

CHAPTER IV. ANALYSIS AND DISCUSSION

This chapter includes three parts as: Introduction to Case Companies; Critical Factors in Affecting Learning Motivations on Instructional Design; and Main Findings. The Introduction to Case Companies section is based on interviews and websites of these companies; Critical Factors of Instructional Design Aspect on WBT are according to the interview data, and the Main Findings are from both the analysis and discussion of interview data and literature reviews.

Introduction to Case Companies

Here are three companies participated in this research that were from financial service industry, technology industry, and manufacturing service industry. The introductions were collected from interviews, websites, and financial and economic magazines.

1. Financial Service Industry-Company A

Company A is a local financial service company that is headquartered in Taiwan and was established in 1977; the branches are located in North America, China, East Asia, and South Asia. They provide diversified financial service like leasing and car renting business and so on.

Company A adopted WBT in 2005; they implemented WBT for about one year till now. Their needs for WBT are as follows: They need instant and immediate training program to meet large number of recruitments; besides, there are employees distributed everywhere in Taiwan, and they participated in governmental subvention plan to get a grand and by this kind of opportunity, they also promoted their own company.

They cooperated with a digital company to adopt WBT platform and system. The considerations of selecting cooperative company were based upon the digital company consultative experiences, system functions the company provide, after-sales service, and the company must support governmental subvention plan because they think those companies supported governmental subvention plan are trustful.

2. Technology Industry-Company B

Company B is also a local technology company established in 1983. The main products of it are computer related, electronic, recreational and audiovisual products. Their branch offices are located in Taiwan (headquarter), Germany, USA, and UK, Hong Kong, and China.

This company planned and weaved budget in 1992 and adopted WBT in the end of 1993. The needs for adoption of WBT were immediate knowledge delivery across different space, and also they hoped to reduce training cost through WBT, and the last need of adoption was they hoped through this system, they could handle administration easily and conveniently.

Company B also established their WBT platform by cooperation with digital company. There were series of standards when they selected the cooperative company. They chose the cooperative by system functions, system stability, system extensibility, after-sales service and the cost of it.

3. Manufacturing Service Industry-Company C

Company C is a local motor manufacturing company that sells motors and provides motor repair service. This company was founded in 1946 and there are plenty stores and motor repair shops distributed in Taiwan.

The needs of WBT adoption of company C are time and space considerations,

hoped reduce training cost through adoption of WBT, and they also participated in governmental subvention plan to get financial support.

This case company cooperated with digital company to establish WBT platform and system like the other two cases. What they considered of choosing cooperative were the consultative experience of these companies, the system functions, system stability, after sales service, interface, and were these companies support the governmental subvention plan or not. All the information can be referred to table 4.1, table4.2, and table 4.3.

Table 4.1. *Case Companies' Basic Background*

Company	Category	Establishing Year	Business Area	Number of Employees	Assets
A	Local Company	1977	Financial Service Industry	800	8,200,000,000 NTD.
B	Local Company	1983	Technology Industry	370	2,432,000,000 NTD.
C	Local Company	1946	Manufacturing Service Industry	2100	400,000,000. NTD.

Table 4.2. *WBT Adoption Background of Case Companies*

Issue: 1-1 WBT Adoption Background	Coding Item	Case Company		
		A	B	C
Training Immediateness	1-1-1	✓	✓	--
Learning Space Availability	1-1-2	✓	✓	✓
Learning Time Availability	1-1-3	--	--	✓
Governmental Subvention Plan	1-1-4	✓	--	✓
Training Cost Down	1-1-5	--	✓	✓
Digitalized Administration	1-1-6	--	✓	--

Table 4.3. *Cooperative company selective standards*

Issue: 1-2 Cooperative company selective standards	Coding Item	Case Company		
		A	B	C
Consultative Experience	1-2-1	✓	--	✓
System Functions	1-2-2	✓	✓	✓
System Stability	1-2-3	--	✓	✓
System Extensibility	1-2-4	--	✓	--
Cost	1-2-5	--	✓	--
After-Sales Service	1-2-6	✓	✓	✓
Join in Governmental Subvention Plan	1-2-7	✓	--	✓
Interface	1-2-8	--	--	✓

Two of the case companies joined the governmental subvention plan, so they didn't take cost into the main consideration when they developed WBT, and they trust the digital companies cooperating with the plan, thus when they thought about

selecting cooperatives, they emphasized on those cooperative companies' consultative experience a lot, and something detail like system features and functions were thought less.

Discussion on Critical Factors in Affecting Learning Motivations

This section includes analysis and discussion of critical factors that affect learning motivations on Instructional design of WBT, and the difficulties they met in the processes when developing and implementation of WBT.

In the process of instructional design aspects, there are five stages as: analysis, design, development, implementation, and evaluation, so these factors are described through these five stages.

A. Critical Factors to WBT Analysis

Table 4.4 *Critical Factors in WBT Analysis*

Issue: 2-1 Factors in WBT Analysis	Coding	Case Company		
		A	B	C
Relevance and Practicality	2-1-1	✓	✓	✓
Immediateness	2-1-2	✓	✓	✓
Generalization	2-1-3	✓	✓	--
Transference	2-1-4	--	✓	--
Course Property	2-1-5	✓	✓	✓
Learners' Characteristics	2-1-6	✓	✓	✓
Core Knowledge	2-1-7	✓	✓	✓
Benefit	2-1-8	--	✓	✓
Lecturer Teaching Ability	2-1-9	✓	✓	✓

From table 4.4 above, in this stage, there are six critical factors affecting learning motivations: relevance and practicality, immediateness, course property, learners' characteristics, core knowledge and lecturer teaching ability; and there are two important factors in learning motivations, they are generalization and benefit.

In the criterion of critical factors, relevance and practicality means WBT courses or program must strongly relate to learners' work or life, and it helps them do their job better; immediateness indicates that they need WBT to solve instant problems and they can use what they just learned on their work or life; and as for course property factor, all of the interviewees thought not any course is appropriate for WBT, only some properties of courses are fit to be developed as WBT ones, they can bring about learners' motivations. And when we develop WBT courses, we should consider different kinds of learners' characteristics, and then we develop the program meet their needs and fit their backgrounds. Besides, quite important and core knowledge of WBT courses can also bring about learners' motivation. The last one of critical factor is lecturer teaching ability that means the skills of instruction and computeracy, if a WBT lecturer is not familiar with these skills, the quality of the course may be unideal, and it affects learners' willing to learn .

As to important factors, generation means if one WBT course can be learned by lots of learners or is it available to all members or not; and also some emphasize the benefit they can get from WBT a lot.

In addition, there is one interviewee mentioned they emphasize on transference of their own core and secret skill and knowledge, so they bring it into consideration in the process of analysis.

B. Critical Factors in WBT Design

In this stage, there are three critical factors that are clear structure presentation and outline, delivery of instruction and strategy, and content arrangement. And there is only one important factor: clear learning objectives. See table 4.5.

Table 4.5. *Critical Factors in WBT Design*

Issue: 2-2 Factors in WBT Design	Coding	Case Company		
		A	B	C
Clear Learning Objectives	2-2-1	✓	--	✓
Clear Structure Presentation and Outline	2-2-2	✓	✓	✓
Learning Motivation Inducement	2-2-3	--	✓	--
Delivery of Instruction and Strategy	2-2-4	✓	✓	✓
Content Arrangement	2-2-5	✓	✓	✓

In the criterion of critical factors, learners prefer to clear presentation and outline, and the clear presentation of WBT course helps them understand the contents better on WBT, besides, and delivery of instruction and strategy play an important role because it is very limited in the field of WBT, proper instruction and strategy help learners catch the points directly and quickly. Proper content arrangement is also a critical factor in the design stage like sections arrangement and timing control.

The only factor, clear objectives for learners, two of the interviewees emphasize the importance of it, however, the other one thought their WBT program was designed for the target group, the learning objectives does not need to be mentioned especially.

Company B also mentioned about learning motivation inducement is important, too, so they design some cases and stories related to the learning goal and the importance of the courses at the beginning of the WBT courses.

C. Critical Factors in WBT Development

Table 4.6. *Critical Factors in WBT Development*

Issue: 2-3 Factors in WBT Development	Coding	Case Company		
		A	B	C
Draft	2-3-1	✓	✓	--
Layout	2-3-2	✓	✓	✓
Platform and System Testing	2-3-3	✓	✓	✓

We can see table 4.6, in the developmental stage of WBT, there are two critical factors that are layout and platform system testing. In addition to critical factors, here is one important factor in this stage, and it is drafts of the WBT courses.

Layout indicate that the interface makes users feel friendly and smoothly; stable platform and systems make learners feel it's trustable and they learn favorably, thus, platform and system testing before the WBT courses implementation is very important.

Draft of one WBT course helps the production of the course fluently and the quality of it can be maintained better.

D. Critical Factors in WBT Implementation

Table 4.7. *Critical Factors in WBT Implementation*

Issue: 2-4 Factors in WBT Implementation	Coding Item	Case Company		
		A	B	C
Institutionalization	2-4-1	✓	--	✓
Instant Feedback	2-4-2	✓	✓	✓
Encouragement and Urgency	2-4-3	✓	✓	✓
Promotional Activities	2-4-4	✓	✓	✓
Community Establishment	2-4-5	✓	--	✓
Testing	2-4-6	✓	✓	✓
Resource Integration	2-4-7	--	✓	--
Supportive Service	2-4-8	✓	✓	✓

In the stage of implementation of WBT, there are five critical factors affecting learners' motivation that are instant feedback, encouragement and urgency, promotional activities, testing, and supportive service. And there are also two important factors that are institutionalization and community establishment. And the information is revealed on table 4.7.

In the criterion of critical factors, instant feedback makes learners feel they are taken seriously and make them satisfied; encouragement and urgency remind and encourage learners, and these promotional activities arouse learners' attentions and interests in WBT courses. Testing provides learners an opportunity to self-examine and they can reflect what they have learned and not learned, also, it's one way of evaluate the result of their learning, and that it more complete process for learners. And learners need supports and service whenever they met difficulties and problems during the process of learning.

Two of the interviewees thought WBT should be tied in some principles and measures, it pushes learners and it increase learners' motivations as well, so their WBT programs WBT are institutionalized. Two of the companies thought communities help learners discuss or communicate more easily through this virtual space that motivates them willing to learn.

One of the function of Company B's system is WBT, thus they emphasize resources integration issue much.

E. Critical Factors in WBT Evaluation

Table 4.8. *Critical Factors in WBT Evaluation*

Issue: 2-5 Factors in WBT Evaluation	Coding	Case Company		
		A	B	C
Testing Result	2-5-1	✓	✓	✓
Institutionalization	2-5-2	✓	✓	✓
Questionnaire	2-5-3	✓	✓	✓
Interview or Discussion Meeting	2-5-4	✓	✓	✓
Perusal Condition	2-5-5	--	✓	--
Supervisors' Evaluations	2-5-6	✓	✓	✓

In the stage of WBT evaluation, there are five critical factors that are testing result, institutionalization, questionnaire, interview and discussion meeting, and supervisors' evaluations and the information is referred to table 4.8.

Testing result affects learners' confidence and will to future learning, especially the validity of tests influence a lot, it affects learners trust the WBT program of not. And as for institutionalization, it is familiar like principles and measures in implementation stage, and makes learners follow the series of WBT program

smoothly. Questionnaires is one kind of tool to get the information from learners, they deliver their opinions and satisfaction directly; further more, interviews and discussion meetings is a way more directly they can show their feelings and thoughts about WBT program they took. Evaluations from learners' supervisors can motivate them learn new things seriously.

Main Findings

Looking back to the first two purposes of this study, the first one is finding out instructional design factors that affect learners in WBT; and the second one is to identify critical factors when promoting the effects of WBT. Thus, in this research, three parts of main findings that are described as follows: the first section includes instructional design factors affecting learners; and the second section described critical factors affecting learners' motivations; and the final section of this chapter is what difficulties cases companies met during developing WBT. The findings are from both interviews and literature data and information based on research purposes.

Instructional Design Factors Affect Learners in WBT

The researcher sum up instructional design factors from the interviews and case companies' experiences of WBT in the section.

In the stage of analysis, there are nine factors revealed: relevance and practicality, immediateness, generalization, transference, course property, learners' characteristics, core knowledge, benefit, and lecturer teaching ability. In these nine factors, we can divide them into three criteria as courses and knowledge features, human factors, and follow-up benefit.

In design phase, there are five factors affecting learners' in the field of WBT: clear learning objectives, clear structure presentation and outline, learning motivation inducement, delivery of instruction and strategy, content arrangement. Due to the weakness of WBT, they can only convey everything by computer and audio equipment without facial expression, body language or other personnel assistants; course structure, objectives, instructions, and content arrangement should be presented very clearly and in good order.

In development phase, only three factors were found out and they are draft, layout, and platform and system testing, draft preparation and platform and system testing affect easy and smooth learning, and the other important factor is the vision and using experience for learners.

In implementation stage, institutionalization, instant feedback, encouragement and urgency, promotional activities, community establishment, testing, resource integration, and supportive service are factors affecting learners. These eight factors revealed communicational system and feedback are so emphasized in WBT, on the other hand, the interviewees indicated that complete set of system and principles are also important factors like testing and resources integration.

And the last stage of WBT is the evaluation part, here are several factors as: testing result, institutionalization, questionnaire, interview or discussion meeting, perusal condition, and supervisors' evaluations. Reviewing these factors, learners' feeling and opinions of the WBT they have taken must be express through different kind of ways, and these feedbacks should be dealt with appropriately; principle or systems for the whole WBT program must be clear and carried out indeed.

Critical Factors to Learners' Motivation

In the last section, the critical factors of affecting learners' motivations in instructional design are described into five stages, analysis, design, development, implementation, and evaluation.

In the stage of analysis, relevance and practicality, immediateness, course property, learners' characteristics, core knowledge and lecturer teaching ability are included in the criterion of critical factors. In general, relevance and practicality, immediateness, and core knowledge affect learners' relevance of motivations, learners care about what benefits and necessity they can get, and how the WBT program help

them especially in their career life or their work directly and immediately.

Course property, learners' characteristics, and lecturer teaching ability are also critical because these interviewees found out only the courses are suited to the way of WBT, the effect and performance of learning would be better; on the contrary, the courses properties not suit for the way of WBT can't bring out great performance of learning, learners are not satisfied with the WBT courses, either. Learners' characteristics is also important in this stage, the delivering way and the style of WBT must match different kinds of learners; lecturer teaching ability is also a factor affect the display of quality, and learners experience it directly and quickly, and these three items affect learners direct feeling about the WBT course, and they affect learners satisfaction of motivation.

In the stage of design, there are three critical factors that are clear structure presentation and outline, delivery of instruction and strategy, and content arrangement. These three items are keys that learners get the points and understand the whole pictures of WBT courses or where are they during the process of learning, well design makes learners learn comfortably; these three items are related to learners' attentions and satisfactions of motivations.

In the stage of development of WBT, layout of the WBT courses, platform and system testing before online are two critical factors affecting learners' motivations. Layout is the same as the interface of WBT courses, learners operate and use the system to learn; the layout impacts on learners' satisfaction directly. Well-developed layout makes them feel use-friendly and convenient when they are learning. Besides, stable platform and system make learners trust the WBT system and they learn smoothly in the process, thus, platform and system testing beforehand is a very critical factor to successful WBT program.

When it comes to implementation of WBT, instant feedback, encouragement and

urgency, promotional activities, testing, and supportive service are critical factors to learners' motivation. Instant feedback plays a very important role in WBT due to in the virtual world, face to face communication is the hardest barrier to overcome, instant feedback is the only way to communicate with each other, and instant feedback makes learners feel they are cared and paid attention during this process, and this factor influence on confidence and satisfaction of motivations. Encouragement and urgency are the power to motivate and push them to go on and follow the schedule and remind them, also they would feel they are cared and paid attention to and it recall their attention and confidence when they are praised. Promotional activities arouse learners' attentions and interests in WBT and that is for sure. Testing and the result motivate learners to learner harder, and tests make them pay more attentions to WBT and emphasize on the program more. Supportive service from Human Resource department or Training department and IT department is important for learners when they need helps, supportive service makes them feel they are not unaided, only when they get full supports, they are satisfied with the whole learning WBT program.

In the evaluation stage of WBT, testing result, institutionalization, questionnaire, interview and discussion meeting, and supervisors' evaluations are critical factors on WBT. Testing result, institutionalization and supervisors' evaluations are related to learners' attention, confidence of motivation; on one hand, well testing system, rules and principles, and performance system force learners to learn, on the other hand, well system and principle let learners have clear standards to follow. When it comes to questionnaire, and interview and discussion meeting are ways of communication and negotiation, learners convey their opinions and feelings through these two ways, learners feel satisfied when this part is satisfying.

Of course, there are other important factors appeared earlier, these factors are

important depends on different situations and backgrounds of different companies' WBT developments. One of the companies takes their WBT as one part of the e-management system, so they thought sources integration and they use it as a practical tool in their daily lives, the employees are used to this system, and they can get information and data from this system in addition. They make the system as a useful tool for the learners and let them learn voluntarily instead of forcing, using series of rules, or put the WBT program into their performance system. Thus, though there are some thoughts in common within these three cases, some different thoughts and considerations are still different, company B takes personal feelings and experience much more apparently.

Difficulties in WBT

This part includes the discussion of difficulties case companies met from the establishment of WBT to the last stage of evaluation as we can see on table 4.9.

Table 4.9. *Difficulties in The Process of WBT*

Case Company	Issue Category	Coding Item	Content
A	Analysis	3-1-1	Analysis of Instructions to Different Styles of Learners.
	Analysis& Design	3-1-2	Some Lecturers Lack for Instructional Skills or Computeracy.
		3-2-1	
	Development	3-3-1	Limited functions of Software and Program
B	Analysis	3-1-3	Lecturers' Will to Participate in WBT
	Development& Implementation	3-3-2	Lacking of Enough Human Resources
		3-4-1	
C	Development	3-3-3	Unstable WBT System

To sum up, what difficulties the three case companies met are different, company A mentioned they can't analyze learners' characteristics of learning accurately, in this way, they are not unable to find out and design the appropriate instructions and teaching strategies for the target group; in addition to the analysis problem, they have the other problem is that not all of their lecturers are qualified for well-prepared instruction skills or computer skills on WBT.

Company B came up with lecturers' will to join in WBT, some important and professional employees are very busy for their work, this situation reduces their will to participate in WBT; besides, the interviewee indicated that the men producing WBT are not enough, and after that, they called for other departmental employees who are interested in WBT, and hope in this way, they can increase the human resource in WBT and cultivate them the other professional skill as well.

Company C faced a problem of not stable system when providing WBT program to all the stores or shops everywhere in Taiwan. It is technical problem in development stage due to they didn't consider that much at the beginning.