07-02).

We purchase e-learning courses from the global HQ (2009-10-16-22C-09-01)... we have spent about NT\$3 million on buying the license for use of the platform, software, and courses (2009-10-16-22C-09-02).

None of the existing e-learning courses have been tailor-made for Taiwan (2009-10-05-13B-14-03).

What the global HQ offers cannot be integrated into our practice (2009-10-16-23B-03-01).

I hope that e-learning materials can be more related to our life (2009-10-05-13A-13-01).

I hope that lessons on local subjects, such as Statements of Auditing Standards and tax affairs, can be increased and provided in Chinese. I may not carefully go through all the lessons in English (2009-10-16-23A-13-01).

I hope that e-learning courses on domestic regulations can be provided (2009-10-16-23C-13-01).

2. The e-learning courses are charged at a flat rate or a floating rate.

Through the interview, it was found that all the e-learning courses currently used by the two accounting offices have been produced and dominated by their overseas headquarters. These courses can be purchased at a flat rate or a floating rate.

Our company can choose to directly purchase certain courses or purchase an amount of quota. We will evaluate the number and performance of members who took the courses in the previous year. The global HQ will then advise us an adequate amount of hit-count to purchase based on our evaluation result (2009-10-26-12A-11-03).

The cost of courses depends on the number of staff and business revenue of the member office (2009-10-16-22C-02-11).

3. Almost all the e-learning courses are in English.

As production of e-learning courses is mainly dominated by the overseas headquarters, the courses are mostly in English and not easy to grasp for learners without a good command of English.

One of the main features of the e-learning courses is that they are offered in English (2009-10-05-13C-02-02).

The e-learning courses are in English (2009-10-05-13D-14-02, 2009-10-05-13E-14-01, 2009-10-26-12A-08-01).

The drawback of the e-learning courses is that they are in English (2009-10-16-23B-14-01).

The e-learning courses are in English ... almost all of them come from the US headquarters (2009-10-16-21A-07-01).

4. The e-learning courses are diverse, including professional and non-professional content.

The global HQ provides a high diversity of e-learning courses covering job-related and non job-related topics. Because their coverage is too broad, it is not easy for learners to know which courses to leave out.

The accounting office offers multiple courses to auditors whether they are job related or not (2009-10-05-13A-03-01).

The e-learning courses include IFRS (2009-10-05-13B-06-01)... risk control, tax affairs, legal amendment, new standards, communication, and interview skills (2009-10-05-13B-06-03).

The e-learning content covers professional accounting (IFRS, US GAAP), auditing skills, ASII e-learning, computer information, occupational norms, and management (2009-10-16-21A-05-01).

5. The courses can be divided into elective and mandatory and learners take mainly the mandatory.

Due to the abundance of e-learning courses provided by the global HQ, the education and training department has set up a list of courses for each level of auditors, requiring all auditors to complete the courses within a specific period of time. Other non-listed courses are only elective and non-mandatory. Under such requirement, all learners tend to take mandatory courses first and elective courses become unpopular.

There are mandatory and elective e-learning courses (2009-10-16-22B-07-03).

I feel satisfied enough if I can go through all required courses just once (2009-10-05-13D-15-03).

I'll definitely go through the required courses (2009-10-05-13E-15-01) and not elective ones (2009-10-05-13E-15-02).

I'll definitely finish all mandatory courses but I am not sure if I can be very engaged in each of them (2009-10-16-23B-15-01).

Most of the courses I have taken are more professional and only a few of them are elective (2009-10-16-23E-15-02).

I'll complete the required courses within the specified time and have no strong intention to take elective ones (2009-10-16-22D-16-01).

I take only required courses to earn 5-10 credits (2009-12-07-11D-15-01).

6. Teaching strategies may not have been considered in the design of the current e-learning courses, but an internal evaluation has been conducted for each course.

Local branches were not sure if their global headquarters considered instructional strategies when designing the e-learning courses but were very sure that they had followed a certain evaluation procedure.

Some e-learning courses were designed with consideration of instructional strategies, but most of them were not (2007-12-07-11D-10-01)... I am not sure if they had experts review the materials (2009-12-07-11D-10-04).

I think they invited only internal experts to review the learning materials (2009-10-16-22C-11-03).

The global HQ has an e-learning content user group. Members of this group will meet on a regular basis to evaluate and exchange opinions on new materials (2009-10-26-12A-11-07).

Each e-learning course begins with an introduction of its goals (2009-12-07-11A-10-02)... I think the materials have been reviewed by internal experts of the global HQ (2009-12-07-11A-10-06).

7. Learners' time for e-learning has been reduced by their high workload.

The mandatory courses for learners will cause much pressure on learners, as they are already heavily loaded with regular tasks.

As far as the load of e-learning courses is concerned, understanding learning materials in a foreign language is really effort-taking (2009-10-16-23E-08-04).

Learners are always very busy. They usually play the e-learning contents in the background of their work. If time permits, they will pay more attention to the contents and their learning outcomes will be good (2009-10-05-13E-14-01).

8. Due to cost considerations, e-learning is becoming more dominant.

As mentioned earlier, corporate employees are the majority (73.2%) of e-learning users (Learning Circuits & E-learning News, 2008). It is inferred that all businesses expect to retain and deliver their core competencies through a low-cost,

efficient and flexible e-learning method. The interview results also suggest e-learning is a dominant learning method adopted by the two accounting offices, given cost considerations.

E-learning is a global trend. It allows us to learn at any time and from anywhere (2009-10-16-21A-09-01).

The cost of running a classroom course is high enough. E-learning is cost-saving (2009-10-26-12A-24-01).

Because e-learning materials can be reused, our accounting office can save a lot of expenditure on employee education (2009-10-26-12A-24-01).

Some courses deliver only simple concepts. Our company managers think these courses can be provided via e-learning to save costs. Classroom courses can be offered after all the learners have acquired the simple concepts (2009-10-16-22C-35-02).

The function of e-learning is to save costs. Some basic courses are not worth the investment of a large amount of human resources. Human resources should be used for important discussion courses (2009-12-07-11A-14-02).

Under consideration of time and space constraints, our company has gradually increased courses to be provided via e-learning and reduced the courses to be provided in the physical environment (2009-10-16-21A-33-02).

I can feel that our company is moving toward e-learning (2009-10-16-23E-02-02).

The ratio of e-learning courses is on the increase (2009-12-07-11D-02-05).

9. Blended learning is a trend in education and training.

The interview results indicate that mixed use of e-learning and physical learning courses is a trend in education and training among accounting offices.

Blended learning is a trend of e-learning. The ratio of each type of courses to be blended may vary from one course to another (2009-10-16-22C-35-01).

The future e-learning will be a mix of e-learning and classroom learning, which is also called blended learning (2009-10-26-12A-24-01).

In the future, e-learning will be an important learning aid (2009-12-07-11A-33-17) ... The content should be designed to be interesting (2009-12-07-11A-33-18).

In the future, preview and review of learning materials will be performed on e-learning platforms, and only practical operations and discussions will be conducted in the physical learning environment (2009-10-16-22C-35-02).

10. Effectiveness of e-learning is recognised by leaders and e-learning managers but proper performance evaluation mechanisms are still unavailable.

In the interview, all leaders and e-learning managers recognised the effectiveness of e-learning but pointed out that no proper evaluation mechanism is available for validating the effectiveness of e-learning.

I think that e-learning can help our accounting office attain its expected growth (2009-10-16-21A-27-01, 2009-12-07-11A-27-01).

Learners can certainly improve their skills if they are engaged in e-learning. So far, the effectiveness of e-learning cannot be properly measured, because learners' identity cannot be validated and some members may try the test without learning the content first (2009-10-16-22A-19-01).

The effectiveness of e-learning is hard to measure (2009-10-16-21A-22-01).

Several difficulties may be encountered in the development of e-learning courses ... the efficiency cannot be measured (2009-10-16-22A-21-03).

The benefits of e-learning can be measured by cost reduction and expenditure (2009-10-16-22A-24-01).

The benefits of e-learning are not easy to evaluate. They depend on whether learners can apply what they have learned in practice (2009-12-07-11D-22-02).

Cost should be considered in the evaluation of e-learning effectiveness. In reality, e-learning effectiveness is hard to evaluate (2009-12-07-11A-22-02).

E-learning benefits acquisition of knowledge and development of competitiveness. However, its effects on the revenue are hard to estimate and quantify (2009-10-26-12A-20-01).

CONCLUSIONS

With the advancement of computer technology and multimedia technology, all industries have gradually increased their investment in e-learning. However, development of e-learning courses requires considerations across multiple aspects. Introduction of e-learning involves learning theories, curriculum development, effectiveness evaluation, human resource development strategies, organisational culture and management, and even integration of knowledge management and human resource education, all of which should be investigated and planned in advance.

Through in-depth investigation into current use of e-learning in two international accounting offices, the author found that despite extensive implementation of e-learning in these two accounting offices, their members sometimes felt discouraged and obstructed in e-learning because the courses developed mainly by their overseas headquarters are mostly in English and inconsistencies exist between the courses and local regulations or standards. As mentioned by

Choi and Hannafin, knowledge becomes meaningful only when it can be explained in real contexts and learning activities where it is generated or applied [25]. In other words, meaningful knowledge should be acquired from practical tasks and this means the *practical field* where employees are involved [26]. At present, although the two international accounting offices' adoption of e-learning conforms to the trend of globalisation, their e-learning courses are not entirely compatible with local regulations or standards and also lack local features. They should manage to solve this weakness so as to offer more meaningful learning experiences to their employees and allow them to cope with daily tasks in a more efficient manner. As well, although effectiveness of e-learning is widely recognised, it cannot be properly measured. This is also a problem that the accounting offices are faced with.

ACKNOWLEDGEMENTS

This study was funded by the National Science Council in Taiwan under the contract number NSC 98-2511-S-328 -001. Special appreciation must be given to the subjects who participated in this study, the experts who provided professional opinions and the project assistant, Chua-Hua Liu for data collection and summary in this study.

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