

Web-based design model for situated learning in accounting education

CHENG KAI-WEN

Airline and Transport Service Management Department
National Kaohsiung University of Hospitality and Tourism
No.1, Songhe Rd., Xiaogang Dist., Kaohsiung City 81271
TAIWAN
kevin1188@mail.nkuht.edu.tw

Abstract: - This study proposed an innovative model- NGCE-for the design of materials for situated learning in a web-based environment. This model assists industry professionals and instructors to construct a cost-effective e-learning tool capable of enhancing the core technical skills of accounting personnel and students. In brief, building an innovative model for the industry-oriented situated learning in a web-based environment is the most important contribution in this study.

Key-Words: - Accounting, Accounting Education, ADDIE, E-learning, NGCE, Web-based environment

1 Background

Progress in information technology has led to a steady increase in the application of the internet to the field of education [1]. The internet enables multiple synchronized and desynchronized communication channels and learning methods, from which learners can make selections according to their preferences [2][3]. Jonassen (1999) stated that in terms of the current education environment, it is not possible to completely replace the conventional classroom with a web-based teaching environment; however, it is inevitable that information technology will be applied as a learning aid to increase the quality of instruction [4]. Roblyer (2004) pointed out that teaching technology should not be viewed merely as a medium for the dissemination of educational materials but as a teaching approach that gives careful consideration to the needs of students [5]. Lewis, Treves, and Shaindlin (1997) indicated that applying teaching technology is the most effective method of helping students to communicate and express their thoughts [6]. This shows the importance of using internet technology to help student think and communicate as well as the need to design appropriate online learning materials and learning environments.

Information technology has profoundly altered the enterprise ecosystem and increased the complexity of the accounting industry [7]. A number of studies have indicated the need to reconsider the role of personnel in accounting and the knowledge and skills they require [7][8][9][10]. However, accounting education has failed to adapt to the external environment in the last few decades [9][10][11][12]. Chuang (2005) observed that most teachers and practitioners in accounting support reforms in accounting education [13]. Xiao, Chow,

and Duh (2006) also advocated change in accounting education from supply driven to demand driven. In other words, the demands of the industry must be taken into account in accounting education to prevent wasting education-related resources and achieve the objectives of accounting education [14]. Schon (1987) asserted that a large portion of the knowledge, skills, trade conventions, and terminology in a profession cannot be completely described by literal or verbal means [15]. To learn a profession and gain expertise, one must personally observe and participate as an apprentice in professional situations. This is the basic concept behind situated learning. Jebeile and Abeysekera (2010) suggested that computers be applied to aid in accounting education to increase learning effectiveness [16].

In summary, this study developed an innovative web-based model to design materials for situated learning to enable students to fully perceive the important concepts related to accounting. The model, named NGCE (Need analysis, Goal and creative thinking, Case design, and Evaluation), creates multimedia learning materials in response to industry demand for application in a web-based environment. Learners can observe, participate, and interact in this environment to promote “knowing in action” and “reflection in action” in situated learning [15].

2 Literature review

The term situated learning was proposed by Brown, Collins, and Duguid (1989) [17]. Prior to this, however, Schon (1987) conducted a study on the learning modes of specialized practitioners that already proposed the concepts behind situated

learning [15]. Suchman (1987) discovered that few people read instruction manuals before handling new machinery, referring to the manual or ask more experienced users for assistance only when they encounter difficulties [18]. Thus, the concept of situated action was proposed to emphasize that if knowledge deviated from the context of use, learning would become a game using abstract symbols [19]. In a study on learning in everyday activities, Lave and Wenger (1991) discovered that individuals in some occupations (such as butchers, midwives, and tailors) begin as apprentices, do not receive comprehensive education or training like experts do, and do not think or act in any way like theory-dependent students do [20]. Nevertheless, they can still give satisfactory performance in the face of complicated professional challenges, learn the tricks of their trade, and understand how to use environmental resources to solve unfamiliar problems. This demonstrates that knowledge is like a tool that is generated through interaction with the environment and is essentially influenced by activities and cultural context [17]. The primary concepts related to situated learning are as follows:

2.1 Knowledge is rooted in context, and learners can only acquire knowledge by participating in the activities of life situations.

Driscoll (1999) claimed that all knowledge is the product of scenario activities [21]. Miller (2008) supported this contention in an investigation on vocabulary teaching; under the assumption that knowing and doing are two different things, he examined the learning of vocabulary, while neglecting situated life [22]. His results showed that teenagers at around 17 in age can learn roughly 5000 words a year (13 words a day, on average) in their daily lives through listening, conversing, and reading. In contrast, out of the normal environment in which a language is used, learning vocabulary via dictionaries or abstract classroom definitions is extremely inefficient; only 100 to 200 words may be actually learned in a year. What is worse is that the learner may have difficulty effectively using these words in a practical situation. As for other domains, such as the learning of physics [23] or the cultivation of problem solving skills in math [24], researchers have consistently concluded that the meaning of knowledge must be conveyed through the context of usage.

2.2 Knowledge must be used to be understood.

In addition to possessing situational characteristics, knowledge is gradually accumulated through authentic activities [17]. Knowledge shares many of the features of tools, and to completely understand them, one must use them. In other words, instruction must emphasize active operation and exploration. Teaching content should be drawn from real life; otherwise, the students may become proficient in learning abstract formulas or passing complicated and difficult exams but remain helpless in real situations.

2.3 Learning is a process of enculturation; instruction should provide comprehensive examples as well as opportunities to use the knowledge in real-life scenarios.

In a sense, students are like apprentices; when they learn a subject in school, they must enter a specific community and seize opportunities to use the conceptual tool of subject knowledge in authentic activities, such as learning arithmetic and categorizing while shopping in a supermarket. Although these processes lack formality, they provide opportunities to integrate knowledge that cannot be achieved through textbook examples or verbal explanations. In conclusion, a closely dependent relationship exists among knowledge, activities, and culture and instruction must take these elements into account. Unfortunately, current scholastic education views abstract concepts as good principles; textbooks only provide classic examples that lack cultural insight and the content of authentic activities [17].

2.4 Knowledge is socially shared and distributed and assists heterogeneous groups in forming the zone of proximal development.

Vygotsky (1978) divided cognitive development into two levels: the real level of development and the potential level of development [25]. The former refers to the level of problem solving that an individual can perform independently; the latter refers to the level of problem solving that an individual can perform with the help or collaboration of others. The zone of proximal development (ZPD) is the distance between the two levels, which can otherwise be described as the difference between what an individual can do

without help and what he/she can do with help. This draws attention to the importance of the learning community, in which interaction helps students to develop their problem-solving skills.

2.5 Learning should begin from peripheral participation. Teachers should make use of storytelling to place students in the cultural context and generate meaningful learning through dialogues.

Resnick (1988) stated that the majority of learning among humans is achieved through cooperative efforts [26]. Lave and Wenger (1991) further agreed with Resnick that learning begins with peripheral participation and observation [20]. Moore et al. (1994) argued that while situated learning attaches considerable importance to the authenticity of learning activities, it does not imply that extracurricular activities are more effective than classroom teaching [27]. Authentic instruction is when the content of the teaching activity accords with actual situations. Put differently, authentic activities involve matters that can be encountered in everyday life. Learning arithmetic in a supermarket and the process by which apprentices learn the skills of cooking are classic examples of authentic activities.

2.6 Teaching is the process of communicating knowledge. Educational technology can enrich the content of knowledge and broaden the depth of learning.

Conventional teaching activities are for the most part limited to oral recounts provided by instructors, and the content is generally over reliant on the static information in textbooks [28]. These monotonous methods of expression conflict with the nature of learners, leading to student-teacher conflicts that are oppose the ideals of education. In recent years, the continued development of technology has created a remedy for this predicament: multimedia. The animations and sound of multimedia enhance learning motivation and the interest of students. They also transform one-way communication channels into two-way interaction. Without a doubt, technology could play a crucial role in situated learning.

Clearly, the use of multimedia, peer interaction, and interpersonal development in a web-based environment can be used to construct context,

facilitate storytelling, and enable enculturation as well as form the ZPD in situated learning.

3 Web-based design model for materials for situated learning

Welsh et al. (2003) pointed out that in an e-learning environment; learners are more motivated to learn useful and job-related content [29]. If learners perceive that the content of the course is not essential or offers no benefits, their participation in the course will decline. To provide learners with more meaningful learning experiences and narrow the gap between what is being learned and what will be used, the systematic teaching design model, ADDIE (Analysis, Design, Development, Implementation, Evaluation), which was proposed by Banathy (1987) and Mannaz (1999) [30][31], was referred to in this study. The model was incorporated with the accounting needs of industry in the design of situated learning materials for each unit. Eight units with various dining venues to provide scenarios for multimedia presentations were designed. The compilation of e-learning content was accomplished as follows: Needs analysis, goals and creative thinking, case design, and evaluation of materials, referred to as NGCE. The details of each step are described in the following.

3.1 Needs analysis

The results of this analysis influence the direction of the instructional design and subsequent decision making; therefore, this step occupies a critical role in the instructional design process. In this study, analysis was conducted on three aspects: 1. Teaching situation; 2. Learners; and 3. Learning Tasks. Need analysis was based mostly on interviews.

3.1.1 Teaching situation

(1) Needs analysis

The objective of this analysis was to confirm the demand for accounting and the functions of accounting personnel in the industry. Through interviews, a deeper understanding of the functions of accounting in industry was gained. The interview subjects were four partners in accounting firms (industry experts), an accounting manager at a five-star hotel, and an accounting assistant manager in the financial industry. The industry analysis results are presented in Appendix 1.

(2) Learning environment analysis

This analysis involves media, resources, and limitations. The objective was to examine the media and resources available to the learners and the limitations that they are subject to before determining appropriate learning methods.

3.1.2 Learner analysis

This study employed semi-structured interviews with 15 students from three classes that had taken the Principles of Accounting, randomly recruited from a four-year university in Taiwan according to the Student Aspect (Input Aspect) proposed by Chow, Duh, and Xiao (2005) [32]. In the interviews, the students' needs and expectations in terms of accounting were explored. Based on the results of these interviews, the content of the materials for situated learning was designed and revised.

The results of the learner analysis are shown in Appendix 2.

3.1.3 Learning task analysis

The objective of task analysis was to reveal the duties and tasks of practitioners in the industry and identify the knowledge, skills, and attitude they require [33], [34]. This portion was included in the interviews in the needs analysis. Based on the results, the scenario themes were designed and the content of the situated learning materials was revised.

3.2 Goals and creative thinking

Once the needs analysis was completed, the results were compiled to establish learning objectives and the corresponding context scenarios.

From the perspective of situated learning, Schank (1996) stated that educational training can only arouse interest and ensure high motivation if it is goal-based [35]. Establishing goals ensure that learning remains on course. To provide learners with more meaningful learning experiences and narrow the gap between what is being learned and what will be used, authentic scenarios and possible workplace situations were simulated and devised based on the accounting requirements of industry. According to the interviews with industry experts and learners, the materials for situated learning were designed, focusing on the structure of financial statements including balance sheets, income statements, and cash flow statements, and accounting concepts such as accounts receivable,

fixed assets, inventory, intangible assets, corporate branding, sales revenue, sales returns, gross profit on sales, marginal profits, variable costs, fixed costs, breakeven, opportunity costs, cash flow, and balanced scorecards.

3.3 Case design

Once the goals and creative thinking process is completed, dialogues can be devised for the scenarios. The purpose of the scenario arrangement is to reinforce the impressions of the learners about the learning content, from which they can actively build their own knowledge [36]. Below are key points involved in applying the theory of situated learning to the process of design:

1. Use media to construct learning situations that are close to real life.
2. In terms of the roles in the teaching content, the learners should be the facilitator. The design of the teaching content should not simply instruct learners on how to use the course content but enable them to actively construct their own knowledge with the help of multimedia scenarios and situations.
3. Teach by using problems, and enable learners to learn through interaction to arouse interest. Thus, teaching should focus on the investigation of problems rather than direct lectures.
4. Key learning points should be presented using scenarios to attract the attention of learners. Plots related to accounting should be designed and the key points displayed using multimedia.
5. Learners undergo the process of coaching, scaffolding, reflection, articulation, and exploration.) Through the knowledge provided by multimedia materials and the guidance of teachers, learners can progress through coaching and scaffolding. Subsequent dialogues and multimedia reminders provided enable learners to complete the steps of reflection, articulation, and exploration in the situated learning.
6. Allow learners to set their own pace, and provide them with multiple opportunities to practice. Allowing students unlimited access to the teaching units and multimedia enables them to review the teaching content according to their individual learning needs.

An example of the unit teaching plans completed in this step is exhibited in Appendix 3.

3.4 Evaluation of materials

After designing the case scenarios and learning content, five experts specializing in accounting,

course design, and e-learning were invited to examine the results. Revisions were performed according to their suggestions. With the conclusion of material evaluation, eight units in our online materials for situated learning were developed: Accounting is implicit knowledge, Let's increase the efficiency of fixed assets, Why sea urchin sushi isn't profitable, Why there should be more late-night supermarkets, Why USD \$ 3.99 stir-fry restaurants make so much money, Why LV is so expensive, The one and only way to cut costs, and People are fundamental. The revised example as unit 3 is presented in Appendix 4.

The web-based design model for situated learning materials is as figure 1.

4 Conclusions

The internet allows learners to learn at their own pace and engage in group discussions without limitations of space or scheduling. Furthermore, e-learning has become an essential tool in the on-going development of professional knowledge and skills [37]. This study successfully proposed an innovative model- NGCE-for the design of materials for situated learning. This model assists industry professionals and instructors in the construction of cost-effective e-learning models capable of enhancing the core technical skills and the competitiveness of accounting personnel and students.

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References

- [1] Yeo, J., and Tan, S. C. How Groups Learn: Implications for Collaborative Work in Science. *The Asia-Pacific Education Researcher*, Vol.20, No.2, 2011, pp. 231-245.
- [2] Zurita, G., and Nussbaum, M. Computer supported collaborative learning using wirelessly interconnected handheld computers. *Computers & Education*, Vol.42, No.3, 2004, pp. 289-314.
- [3] Cavus, N., Uzunboylu, H., and Ibrahim, D. Student opinion towards using an open source learning management system together with a collaborative tool. *Cypriot Journal of Educational Sciences*, Vol.2, No.4, 2008, pp. 120-129.
- [4] Jonassen, D. H. Designing constructivist learning environment. In C. M. Reigeluth (Ed.), *Instructional design theories and models: A new paradigm of instructional theory*, Lawrence Erlbaum Associates, 1999, pp. 215-239.
- [5] Roblyer, M. D. *Integrating Educational Technology into Teaching*, Prentice-Hall, 2004.
- [6] Lewis, D. C., Treves, M. D., and Shaindlin, A. B. Making sense of academic cyberspace: Case study of an electronic classroom. *College Teaching*, Vol.45, 1997, pp. 96-100.
- [7] Celik, O., and Ecer, A. Efficiency in accounting education: Evidence from Turkish Universities. *Critical perspectives on Accounting*, Vol.20, 2009, pp. 614-634.
- [8] Kau, R., and Rans, D. L. They can add but can they communicate? *Business Forum*, Vol.18, 1993, pp. 24-26.
- [9] Albrecht, W. S., and Sack, R. J. Accounting education: Charting the course through a perilous future. *Accounting Education Series*, 16, 2000. Retrieve August 12, 2011, from <http://aaahq.org/pubs/AESv16/toc.htm>
- [10] Howieson, B. Accounting practice in the new millennium: Is accounting education ready to meet the challenge? *The British Accounting Review*, Vol.35, 2003, pp. 69-103.
- [11] Lin, Z. J., Xiong, X., and Liu, M. Knowledge base and skill development in accounting education: Evidence from China. *Journal of Accounting Education*, Vol.23, 2005, pp. 149-169.
- [12] Ay, M. Vocational higher school students' conceptual structures of accounting. *Procedia Social and Behavioral Sciences*, Vol.15, 2011, pp. 2181-2186.
- [13] Chuang, C. A. Changing Accounting Education: Integration with Business and Management Profession With Equal Emphasis on Practice. *Accounting Research Monthly*, Vol.237, 2005, pp. 28-35.
- [14] Xiao, Jason Z., Chow, C. W., and Duh, R. R. Study on Accounting Education in Taiwan, Part 4: The Gap Between the Knowledge and Skills of Accounting Graduates and Social Expectations. *Accounting Research Monthly*, Vol.242, 2006, pp. 74-82.

- [15] Schon, D. A. *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions*, Jossey-Bass, 1987.
- [16] Jebeile, S., and Abeysekera, I. The spread of ICT innovation in accounting education. *International Journal of Teaching and Learning in Higher Education*, Vol.22, No.2, 2010, pp. 158-168.
- [17] Brown, J. S., Collins, A., and Duguid, P. Situated cognition and the culture of learning. *Educational Researcher*, Vol.18, No.1, 1989, pp. 32-41.
- [18] Suchman, L. A. *Plans and situated actions: The problem of human-machine communication*, Cambridge University Press, 1987.
- [19] Chiou, G. F. *The Philosophy of Situated Learning and Computer-Assisted Learning: Investigation on the Concept of Learning Communities*, Sh-ta Books, 1996.
- [20] Lave, J., and Wenger, E. *Situated learning: Legitimate peripheral participation*, Cambridge University Press, 1991.
- [21] Driscoll, M. P. *Psychology of Learning for Instruction*, Allyn and Bacon, 1999.
- [22] Miller, L. How Learn Words. *Scientific American*, Vol.257, No.3, 2008, pp. 86-91
- [23] Aufshnaiter, S. V., and Welzel, M. *Learning processes in the field of electricity: Results of a cross age study*. Paper presented at the Annual Meeting of the American Educational Research Association, 1997.
- [24] Gelman, R. Toward an understanding-based theory of mathematics learning and instruction, or, in praise of Lampert on teaching multiplication. *Cognition and Instruction*, Vol.3, No.4, 1986, pp. 349-355.
- [25] Vygotsky, L. S. *Mind in society: the development of higher psychological processes*, Harvard University Press, 1978.
- [26] Resnick, L. Learning in school and out. *Educational Research*, Vol.16, 1988, pp. 13-20.
- [27] Moore, J. L., Lin, X., Schwartz, D. T., Campbell, O., Hmelo, C., and Cognitive and Technology Group at Vanderbilt. The relationship between situated cognition and anchored instruction: A response to Tripp. *Educational Technology*, Vol.34, No.10, 1994, pp. 28-32.
- [28] Jehng, J. C. Visual Thinking and Gaining Scientific Concepts: Design and Development of Computer-Assisted Visual Learning Environment. *Instructional Technology & Media*, Vol.33, 1997, pp. 20-27.
- [29] Welsh, E. T., Wanberg, C. R., Brown, K. G., and Simmering, M. J. E-learning: Emerging uses and future directions. *International Journal of Training and Development*, Vol.7, No.4, 2003, pp. 245-258.
- [30] Banathy, B. H. Instructional systems design. In R. M. Gagne (Ed.), *Instructional technology: Foundations*, Lawrence Erlbaum Associates, 1987, pp. 85-112
- [31] Mannaz, M. An expert teacher's thinking and teaching and instructional design models and principles: An Ethnographic study. *Educational Technology Research and Development*, Vol.46, No.2, 1999, pp.37-64.
- [32] Chow, C. W., Duh, R. R., and Xiao, Jason Z. Study on Accounting Education in Taiwan, Part 1: The Research Framework and Issues of Accounting Education. *Accounting Research Monthly*, Vol.238, 2005, pp.107-111.
- [33] Shyu, H. Y. A Preliminary Study on Development Models for e-Learning Courses. *Journal of Education Research*, Vol.116, 2003, pp. 15-30.
- [34] Shyu, H. Y. *Ministry of Education: Study Project on the Planning and Designing of Benchmark e-Learning Courses*, 2004. Dec. 1, 2008, source: <http://addie.et.tku.edu.tw/>
- [35] Schank, R. C. Goal-Based Scenarios: Case-Based Reasoning Meet Learning by Learning by doing. In D. Leake (Ed.), *Case-Based Reasoning: Experience, Lessons & Future Directions*, AAAI Press/The MIT Press, 1996.
- [36] Cunningham, P., and Iles, P. Managing learning climates in a financial services organization. *The Journal of Management Development*, Vol.21, No.5/6, 2002, pp. 477-492.
- [37] Cheng*, K. W. Enhancing Students' Business Creativity through Adoption of an Innovative Teaching Strategy in Taiwan. *Journal of Hospitality, Leisure, Sport and Tourism education*, Vol.10, No.2, 2011, pp. 109-120.

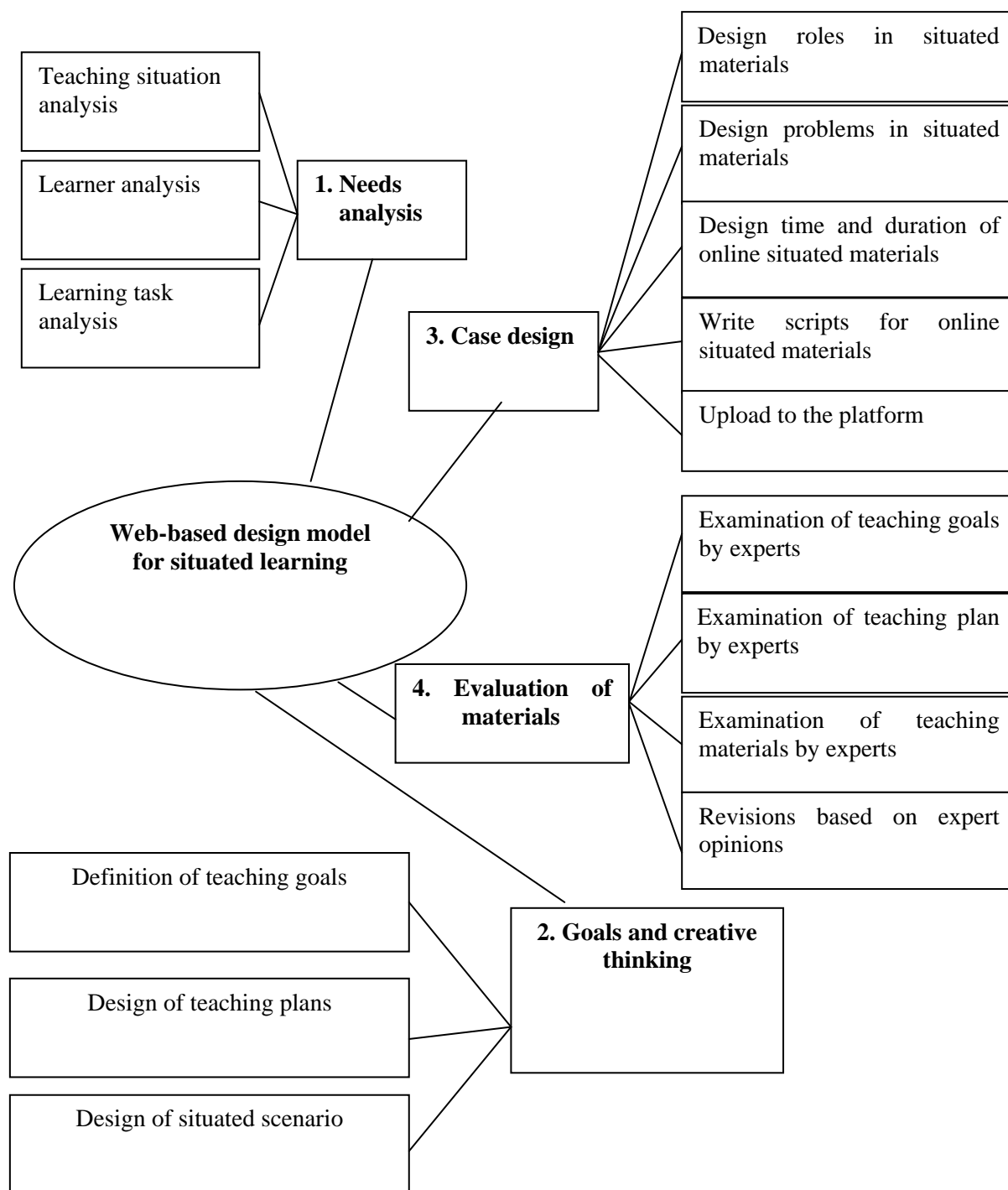


Fig.1 Web-based design model for situated-learning materials

Appendix 1 - Needs Analysis: Results of Industry Analysis

1. The function of accounting in companies.

Industrial Expert	Interview Results
A	In the past, only the figures in financial reports were needed; now, non-financial information must be provided as well.
B	Accounting can perform a number of functions, mainly, related to accounts and management. Now, however, accounting must integrate the resources from the other departments and analyze the information they provide before reporting to the boss for a more delicate decisions.
C	Accounting is mainly divided into financial accounting and management accounting. Management accounting is capable of creating increasingly and providing added value. Although financial accounting and management accounting both appear in my work duties, management accounting is without a doubt growing in proportion.
D	The current functions of accounting include the creation of financial statements before conducting performance evaluation (oriented toward bookkeeping) and the need for instant information that allows immediate decision making.
E	In addition to presenting financial status and business achievements, accounting provides external users with information related to investment decisions and the monitoring of implementations. The primary developmental focus is transferred to internal users and involves providing integrated information that bridges departments and management functions.
F	The primary function of accounting used to involve doing the books and filing tax returns. This is inclined towards the use of knowledge learned in financial accounting. However, this is gradually being replaced by computers, and clients now want us to provide suggestions on operations and management in addition to the numbers on the reports. Management accounting is therefore becoming increasingly important.

Background information on industrial experts:

Industrial Expert	Job Title
Ms. Li, accounting manager (A)	Accounting manager of five-star hospitality establishment
Mr. Wang, accounting assistant manager (B)	Accounting assistant manager of international finance company
Mr. Wang, CPA (C)	Partner accountant in one of the top five accounting firms in Taiwan (has experience in auditing in the hospitality and tourism industry)
Ms. Chou, CPA (D)	Partner accountant in one of the top five accounting firms in Taiwan
Mr. Lin, CPA (E)	Partner accountant at a medium-sized accounting firm
Mr. Lin, CPA(F)	Partner accountant at a small-sized accounting firm (The firm has only two partners, with experience in auditing in the hospitality and tourism industry).

Appendix 2 - Needs Analysis: Results of Learner Analysis

1. Learners' needs and expectations in terms of accounting

Learner	Class	Interview Results	Analysis Results
L1	C1	I didn't expect that I would need to memorize anything because when I studied in Hong Kong, they just tell you to crunch the numbers right away. They didn't teach so much. In tests, they give you problems, some numbers, and tell you to calculate this....You just calculate the answer or make a balance sheet or an income statement. You don't have to memorize much...	Less memorization (More utilization)
L2	C1	I learned business accounting, and that has less to do with management, which I want to learn more about...it might be more useful in the future.	The management aspect
L3	C1	I want to start from the basics. I studied accounting before, and I know about the circumstances, so I think going by procedure is better. And it would be better for other students, or else they might get confused once they get to the spreadsheets and stuff later.	Basic procedure
L4	C1	I don't really have any expectations. Just learn with everyone else, and as long as I can pass, it's fine!	None
L5	C1	At the least, you have to learn how to calculate and keep the books and stuff..	Bookkeeping
L6	C2	I want to be able to understand basic reports.	Basic financial statements
L7	C2	Bookkeeping, making statements, and such.	Bookkeeping, making statements
L8	C2	Concepts, I think! Like the meaning of the numbers, or the possible trend of the company...	Basic concepts, the management aspect
L9	C2	I want it to be more practical and not calculate things so much ...	The practical aspect
L10	C2	To learn as much as you can about this subject...So you can get information directly and know what it means or what other aspects it reflects...Sort of...the management and operation type of aspect.	The management aspect
L11	C3	Statements. I want to be able to understand them and analyze the information in them. I think being able to understand the statements is more important.	Financial statements, analysis of financial statements
L12	C3	I want to learn about the entire statement, the financial statements.	Financial statements
L13	C3	I think I want to learn about calculating more! Like how to really do the books for other people...	Bookkeeping
L14	C3	I want to learn things that we can use at work in the future.	The practical aspect
L15	C3	Learn how to do accounts. Right now, for example, I work part-time at a bank, where I need to calculate the totals of the day and use statements.	Bookkeeping, making statements

Note: L1 represents the first learner, L2 represents the second, and so on.

C1 indicates the first class, C2 represents the second class, and C3 indicates the third class.

Appendix 3 – Unit 3: Why Isn't Sea Urchin Sushi Profitable? – The Meaning of Cash Flow Management

Instruction Plan

Name of course	Why Isn't Sea Urchin Sushi Profitable? – The Meaning of Cash Flow Management	Duration of course	45 min
Suitable subjects	General students without basics in accounting	Content expert	Kevin Cheng
Learning objectives	<ul style="list-style-type: none"> ➤ Understanding the difference between profit and capital. ➤ Comparing the cash flow management for products in various models. 		
Course syllabus	Name of Chapter/Unit	Content of Theme Structure	
	Instructions for use (2 min)	<ul style="list-style-type: none"> ● Overview of how to use this course, including system detection, operation functions, and auxiliary tools. 	
	Course information (3 min)	<ul style="list-style-type: none"> ● Information related to the course, including suitable subjects, an introduction to the course, the objectives of the course, the duration of the course, and an introduction to the experts. 	
	1. The Difference Between Profit and Capital (10 min)		
	1.1 Unit objectives (5 min)	<p>Explanation with animation: Aiko and Mr. Awang have lunch at a sushi restaurant on Xinyi Road in Taipei. During their meal, Mr. Awang explains the difference between profit and capital using sea urchin sushi as an example.</p> <ul style="list-style-type: none"> ● The objective of this unit is as follows: Understanding the difference between profit and capital. 	
	1.2 The Difference Between Profit and Capital (3 min)	<ul style="list-style-type: none"> ● Mr. Awang uses sea urchin sushi and kohada sushi as a metaphor to explain the difference between profit and capital and further explains the rate of capital turnover. 	
1.3 Practice (2 min)	<ul style="list-style-type: none"> ● Using diverse question types such as true or false, multiple-choice, dragging, or matching (one or two questions), test the learning effectiveness of this unit. 		
2. Cash flow management for products in different models (20 min)			

	2.1 Unit objectives (2 min)	<ul style="list-style-type: none"> ● The objective of this unit is as follows: Comparing the cash flow management for products in different models.
	2.2 Cash flow management for commodities in different models (8 min)	<ul style="list-style-type: none"> ● Using pictures, Mr. Awang compares the cash flow management for products in different models.
	2.3 Calculation of cash flow management for commodities in different models (8 min)	<ul style="list-style-type: none"> ● Mr. Awang then uses tables to explain the calculation of cash flow management for products in different models
	2.4 Practice (2 min)	<ul style="list-style-type: none"> ● Using diverse question types such as true or false, dragging, or matching (one question), test the learning effectiveness of this unit.
	3. Course summary (10 min)	
	3.1 Terminology explanation (5 min)	<ul style="list-style-type: none"> ● Using animation, explain the professional terms that appear in the content of the unit.
	3.2 Post-course assessment (5 min)	<ul style="list-style-type: none"> ● Using diverse question types such as true or false, multiple-choice, dragging, or matching (approximately 5 questions), test the learning effectiveness of this course.
Learning Resources	<p>[Book References]</p> <ul style="list-style-type: none"> ● Shen, S. M. (1996). Practices in Food and Beverage Cost. Taipei: Chinese Food and Beverage Institute. ● Li, T. L., Lin, H. C. (2010). Financial Accounting (Sixth Edition). Taipei: Career Just. ● Lin, T. (2010), translated by Chiang, Yu-Chen. Why Does Sushi Go Round and Round? Taipei: Dapai Publishing Co. ● Duh, R. R., Hsueh, F. C., Tsai, Y. C., Lin, H. W. (2011). Accounting: An Introduction (Third Edition). Taipei: Tung-hua Publishing Co. 	