

# Scaffolding, Perceived Usefulness, Satisfaction and Continuance Intention toward Online Foreign Language Learning

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**Abstract.** Foreign language learning takes place where the language to be learned is not the native language; therefore, different from second language learning, foreign language learning is more controlled by general human cognitive learning capacities. In this sense, to facilitate cognitive learning process, this paper employed the ideology of scaffolding in online foreign language instruction, and testified its effects by the integration of the Expectation-Confirmation Model (ECM). Data were collected from 299 university students, and the relationships among the variables were examined by path analysis. The results showed that scaffolding in online foreign language learning can affect learners' perceived usefulness and satisfaction directly and their continuance intention indirectly.

**Keywords:** Scaffolding; Foreign Language Learning; Perceived Usefulness; Satisfaction; Continuance Intention.

## 1. Introduction

Scaffolding has been widely employed in online education (see [1]; [2]). However, there are few applying scaffolding to online foreign language learning, which is considered quite controlled by general human cognitive learning capacities [3]. This paper tries to testify the effects of scaffolding on online foreign language learning for adult learners by integration of the Expectation-Confirmation Model (ECM).

## 2. Concepts

### 2.1. Foreign language learning

In this paper, a distinction should be made between foreign language learning and second language learning. Foreign language learning takes place where the language to be learned is not the native language of the society; while second language learning takes place in a country where the language is spoken [4].

### 2.2. Scaffolding in online foreign language learning

For successful general cognitive learning, the author turns to scaffolding. "Scaffolding", was originally defined as "a process that enables a child or a novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts" [5].

As to the features and functions of scaffolding, there are different versions (see [6]-[8]); generally speaking, there are three categories. The first category is about the nature of scaffolding, including "contingency" and "granularity". "Contingency" means scaffolding is progressively adjusted, gradually withdrawn until the learners realize self-regulation. "Granularity" indicates that scaffolding belongs to different pedagogical scales, from a program of activities to a procedure of moment-to-moment interactions. The second category illustrates the outcome of scaffolding, including "flow", "recruitment and frustration control" and "goal-orientation". "Flow" means learners' flow experience; "recruitment and frustration control" means scaffolding can enlist learners' interest, and reduce their disappointment; and "goal-orientation" indicates the purpose of scaffolding is for the self-regulation of a clarified goal. The third category highlights how to construct scaffolding, including "continuity", "contextual support", "collaboration", "modeling", "channeling and focusing" and "multiplicity". "Continuity" means alignment

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between the steps of instruction, such as between directions and assistances, different tasks, different programs, etc.; “contextual support” is the provision of different means to expose a learner to more authentic experiences; “collaboration” means working collaboratively with the instructor, other learners or online content for the perception of encouragement, confidence, or even advance in study; “modeling” is the demonstration of an idealized form of the act to be performed in order to pinpoint discrepancies between the produced and the ideal solution; “channeling and focusing” means marking relevant sources in order to simplify the task, recruit and focus a learner’s attention; “multiplicity” is the provision and application of multiple learning strategies, both direct and indirect. As for scaffolding construction, this paper turns to the third category of scaffolding features.

### 2.3. Expectation-confirmation model (ECM)

Bhattacharjee [9] posited in ECM that an individual’s continuance intention toward information technology (IT) usage is dependent on his satisfaction with the IT, the extent of his confirmation of expectations and post adoption expectations (in the form of perceived usefulness). In ECM, “perceived usefulness” is defined as the degree to which a person believes that using a particular IT would enhance his or her job performance; “confirmation” is defined as users’ perception of the congruence between expectation of the IT use and its actual performance; “satisfaction” is defined as users’ affect with (feelings about) prior IT use; and “continuance intention” as user’s intention to continue using the IT. Since ECM has been widely applied to the studies of online education, this paper tends to testify the effects of scaffolding by the integration of ECM.

### 3. Model and Hypothesis

According to ECM, this study posits (see Fig.1):

- H1. Learners’ continuance intention to learn online is positively dependent on their perceived usefulness.
- H2. Learners’ continuance intention is positively dependent on their satisfaction.
- H3. Learners’ satisfaction is positively related to their perceived usefulness.
- H4. Learners’ satisfaction is positively related to their confirmation of expectation.
- H5. Learners’ perceived usefulness is positively related to their confirmation of expectation.

Socio-culturally speaking, language does not only control the physical environment, but mediates human own psychological activities and reorganizes the originally-biologically endowed psychological processes (see [10]). Language, employed in the physical environment and psychological activities, develops with psychological growth; however, the same is not true of adult foreign language learning which hardly involves itself in social and psychological activities. Thus, this study argues that scaffolding, which facilitates general human cognitive learning, has positive effects on online adult foreign language learning (see Fig.1). Here, scaffolding is a second order construct consisting of continuity, contextualization, modelling, focusing & outlining, collaboration and multiplicity.

- H6. Scaffolding is closely related to learners’ perceived usefulness.
- H7. Scaffolding is closely related to their satisfaction.
- H8. Scaffolding is closely related to their continuance intention.

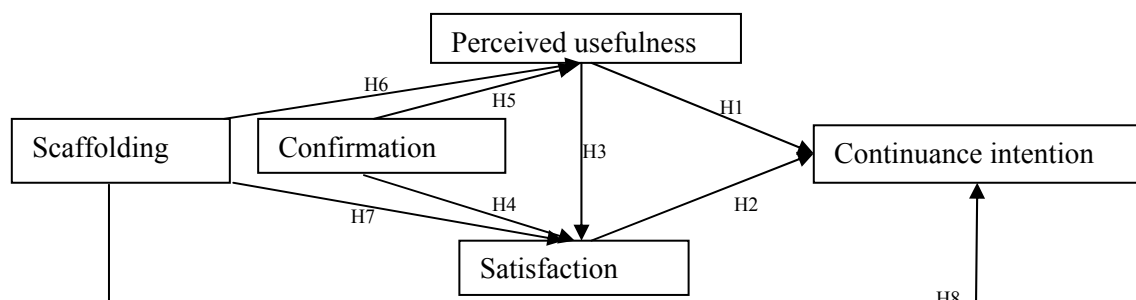


Fig. 1: Research Model

## 4. Participants and Procedure

According to the Web Supplemented, Web Dependent and Fully Online Modes set by Australian Department of Education, Science and Training [11], 3 universities in China, including 356 students at the age of 19/20 were selected. In data collection, this study sent out and collected the questionnaires in the second semester to ensure a substantial period of online learning. Of 356 questionnaires, 299 were collected as available.

## 5. Survey Instrument

The constructs of “continuance intention”, “perceived usefulness”, “satisfaction” and “confirmation” were reflective latent variables measured with the items adapted from Bhattacharjee [12]; while the construct of “scaffolding” was a formative composite variable consisting of six first-order constructs: “continuity”, “contextualization”, “modelling”, “focusing and outlining”, “collaboration” and “multiplicity” .

Continuance intention:

- I will use the online language learning community on a regular basis in the future.
- I will frequently use the online language learning community in the future.
- I will strongly recommend others to use the online language learning community.

Perceived usefulness:

- I feel that study online can improve my learning performance better than offline.
- The online learning community is effective and my educational needs are met.
- I find the online learning community is useful and promotes my desire to learn.

Satisfaction:

- I am satisfied with the performance of the online language learning community.
- I am pleased with the experience of using the online learning community.
- My decision to use the online language learning community was a wise one.

Confirmation:

- My experience with using the online language learning community was better than I expected.
- The service level of the online learning community was better than I expected.
- The online learning community can meet the demands in excess of what I required for the service.

Continuity:

- Online learning provides a series of related materials for learning relevant specific language points.
- I can get acquainted with a language point, after learning a series of related articles.
- It is easy for me to master a systematically repeated language point.

Contextualization:

- In the authentic context in online learning, my language knowledge is activated.
- The pictures, films or other authentic sensory contexts in online language learning make the foreign language accessible and engaging.
- The online learning brings language points closer to the authentic world experiences by interesting articles, pictures or other means.

Modelling:

- In learning a new language point (a word, grammar, etc.), I am given clear examples as to how to use it.
- When I am introduced a new language point, I know what is requested of me to imitate.
- With the help of modelling, I know how to accomplish a particular language task.

Focusing and outlining:

- I am given a brief introduction of the topic and organization of the foreign language articles.

- The online learning highlights the important points of the learning materials.
- The highlighted outlines help me have a systematic idea of the related article.

Collaboration:

- In online learning, I am encouraged to work with other learners to fulfill a learning task.
- In online learning, I am encouraged in time to communicate and play a role in team work.
- In collaboration with other learners, I am encouraged to perform at my best.

Multiplicity:

- The online learning helps me to find and adopt proper learning strategies.
- The online learning teaches me the methods to improve my foreign language learning.
- The online learning enables me to plan with learning strategies according to my leaning performance.

## 6. Analysis and Results

In our research, SmartPLS version 2.0 was chosen for data analysis. This study first examined factor loadings. The AVE scores of collaboration, contextualization, continuity, focus & outlining, modelling, multiplicity, confirmation, perceived usefulness, satisfaction, and continuance intention are respectively 0.81, 0.70, 0.71, 0.76, 0.72, 0.75, 0.78, 0.74, 0.84, and 0.78. The  $\alpha$  scores of collaboration, contextualization, continuity, focus & outlining, modelling, multiplicity, confirmation, perceived usefulness, satisfaction, and continuance intention are 0.88, 0.77, 0.80, 0.84, 0.80, 0.83, 0.85, 0.83, 0.94, and 0.86.

Table 1 presents the estimates obtained from PLS analysis (Boostrapping with 299 re-samples). An  $R^2$  value of .6460 indicates that the model explains a substantial amount of variance in continuance intention. First, learners' continuance intention is dependent on their perceived usefulness and satisfaction. Second, their satisfaction is dependent on their confirmation, perceived usefulness and scaffolding. Third, their perceived usefulness is dependent on their scaffolding and confirmation.

Table 1. Test of Hypotheses

Number	Hypothesis	[T value]	[P]
1	[Perceived usefulness → continuance intention]	[1.4E-14]	[***]
2	[Satisfaction → continuance intention]	[3.2E-10]	[***]
3	[Perceived usefulness → satisfaction]	[0.00278]	[**]
4	[Confirmation → satisfaction]	[5.4E-10]	[**]
5	[Confirmation → perceived usefulness]	[2.7E-18]	[***]
6	[Scaffolding → perceived usefulness]	[1.4E-07]	[***]
7	[Scaffolding → satisfaction]	[7.1E-06]	[***]
8	[Scaffolding → continuance intention ]	[0.24533]	Not supported

## 7. Discussion

As is shown in the hypotheses test, scaffolding plays a significantly positive role in determining adult foreign language learners' perceived usefulness and satisfaction, and plays a mediating role in affecting their continuance intention toward online foreign language learning, which means that it is desirable to introduce scaffolding to online adult foreign language learning.

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## 9. References

- [1] R. D. Pea. The Social and Technological Dimensions of Scaffolding and Related Theoretical Concepts for Learning, Education, and Human Activity. *The Journal of the learning sciences*. 2004, **13**(3): 423-451.
- [2] P. Sharma, and M. J. Hannafin. Scaffolding in Technology-Enhanced Learning Environments. *Interactive Learning Environments*. 2007, **15**(1): 27-46.
- [3] R. B. Vroman. The Logical Problem of Foreign Language Learning. *Linguistic Analysis*. 1990, 20:3-47.
- [4] R. B. Vroman. The Logical Problem of Foreign Language Learning. *Linguistic Analysis*. 1990, 20:3-47.
- [5] D. Wood, J. S. Bruner, and G. Ross. The role of tutoring in problem Solving. *Journal of Child Psychology and Psychiatry*. 1976, 17: 89-100.
- [6] C. McLoughlin. Learner Support in Distance and Networked Learning Environments: Ten Dimensions for Successful Design. *Distance Education*. 2002, **23**(2): 149-162.
- [7] R. D. Pea. The Social and Technological Dimensions of Scaffolding and Related Theoretical Concepts for Learning, Education, and Human Activity. *The Journal of the learning sciences*. 2004, **13**(3): 423-451.
- [8] Aí' da Walqui. Scaffolding Instruction for English Language Learners: A Conceptual Framework. *The International Journal of Bilingual Education and Bilingualism*. 2006, **9**(2): 159-180.
- [9] A. Bhattacharjee. Understanding information systems continuance. An expectation – confirmation model. *MIS Quarterly*. 2001, **25**(3): 351-370.
- [10] J. P. Lantolf, and S. L. Thorne. *Sociocultural Theory and the Genesis of Second Language Development*. Oxford University Press, 2006.
- [11] M. Bell, D. Bush, P. Nicholson, D. O'Brien, and T. Tran. *Universities Online: A survey of online education and services in Australia* (Occasional paper 02-A). Canberra: Department of Education Science and Training, 2002.
- [12] A. Bhattacharjee. Understanding information systems continuance: An expectation – confirmation model. *MIS Quarterly*. 2001, **25**(3): 351-370.