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Seamless Experience of Learning across Contexts for Chinese Vocabulary Learning: A Pilot Study

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Abstract

This paper delineates a pilot study on a seamless language learning design that emphasises on the seamless Chinese vocabulary learning experiences across a multitude of contexts of "at home, on campus, in the classroom, at apartment and other places". A systematic seamless learning approach was introduced. In addition, DingTalk, a technology-enhanced learning platform in tandem with social media was adopted to enhance respondents' Chinese vocabulary learning. Eight international students of Chinese as a foreign language (CFL) participated in this study for eight weeks, where they were permitted to utilise their mobile devices to capture vivid images and create artifacts on DingTalk, the social media platform, in conjunction with conducting a series of peer-to-peer discussions regarding the artifacts. Through the findings of the post-study reflections, interviews, and the data obtained from students upon the conclusion of the study, an overall positive influence on the student's ability to diligently leverage their spectrum of vocabulary in a multitude of contexts was evident. Furthermore, the notion of seamless language learning design has empowered students to inculcate the habit of autonomous learning and translate in-class language learning to practical real-life scenarios through their seamless learning experience across various contexts, which strongly correlates with their educational competence both in and out of the classroom.

Keywords: Seamless Learning, Contexts, Chinese as a Foreign Language (CFL), Vocabulary Learning, Artifact Creation

Introduction

Historically, the enrichment of vocabulary has retained an integral role in the field of language training (Hasnine et al., 2020; Nation, 2001). Additionally, the concept of vocabulary usage encompasses relevant context, in conjunction with definite meaning and grammatical knowledge (Wu & Hu, 2021). Moreover, the notion of meaning being inextricably linked to context is widely acknowledged, wherein the principle of context simultaneously restricts and influences meaning. Notably, linguists have typically perceived the contextual learning of vocabulary as a critical method of enhancing one's vocabulary (Nation, 2001; Wu & Hu, 2021). Besides, numerous studies have showcased that "good" language learners are typically engaged in context learning activities to practise their target language (Rindaningsih et al.,

2021). However, respondents are misled by fewer opportunities to practise acquired theoretical knowledge regarding Chinese writing skills in practical scenarios owing the "seams" or "gaps" prevalent in formal and informal, physical and virtual, and individual and social learning spaces (Song & Hwang, 2020; Xiao et al., 2021). Thus, it becomes plausible to apply the concept of seamless learning and the social media platform, DingTalk, to Chinese language learning. In general, seamless learning is defined as a fundamental learning model based on mobile devices which aids in bridging the gap of traditional classroom and informal learning, while concurrently guaranteeing a sustained and smooth learning process irrespective of time and place (Abdullah & Hashim, 2021; Wong et al., 2016; Wu & Zhao, 2021).

Subsequently, this paper diligently formulates a seamless language learning design in conjunction with a fitting analytic method to ascertain the role of artifacts in evaluating CFL learner's vocabulary learning. Nevertheless, the study also integrates a seamless learning approach while emphasising contextualised content generation by students and their seamless learning experience in their daily lives.

Literature Review
In actuality, the younger generation is predisposed to uphold modernistic trends, which encompass the sophisticated conceptions of physical and digital space with emerging innovations in network technology (Kaya, 2021; Wu & Zhao, 2021). The technology-based approach makes the students more interested in using language on the internet than in the traditional approaches (Xiao et al., 2021). While the vast learning opportunities in different contexts and in students' daily lives could complement formal learning, they are often neglected by teachers and students (Elham & Mohsen, 2016).

Precisely, the prominent advancement of technology in the educational sector has substantially aided the continuity of the learning experience across diverse learning contexts (Abdullah & Hashim, 2021). The learning contexts of this study refer to time, space, and situations related to language or word usage, which are all aspects of the language learning environment (Wong & Looi, 2010; Kaya & Etin-Kaya, 2021). With the increasing interest in creating language learning contexts in which authentic and mobile-assisted learning can be encompassed, seamless learning recognises the concept of enabling learners to assimilate knowledge when the stimulus to learn is triggered without any restrictive boundaries (Abdullah & Hashim, 2021; Zhao, 2021).

Hence, this study advocates a seamless language learning design and a combination of formal and informal learning, individual and social learning, and virtual and physical learning environments with the mixed usage of a mobile device and social media platform, DingTalk. The rationale for selecting this design is to promote autonomous learning and translate in-class language learning to practical, real-life scenarios through a seamless learning experience across various contexts.

Methodology
Participants
The participants of the study comprised of 8 male and female CFL students from Cambodia (mean age, 21.1years; 4 males and 4 females). Specifically, the students voluntarily enrolled in an eight-week course in accordance with the online learning mode at the X University in China. Based on the institute's placement test concerning Chinese language proficiency, they managed to attain HSK level 2 but have not achieved the proficiency of HSK level 3. However,

they were expected to successfully pass the HSK (Chinese proficiency test or Hanyu Shuiping Kaoshi) level 3 after completing the HSK level 3 course. As a whole, these students are capable of generating artifacts in Chinese and actively participate in discussions on social media platforms.

Seamless Language Learning Design
The seamless language learning design of this study comprised 4 phases in Figure 1.
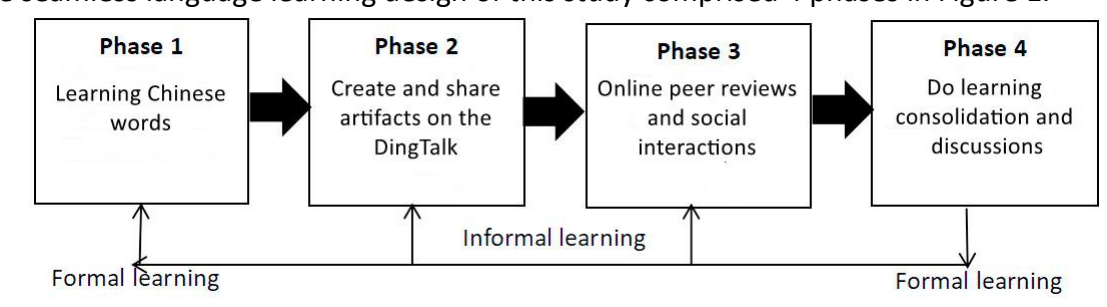

Figure 1. Four phases of seamless language learning design
(Adapted from Wong et al., 2010)

In the initial phase which lasted for 8 sessions in 4 weeks, the instructor assigned 60 minutes teaching for every classroom formal learning session in order to inculcate new words according to the HSK level 3 Standard textbook passages, thereby aiding students in preparing for further outside-the-classroom contextualised learning activities.

Concurrently, students were instructed by the instructor to appropriately utilise their mobile phones during the second phase. Subsequently, they proactively generated artifacts comprising sentences formulated through target vocabulary and shared their generated artifacts on the HSK level 3 learning circle of the DingTalk platform.

During the third phase, students were permitted to post their artifacts on DingTalk for further peer reviews and social interaction among their acquaintances. Additionally, they were allowed to comment on each other's posts and describe the portrayed online images. This social interaction is essential as to make sure that the vocabulary learned is in active use and not just as passive vocabulary input during formal teaching time.

In the final phase, students reverted to formal learning space to engage in learning consolidation. Subsequently, the instructor allocated 20 minutes of each session for lively debates on the students' artifacts. This is also vital step in deepening the mastering of vocabulary learned to ensure vocabulary growth as learners will be pointed up the mistakes they have made in the artifacts creation process.

Ideally, the plausible explanation for this design stems from strong criticism meted out to the traditional approaches of vocabulary training with respect to imparting second-hand de-contextualised experiences, while the latter method fosters the notion of contextualised learning. Particularly in the case of Chinese vocabulary internalisation, this context aware design emphasises the contextual utilisation of vocabulary in authentic situations.

Instrument
DingTalk, a well-known social media platform, is a techno-pedagogical model that correlates formal language learning in the classroom with language application and reflection processes in student's everyday affairs and engages students in the sustained development of social

media as an online platform (Zhang, 2021). In conjunction with the function of technology-based Learning Circle of DingTalk (LCDT), LCDT bestows novices with an adequate learning space (Figure 2). Moreover, students could select their personal preference, post their own photos and sentences online, and converse with others in Chinese. Furthermore, members of the learning circle were allowed to comment, like, etc. Nevertheless, the functions of location-based service and of LCDT permitted users to capture photographs and post generated artifacts irrespective of time and place with their mobile devices.
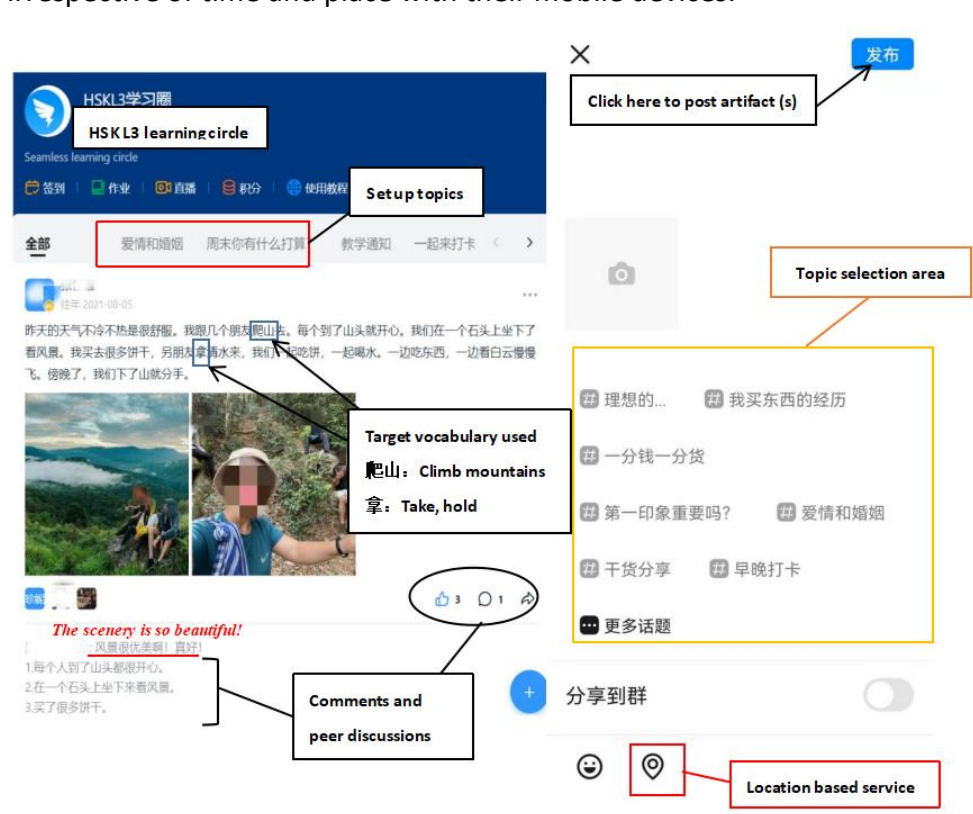

Figure 2. Seamless vocabulary learning on the HSK Level 3 Learning Circle of DingTalk (LCDT) platform

Research Design

An assortment of data collection and analytical procedures were employed to encapsulate the cross contextual nature of seamless learning. In addition, a dynamic trace of student artifact generation using the DingTalk platform was conducted. At the conclusion of the 4 design phases, students were individually interviewed to evaluate their cognitive processes in vocabulary-context associations. Specifically, they were obligated to self-report their observations and experiences in diverse contexts for the selected vocabulary. Moreover, the interviews were analysed based on the framework presented by Wong et al. (2010). Finally, three types of cognitive activities (Wong et al, 2010) in relation to artifact creation were identified among the different contexts as follows:

      Type 1: Artifact creation by given photos/ scenarios.

      Method: Students make sentence or paragraph artifacts that are best representing the object/ human/ situation in the given photos.

      Type 2: Artifact creation by matched situations/ scenarios.

Method: Students are given target vocabulary to look for suitable situations/ scenarios to make sentence or paragraph artifacts that are best representing the target vocabulary.

Type 3: Artifact creation by establishing own situations/ scenarios.

Method: Students establish a context or situation and simultaneously collaborating it with the target words, with photo taking or download photos online, students will make sentence or paragraph artifacts.

Based on the three types, examples of artifacts creation by students in the study are displayed in Table 1 below:

Table 1. Examples of artifacts creation by students in the study

Types	Artifact screenshots	Sentences or paragraphs making	Contexts
Type 1		我有一个不好的**习惯** 那就是我喜欢熬夜。昨天午夜, 我把一本故事书看完了。 没想到明天会起床晚了 上课很迟到也很**累**。我发现我也**忘记**做了作业。以后不会一样做了。 **(Target words: 习惯、累、忘记)** I have a bad **habit** that I like to stay up all night. I finished reading a storybook at midnight yesterday. I didn't expect to get up late tomorrow; I was very late for class and very **tired**. I found that I also **forgot** to do my homework. I won't do the same again. **(Target words: habit, tired, forget)**	Apartment
Type 2		今天超市里做**活动**，**牛奶**一箱30块！好便宜！数量有限，先到先得。 **(Target words: 活动、牛奶)** There's a **sale** at the supermarket today. **Milk** costs 30 yuan a case! So cheap! There are a limited number of these items available; first come, first served. **(Target words: sale, milk)**	Other place (supermarket)

| Type 3 | | 今天本来约了一个朋友一起吃烧烤的，他**忘记**了没来。结果就我一个人，一**双**筷子，喝了两**瓶**啤酒，吃完自己做地铁回来宿舍了，他真的是贵人多忘事呀，
(Target words: 忘记、双、瓶)
I had an appointment with a friend for BBQ today, but he **forgot** to come. In the end, I was alone, with a **pair** of chopsticks, drank two **bottles** of beer, and came back to the dormitory after eating and making the subway myself.
(Target words: forget, pair, bottle) | Other place (restaurant) |

In order to conduct a detailed examination of the student's perception in relation to the seamless design, they were requested to report their impression of the learning experience throughout the course of the study during face to face semi-structured interview sessions. In particular, the interviews were conducted by the researcher lasting approximately 10 minutes for each session, which included the following questions:

(1) Are you comfortable with the Chinese HSK level 3 vocabulary learning through your mobile device outside of the classroom (at home, on campus, and other places, etc.)?

(2) Are you enthusiastic about posting Chinese content on DingTalk, the social media platform with the inclusion of enhanced vocabulary acquired during formal classroom sessions?

(3) What are your views on the importance of guided informal learning under seamless Chinese HSK Level 3 vocabulary enhancement after class hours in elevating the mastery of Chinese vocabulary?

(4) How would you express your thoughts on the user friendliness of the DingTalk learning platform for posting Chinese artifacts? What form of hindrances did you encounter?

Subsequently, the submitted responses pertaining to the 4 questions were transcribed and assessed to garner a profound insight into the student's overall disposition towards the learning approach. Vital findings pertaining to the interview are discussed below.

Nevertheless, the instructor was mandated to write a reflective journal to elucidate their discernment and potential hurdles involved. However the findings on the reflective journal will not be discussed in this article due to the limit of article length.

Findings and Discussions
Descriptive Statistics of Students' Artifact Creation
Over the course of the eight-week study, the students created 138 sets of artifacts on the DingTalk platform. Based on instructor's reflective journal and interview results, a multitude of analyses were carried out using the data to derive acceptable patterns. In particular, Table 2 represents the descriptive statistics for the respondents' cognitive activities in the generation of artifacts across diverse Chinese contexts.

Table 2. Respondents' cognitive activities in artifact creations across diverse contexts

Context	Type 1	Type 2	Type 3	Uncertain	Total
Classroom	4	4	16	2	26
Campus	5	8	8	2	23
Apartment	13	9	13	4	39
Other places	15	21	8	6	60
Total	34	41	49	14	138

As evident from Table 2, the artifact generation contexts were categorised into four settings—classroom, campus, apartment, and other places. In five of the total cases, the students failed to recollect the employed methods of artifact creation, thereby hindering the identification of their thought process. Subsequently, these instances were classified as 'Uncertain'. In view of an online medium, the pertinent context of classroom alludes to the extent of student interaction emanating from the language instructor's contributions in formal lessons, as showcased in Table 2. In terms of Type 1, they were generated under the supervision of the language instructor. By considering Type 1 as a suitable example, the instructor provided photos or scenarios, thereby enabling students to practice valuable learning activities.

As the primary goal of this study encompassed the motivation of students to inculcate autonomous learning and rephrase in-class language knowledge in realistic situations, the role of instructor's intervention was mandatory for the initial four weeks. Subsequently, the instructor would periodically assign the target vocabulary once a week and formulate suitable practice settings for students. Correspondingly, type 2 is also completed through instructor's intervention. At the behest of their Chinese language instructor, students were authorised to use their mobile phones as deemed necessary and also pursue independent learning. As showcased in Type 3, 49 artifacts were generated by students who opted to download images online to produce requisite scenes.

Interview Results

The findings of the interview conducted with the students and the instructor revealed their extent of interest (87.5%) in the seamless learning design. Based on the results, 100% of the students were content with the Chinese HSK level 3 vocabulary enhancement through mobile devices outside the classroom (at home, on campus, and other places, etc.) In regards to their opinions on the seamless Chinese HSK level 3 vocabulary learning during after class hours, the students highlighted the significance of constant motivation, adequate practice, and periodic reviews to assess their scope of acquired knowledge in formal classrooms, thereby enabling them to enhance the mastery of Chinese vocabulary (87.5%).

In the matter of online peer-to-peer discussions, the students acknowledged comments and 'likes' as a motivating factor and the role of the peer assessment strategy in aiding their process of artifact creation (87.5%). Contrarily, a few of them cited erroneous comments by their peers and wished for active presence of the instructor during lively discourse. Additionally, three students pointed out the inability of modifying their Chinese artifacts after posting them on the DingTalk learning platform, which impeded their overall drive to generate further artifacts.

Subsequently, the analysis of the interview with the instructor revealed that the design was useful for Chinese vocabulary learning despite the pre-emptive identification of

key hurdles during the artifact creation process. Besides, according to the instructor's refection, the instructor believed that the design could be enhanced by imparting training to students in conformity with the artifact creation in the virtual space and accommodates suitable prospective amendments.

Consequently, the artifacts were produced across a multitude of environments. Regarding specific backgrounds, students were inclined to download images online and include antique outdoor photographs to continuously generate artifacts, which designates outdoors as a prominent setting in this study. Conversely, with the ongoing proceedings of seamless learning experience across diverse contexts, students have been determined to create surplus artifacts outside the classroom. Specifically, the context of other places managed to attain 60 artifacts, which accounts for approximately 43.47%. In view of the unforeseen COVID-19 pandemic, they only carried out seamless learning activities at their apartment, on campus, and in other safer places near the university (such as supermarkets, shopping malls, restaurants, and others). Additionally, Table 2 showcases equivalent usage of type 1 and type 3 by students in their apartments, which implies that students invest ample time in learning at their residence. Upon further analysis of the artifacts and the interview results, specific instances of students failing to establish abstract vocabulary linked artifacts was evident. Specifically, they believed if the magnitude of vocabulary to be abstract, thereby curtailing depiction through images. For instance, 简单 jiǎndān (simple), 热情 rèqíng (hospitable) and other words are relevant examples.

In order to eliminate the discrepancies stemming from virtual space, the teacher is required to dedicate sufficient time and effort to uphold the role of monitor and facilitator of student discussions. Consequently, such measures will rejuvenate unambitious students and resolve peer assessment errors while simultaneously comprehending their feelings.

Conclusion

In sum, this pilot study outlined a seamless language learning design and emphasised the respondents' learning experiences across diversified contexts. Specifically, such forms of linguistic context emanate from aspiring respondents, which stimulate active meaning making among students through establishing the habit of seeking limitless learning opportunities in daily life experiences as well as virtual spaces, which constitutes the core philosophy of this design. Additionally, it instils the practice of actively seeking academic resources and pursuing the goal of autonomous learning. Based on the teacher's ruminations and the student's responses to the interviews, the notion of seamless language learning fundamental design demonstrated to be exceptionally useful in the realm of Chinese vocabulary learning. In particular, respondents' were bestowed with ample opportunities to observe their peers online and enrich both their vocabulary and artifact creation skills, amend their routine task, and strive to attain outstanding quality. Moreover, online reviews provided favourable circumstances for social interactions in a virtual environment, thereby enhancing shared perspectives and experiences in a generalised learning environment. Despite the prevalence of numerous hurdles to the pilot study which should have been pre-emptively considered, this seamless design integrated formal and informal learning, individual and social learning, virtual and physical learning environments which proved to exceedingly advantageous. In the foreseeable future, supplementary investigations should be conducted to ascertain diverse seamless designs under a multitude of circumstances in order to garner an extensive perspective on feasible designs for diversified language training features.

Furthermore, future designs should incorporate the role of instructors while implementing adequate changes to the elements of peer reviews and motivation assessment.

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