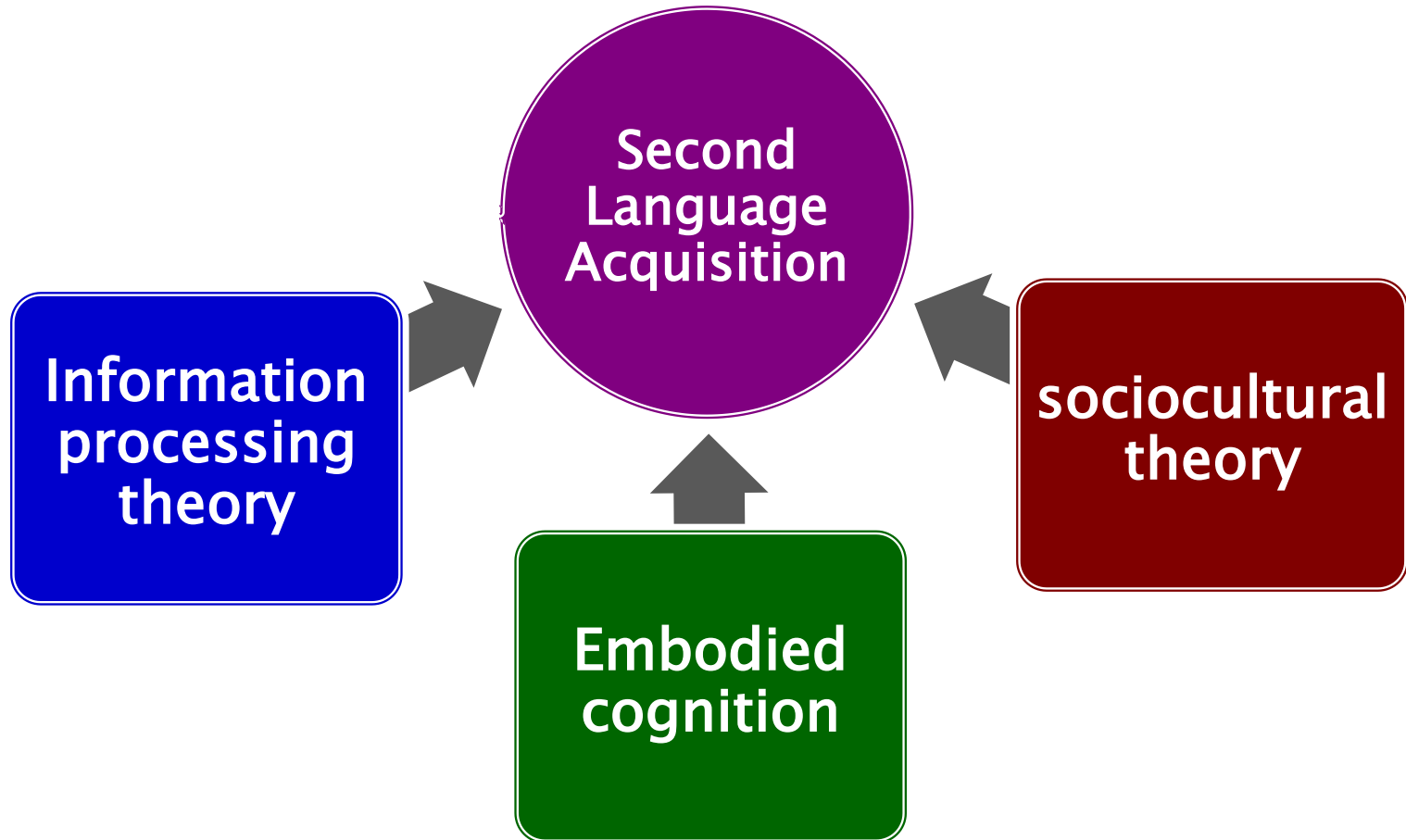# Language learning in virtual worlds

Yu-Ju Lan

Distinguished Professor
National Taiwan Normal University

Second Language Learning

sociocultural theory: Context

▸ Interesting examples

北

http://news.cultural-china.com/20110908090741.html
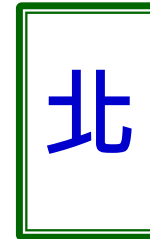
It is important to learn a foreign language through contexts

- To provide learners with the opportunity to actively interact with each other under meaningful contexts

- However, it is uneasy for L2 teachers to create authentic contexts for their daily teaching activities.

Objectives

Research-oriented

- **To develop the theory of second language acquisition in 3D virtual worlds**

Education-oriented

- **To equip each school with its own customized language village**

- **To allow each language teacher to customize the learning contexts as needed**

- **To get each language student immersed in the learning contexts**

Themes

Learner
- **Student-centered and task-based learning**
- **Self-directed learning**

Teacher
- **Innovative teaching design**
- **Individualized, adaptive, contextualized**

Researcher
- **Context development and learning assessment**
- **Learning and behavior analysis**

The Construction of the 3D Virtual World

NTNU campus

- Each year, many foreign and overseas students come to NTNU to learn Mandarin Chinese

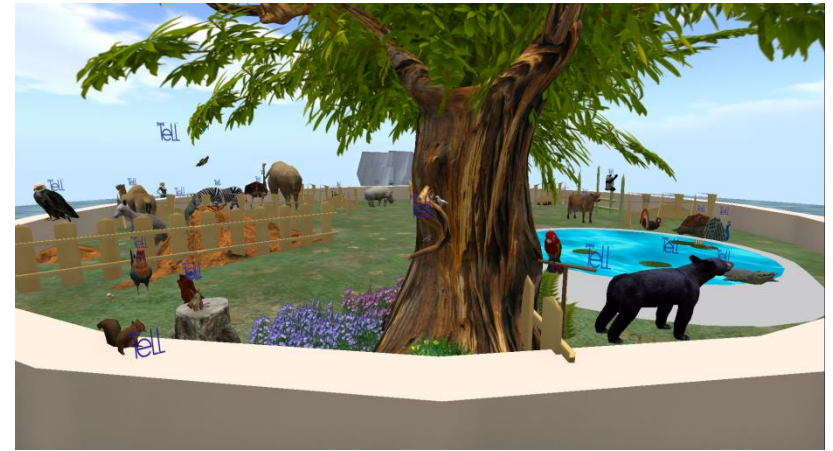- Thus, the NTNU Language Island has been built on *Second Life* for language learning purpose

NTNU Language Island

NTNU Language Island

NTNU Language Island

Applications of 3D Virtual Worlds

The virtual world for CFL beginners

» Interaction task design

Lan, Y.-J., Kan, Y.-H., Hsiao, I. Y. T., Yang, S. J. H., & Chang, K.-E. (2013). **Designing interaction tasks in Second Life for Chinese as a foreign language learners: A preliminary exploration**. *Australasian Journal of Educational Technology, 29*(2), 184-202. (SSCI)

The purposes of this research were to develop guidelines for designing interaction tasks for learners of Chinese as a foreign language (CFL) and to investigate the attitudes of CFL learners toward a full CFL class in Second Life (SL). Three research questions were addressed in this research: (1) What are the attitudes of CFL learners toward the language learning tasks in SL? (2) What kinds of social interactions emerge from learning activities in a CFL class in SL? (3) How do those activities benefit CFL learners in the learning of Chinese in SL?

Two studies were conducted to tackle these questions. The cognition, usage, and expansion (CUE) model was proposed based on the findings obtained from study 1 and then implemented and evaluated in study 2. The findings of study 2 indicated that the activities run in the CUE model were effective at motivating CFL beginners and improving their oral communication and social interactions. Based on the video data analysis, three criteria were proposed for designing learning activities. Suggestions are also made for future research on CFL teaching/learning in SL.

A study on the learning of Mandarin vocabulary
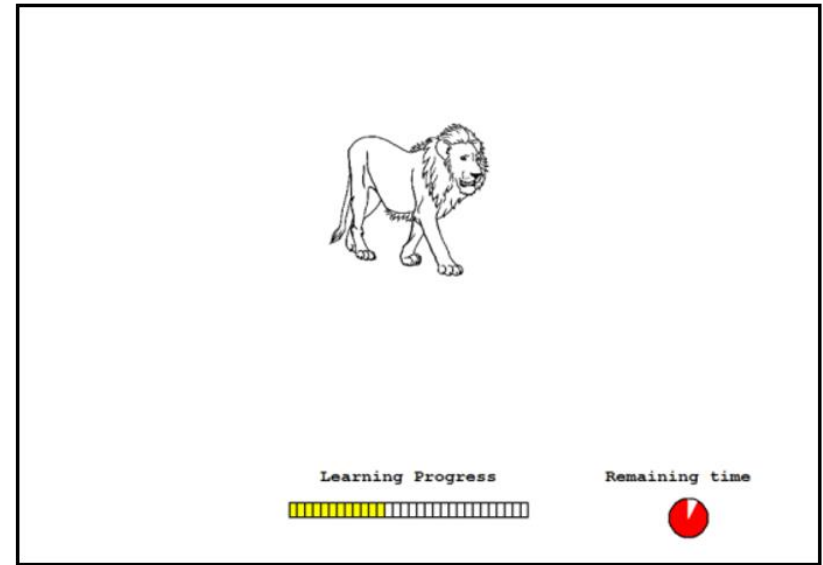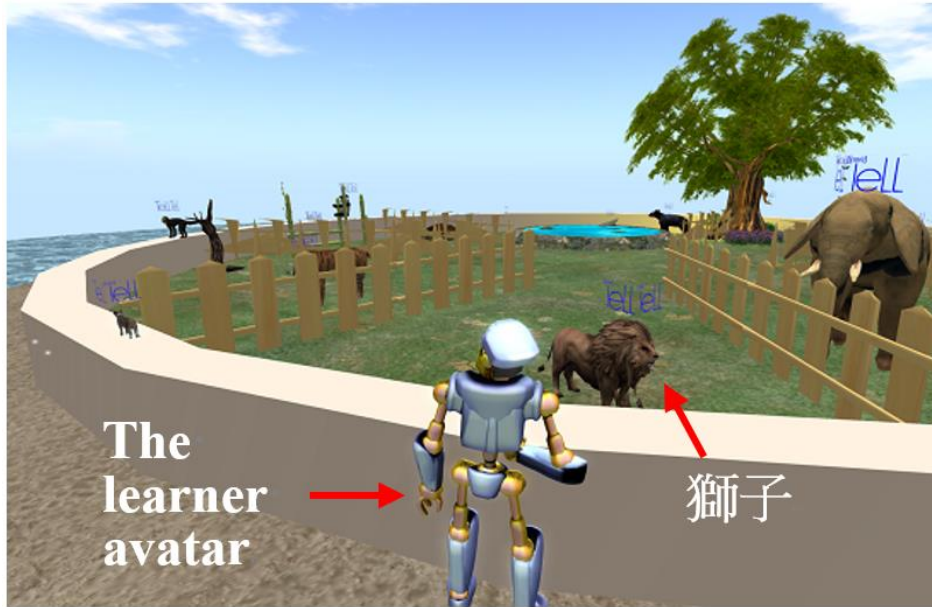
» **Penn State University**

Lan, Y. J., Fang, S. Y., Legault, J., & Li, P. (2015). Second language acquisition of Mandarin Chinese vocabulary: Context of learning effects. *Educational Technology Research & Development*, *63*(5), 671-690. DOI 10.1007/s11423-015-9380-y (SSCI)

Abstract   In an increasingly multilingual world, it is important to examine methods that may lead to more efficient second language learning, as well as to analyze the mechanisms by which successful learning occurs. The purpose of the current study was to investigate how different learning contexts can impact the learning of Mandarin Chinese as a second language. Two contexts [virtual environment (VE) vs. traditional learning environment] were compared and examined from cognitive and linguistic perspectives. Thirty-one monolingual English speakers participated in a training study consisting of seven learning and testing sessions, followed by one additional sessions of delayed post-testing. The participants' behavioral performances with regard to accuracy, reaction time, and exposure were collected and analyzed. Through analyses of variance and mixed-effects modeling, the current study shows that the learning trajectory of the participants in the VE showed a larger acceleration than that of those in the traditional learning context, which suggests that simulated embodied experience in the VE may have aided in the processing of a second language, especially with regard to enhancing the learning trajectory in short-term second language training.
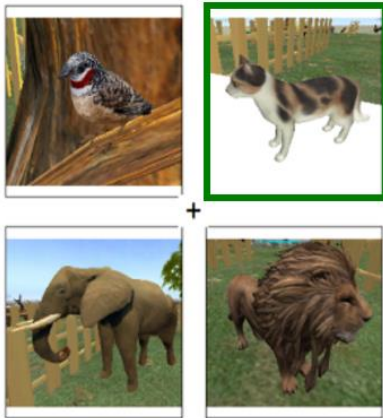
Working with Penn State University

The learner avatar

獅子

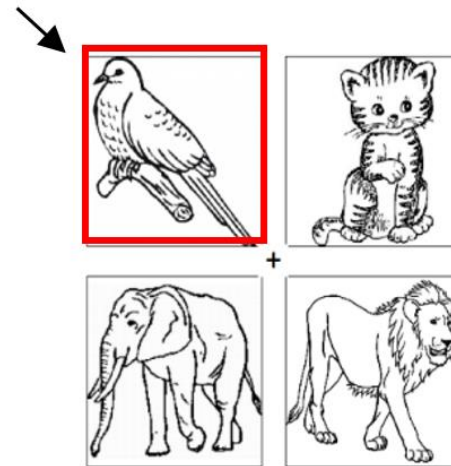Learning Progress

Remaining time

Working with Penn State University

Working with Penn State University

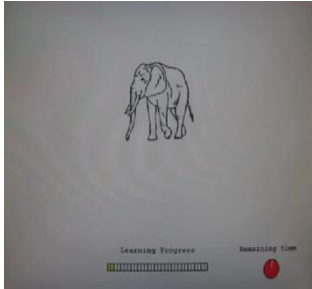# What do we find in a practical study?

90 two-character
Chinese words

90 two-character
Chinese words

Web-based

3D virtual
environment

2D line drawing

3D object

The virtual world for Overseas Chinese Students

» Oral-performance language tasks for CSL beginners in Second Life

Lan, Y. J. (2014). Does Second Life improve Mandarin learning by overseas Chinese students? *Language Learning & Technology, 18*(2), 36-56. (SSCI)

Lan, Y. J., Kan, Y. H., Sung, Y. T., & Chang, K. E. (2016). Oral-performance language tasks for CSL beginners in Second Life. *Language Learning & Technology*, 20(3). (SSCI)

Does Second Life improve Mandarin learning by overseas Chinese students?

The aim of this study was to determine the effectiveness of Second Life (SL) for improving the oral output of overseas Chinese students learning Mandarin Chinese (hereafter referred to as Mandarin). More than 1000 overseas Chinese students attend a university in northern Taiwan every year to learn Mandarin as a heritage language after graduating from high school in their own countries. These students strive to learn academically, but rarely actively speak Mandarin either inside or outside the classroom. This two-stage study evaluated the use of SL in improving their oral output. The focus of stage 1 was to confirm the potential of SL for promoting the oral output of overseas Chinese students in Mandarin language classes. Twenty overseas Chinese students learning Mandarin participated in this stage. In stage 2, 24 overseas Chinese students were taught 3 learning units in Mandarin in SL. Analysis of the results showed that learning Mandarin in an SL environment significantly increased the in-class oral output of those students. They also made significant improvements in oral performance and learning attitudes toward Mandarin.

Research design

the conventional classroom

the virtual classroom in SL

Oral-performance language tasks for CSL beginners in Second Life

The aim of this study was to determine the effects of different types of language tasks performed in Second Life (SL) on the oral performances of beginners of Chinese as a second language (CSL), focusing on the oral accuracy. The 30 CSL beginners who participated in this study were randomly divided into two groups ($N=15$ per group), required to perform different types of language tasks: the information gap and the reasoning gap. During the study, both the Mandarin oral accuracy and the learning motivation of both groups were recorded and analyzed to determine to what extent performing the two different task types could contribute to the two dependent variables (i.e., accuracy and motivation). All the learners improved significantly in oral communication competence, with those performing the reasoning-gap task improving significantly more than those performing the information-gap task. It was also found that almost all the learners exhibited positive learning motivation and appreciated the task-based learning activity design in SL. Both groups made significant improvement in affective dimension. Furthermore, the reasoning-gap group received significantly higher scores in the educational-context-related dimension (attitude toward SL as the Mandarin Chinese learning environment) than the information-gap group did.

The virtual context used in the study

The virtual world for WanFu Elementary School

» The English Village and the self-directed English learning

The purposes of the current study are to develop virtually immersive EFL learning contexts for EFL learners in Taiwan to pre- and review English materials beyond the regular English class schedule. A 2-iteration action research lasting for one semester was conducted to evaluate the effects of virtual contexts on learners' EFL learning. 132 elementary school students participated in this study. Both qualitative and quantitative data, including observation and English learning performances, were collected and analyzed. The positive results obtained from the study approved that the usage of virtual contexts in EFL learning could (1) provide students with learning opportunities without the time and space limits, (2) provide students with a game-liked scenario for English learning, and (3) enhance learners' EFL performances. The learning mode proposed and experiences gained in the current study not only serve as a practical reference to diverse foreign language educational occasions but also add to the knowledge pool of foreign language learning and teaching in virtual worlds.

Nightmarket

WanFu English Sky Castle

SL Virtual World

▸ Real-world ring toss ▸ 3D ring toss

WanFu English Sky Castle

SL Virtual World

Post office

WanFu English Sky Castle
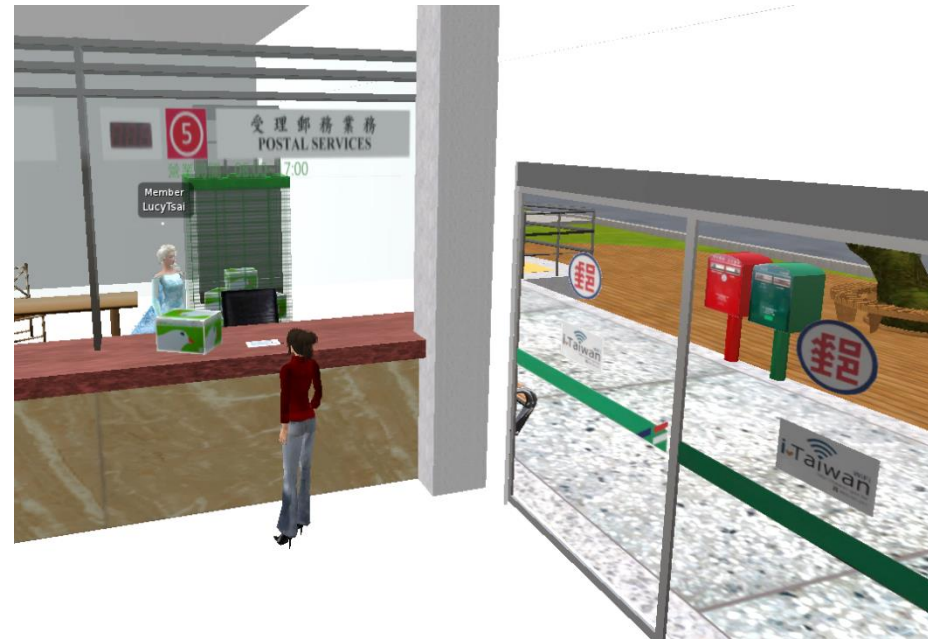
SL Virtual World

Suggestions for Future research

Learning in different contexts

Virtual

Real

Learning in different contexts

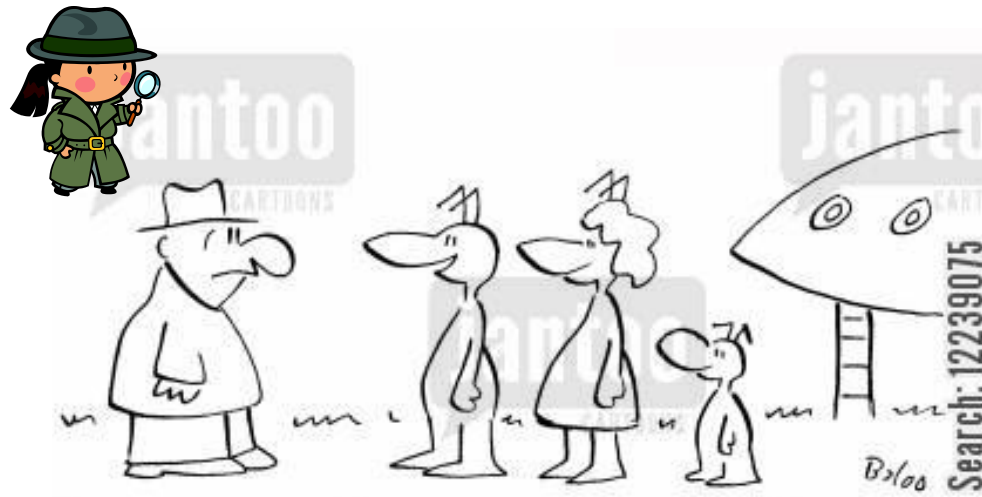**Virtual**

Real

Study abroad: semi- or virtual

Learning Chinese in Taiwan

Learning Chinese in virtual worlds

Language education for immigrants

"We're thinking of settling down here —
do you folks have bilingual education?"

http://www.jantoo.com/cartoons/keywords/settle

NTNU TELL Lab

Thank You For Your Attention!