A Task-Based Needs Analysis:Mobile App User Interface Design For An English-Chinese Bilingual Course

Zhou Shen[a]

[a] School of Education, University of Michigan--Ann Arbor, USA

Abstract

Purpose – The purpose of this paper is to conduct a task-based needs analysis for a Chinese–English bilingual elective course in mobile app UI design at Shanghai Shanda University. The study aims to identify the target UI design tasks required for entry-level practice and to anticipate the linguistic challenges learners may face when performing these tasks bilingually, drawing on task-based language teaching and needs analysis frameworks.

Design/Methodology/Approach – Based on a mixed-methods triangulation design, the study synthesises data from multiple sources, including insiders. Data were collected through an uninstructed interview, semi-structured interviews, and an online questionnaire administered via Qualtrics to prospective students.

Findings – The findings identified six priority target tasks for an introductory bilingual UI design course. While students showed the strongest interest in visually salient tasks, domain experts emphasised foundational process tasks as essential prerequisites for integrated interface design. Linguistically, results indicated generally low English proficiency and limited comfort with English production; learners reported relatively greater ease with English input-oriented activities than with speaking, listening to instruction in English, or presenting work in English.

Research Implications – For bilingual content course design, the study highlights the need to balance learner-perceived interests with target-situation demands through staged task sequencing and scaffolded language support. Pedagogically, it suggests prioritising domain-specific vocabulary and reading comprehension at the initial stage, while gradually increasing opportunities for structured English speaking and writing as learners' confidence and proficiency develop. More broadly, the study demonstrates the value of triangulating insider and outsider perspectives to enhance the validity of task-based needs analysis and to inform syllabus and materials development.

[a] First Author, E-mail:sophiemmsz@gmail.com

I. Introduction

Mobile app user interface (UI) design has become a rapidly expanding field in China over the past decade. By streamlining user interaction and enhancing usability, UI design has been adopted across sectors such as business, finance, healthcare, communication, and education. Alongside this growth, employers increasingly seek UI designers who can work bilingually in Chinese and English, particularly in major cities such as Beijing, Shanghai, Guangzhou, and Shenzhen, where English is frequently used in cross-border collaboration. Strong bilingual competence enables designers and firms to communicate with international clients, use English-language design tools and documentation, and distribute products to global markets. In response to this demand, the Department of Media and Communication at Shanghai Shanda University launched a task-based Chinese–English bilingual elective course in mobile app UI design in Spring 2016. This study conducts a task-based needs analysis to (a) identify key target tasks for entry-level UI design practice and (b) anticipate potential linguistic challenges when learners perform these tasks in Chinese and English. Findings are expected to inform subsequent syllabus design and materials development.

II. Review of Literature

Task-based syllabus has been widely adopted in English for Specific Purposes (ESP) courses, on the grounds that teaching content knowledge coincides with the fundamental idea of using real-world tasks in task-based curriculum (Huh, 2006). Needs analysis (NA), the first step in developing a task-based program (Long & Norris, 2000), is of fundamental importance, because a one-size-fits-all approach can no longer meet the diverse individual and societal needs (Long, 2005). A solid task-based curriculum, therefore, should build upon a reliable and valid needs analysis in identifying real-world activities and increasing learners' interest and engagement in performing the tasks (Robinson, 2001;Qian Liu, Yuanji Zhang, Xiaoqing Sun.,2025).

It is important to note that a reliable task-based needs analysis is learner or group specific, fluid and embedded in local context (e.g. Bartlett, 2005; Kellerman et al, 2005; Lett, 2005;Liu, Q., Xiang, R., Yang, Q., & Haq, S. ul. ,2025). stated that the diverse needs of individuals need to be aggregated into a workable number of needs profiles so that the world language education can remain affordable and practicable. 'Needs' therefore subdivides into objective needs and subjective needs, in which "objective needs can be deduced by parties other than the learners themselves" (p. 146) and subjective needs refer to learners' personal statement of language use. Van Avermaet and Gysen also mentioned that curriculum design should strike a balance between subjective and objective needs. On the one hand, needs analysis should not be solely pitched upon learners' subjective needs, because their linguistic needs are often based on their past experience, which may not provide a complete and clear picture of their real linguistic demand. On the other hand, needs analysis should not be solely based on the objective needs, because learners will become demotivated from performing tasks that are irrelevant to their personal needs and interests.

Therefore, a task-based needs analysis differs from the traditional needs analysis that only focuses on specific linguistic components. A task-based needs analysis treats tasks as the analytic units, and the analysis is set out to consider both individual needs and societal needs. Long (2005) convincingly argued that a reliable and valid needs analysis should include multiple sources and different methods. In particular, Long emphasized the need to triangulate different sources and methods, which include acquiring information from both insiders and outsiders through a mix-methods approach. In the overview of NA methodology from 2000 to 2014, Serafini et al. (2015) suggested that while more recent studies have tried to incorporate mix-methods design, the source of needs analysis remains incomprehensive. Only a few studies have incorporated triangulation methods and evaluated the validity of using multiple sources and methods (e.g. Spence & Liu, 2013; Mancho-Barés and Llurda, 2013; Lambert, 2010; Evans, 2010, 2013). In addition, both insiders' and outsiders' perspectives should be included (Long, 2005; Serafini et al. 2015) in order to better inform the analysis. Insiders include but are not limited to domain experts and in-service learners. Outsiders, on the other hand, include linguists, teachers, administrators, and so forth. However, few studies have compared and contrasted the insights and information from both sources.

In Spence and Liu (2013) study, needs analysis was conducted in response to the lack of English skills needed by engineers in Taiwan region's high-tech sector. Online questionnaires and semi-structured interviews were administered to assess the proficiency of integration engineers. Participants were asked several questions related to the use of English at workplace, such as the frequency of using the four English skills (reading, writing, speaking and listening) in performing specific tasks. Moreover, customer interviews and teleconference observations were conducted in order to achieve the triangulation of sources and methods in the analysis. Results indicated that email was the most frequently used mode of communication with foreign customers. In addition, it was recommended to use authentic work-related materials, imitate the workplace environment, improve public speaking skills, and provide genre and style based instructions in writing. However, Spence and Liu's study failed to obtain domain experts' insights, which are the group of people who are capable of supplying high quality information on high-tech English discourse. In addition, the interviews and questionnaires were delivered in English throughout the study. Since none of the informants had English as their native language, this condition imposed potential barrier for the participants to express thoughts and follow instructions.

Mancho-Barés and Llurda (2013) conducted a study that consulted with three sources in order to provide an effective business English course, namely, institutional foreign language policy, business English students, and local business representatives from different sectors. These sources were triangulated using both qualitative and quantitative methods. Results indicated that more attention should be allocated to speaking and specific vocabulary training. Additionally, study abroad was found to be linguistically and mentally beneficial and was therefore recommended in the study. They also suggested that more rich business routine tasks modeled by non-native speaker should be implemented. However, despite Mancho-Barés and Llurda's inclusion of the domain experts' perspectives, they failed to consider outsider's perspectives, which may bias the results. Though outsiders, such as teachers and applied linguists, were not able to offer domain-specific opinions, they served as

an important source in instrument and NA procedure development. The same problem resided in Evans (2013) needs analysis on business English course. Although he had investigated the perspectives from domain experts (business professionals) and potential learners (accountant and banker) through case study, interview and questionnaire, the study lacked outsiders' input.

Finally, while a substantial number of recent second language task-based NA studies have been conducted on language course in academic sector (e.g. Mancho-Barés and Llurda, 2013; Lambert, 2010; Hill & Tschudi, 2011; Chaudron et al., 2005), language for specific content course (e.g. Xhaferi and Xhaferi, 2011; Kassim and Ali, 2010; Chostelidou; 2010; Kaewpet; 2009; Hoekje, 2007; Huh, 2006; Pritchard & Nasr, 2004; Sullivan & Girginer, 2002; Bosher & Smalkoski, 2002), and language training in industrial sectors (e.g. Serafini et al., 2015; Spence & Liu, 2013; Evans, 2011, 2013; Lockwood, 2012; Wozniak, 2010; Sesek, 2007; Cowling, 2007; Gilabert; 2005; Chew, 2005; Li So-mui and Mead, 2000, Frank, 2000; Edwards; 2000), few needs analysis studies have been conducted on bilingual content courses. Therefore, the current study intends to build the gap and contribute to the existing NA literature by exploring learners' needs in a Chinese-English bilingual setting by triangulating multiple sources and multiple methods with both insiders' and outsider's insights. Interviews and questionnaires were administered in a bilingual format to increase the validity of sources. Data pertaining to each source collected through quantitative or qualitative methods will be compared and contrasted within and across groups in order to generate a reliable finalized result. This study also attempts to shed light on future task-based syllabus and curriculum design on the basis of a list of identified target tasks and potential linguistic challenges detected in the study.

III. Research Questions

The current study intends to identify target tasks for the mobile App UI design bilingual course and anticipate the potential language challenges by addressing the following research questions:

1.What are the target tasks that will enable the students to perform mobile App UI design in the industrial sectors?

2.What are the potential linguistic challenges when students perform the target tasks within and outside of the classroom settings?

IV. Context and the UI Bilingual Course

In the spring semester of 2016, the Department of Media and Communication at Shanghai Shanda University will start to offer a task-based Chinese-English bilingual elective course in mobile App UI design for the purpose of preparing students for jobs in bilingual UI design. The class will meet twice a week for two hours each time. The class will be held in a computer lab for nine weeks. The majority of the students are

undergraduate students majoring in Visual Art and Design or in Journalism with a traditional track or Internet and new media track. The average size of the class is expected to be 60 students. The UI bilingual course is offered for the first time at this school, therefore a wide range of challenges is expected even before the course starts. For example, considering the majority of students enrolled in this course are non-UI major students, the course is set to be an introductory level course. In addition, the overall English proficiency of the students at Shanda is estimated to be quite low. Needs analysis, therefore, will help to identify and predict the potential challenges underlying the bilingual curriculum implementation.

V. Methodology

Table 1 illustrates the methods used in the study. Inspired by Long's (2005) and Serafini et al.'s (2015) notion of a valid and reliable NA, the current study triangulated multiple sources (both insiders and outsiders) and methods (qualitative and quantitative). Moving from an inductive to a more deductive approach, this study started with conducting uninstructed and semi-structured interviews with the course instructor, bilingual teachers, pre-service students, and domain experts. Preliminary results were compared within interview groups, and were further utilized in the close-ended questionnaires intended for the potential students. Results from the interview and the questionnaire were compared to generate the final results. The following sections discuss the details of each facet.

Table 1. Needs Analysis: Sources, Methods, and Triangulation

Category		Content
Sources	Insider	UI design experts in academia and industrial sectors; pre-service and potential students
	Outsider	The course instructor; experienced bilingual course teachers; applied linguists
	Others	Books, bilingual program documents, UI design discourse samples from online resources
Methods	Qualitative	Uninstructed interviews; semi-structured interviews;
	Quantitative	Online questionnaires
Triangulation	Source x Method	Uninstructed interview * course instructor
		Semi-structured interviews * course instructor, experienced bilingual teachers; pre-service students; domain experts
		Questionnaires * potential students

VI. Uninstructed and Semi-structured Interview Procedures and Results

The data collection was preceded by uninstructed and semi-structured interviews. The interview data was collected through email, online Skype, Wechat voice chat, and a face-to-face interview at the faculty office at Shanghai Shanda University. Interviewees included the UI bilingual course instructor, two experienced bilingual course teachers, a group of applied linguists who had taken the task-based language teaching course at Georgetown University, one UI design expert working in the academia, three experts working in the industrial sectors, and five pre-service learners in UI design courses.

The principle investigator first contacted the course instructor and arranged a one-hour online in-depth uninstructed interview in Chinese. The purpose of this uninstructed interview was to familiarize the interviewee with the context, explore the potential challenges and identify problems. The probing questions were designed to be as open as possible, on the grounds that non-directive interviews are in general less constrained by pre-determined questions and response options, and therefore would allow more detailed, valid opinions and valuable insights to emerge (Lincoln & Guba, 1985; Chaudron et al., 2005; Kellerman et al., 2005; Long, 2005).

The uninstructed interview was followed by several semi-structured interviews with both insiders (domain experts and pre-service learners) and outsiders (course instructor and bilingual teachers). The principle investigator and a group of applied linguists brainstormed a series of pre-formulated questions based on the uninstructed-interview with the course instructor. Questions relevant to the UI design content were revised according to the course instructor's feedback before conducting the semi-structured interviews.

Five pre-service learners (2 females and 3 males) aged between 24 and 27 years (M = 25.2; SD = 1.304) volunteered to participate in the current study. They are current or past graduate students at the University of Michigan, majoring in Information Science. All five pre-service learners are native speakers of Chinese, who have taken at least two UI design courses in their second language English. Their coursework in UI design ranged from introductory level to advanced level. The semi-structured interview was conducted through email. Appendix A shows the semi-structured interview questions with pre-service learners. Questions covered a list of skills that attracted the learners' interest, skills they wanted to learn, challenges in carrying out certain tasks, and their language barriers in performing potential target tasks. These pre-formulated questions were delivered in English and were emailed to all five learners. Return rate was 100%, though some questions were left unfinished.

Although pre-service learners can provide valuable suggestions from the learners' perspective, they are also likely to provide biased information due to a lack of expert knowledge (Beatty & Chan, 1984). More often than not, their responses are inadequate in describing their language needs (Long, 2005). Accordingly, domain experts from the academic and industrial sector were included to inform the current study in order to obtain well-informed and objective insiders' knowledge. It is suggested that domain experts are able to provide insiders' knowledge (Tarone, 1981), and are reliable sources for identifying the target tasks (Gilabert, 2005). Serafini et al. (2015) also noted that insider knowledge from the domain experts is the barest minimum

condition for validity. The domain expert from academia in the current study is a Chinese professor in the School of Information at Shanghai Shanda University who has been teaching UI design course for more than 10 years. Semi-structured interview was conducted face-to-face in Chinese by a trained research assistant. Audio sound was recorded under the consent of the informant. The semi-structured interview intended to discuss potential challenges of teaching UI design courses at Shanda University and seek for feedback and suggestions, based on a preliminary list of target tasks that emerged from the uninstructed interview. Another group of domain experts were from the industrial sectors, including three alumni from the School of Information of the University of Michigan. They have all worked at UI design companies in the U.S. Semi-structured interview questions included the language use at their workplaces, useful skills and tasks, and potential challenges of implementing these tasks. Data was collected through Wechat (a messaging and calling app) voice chat and emails. All the domain experts from the academic and industrial sector were given a list of preliminary target tasks and were asked to rank the importance and usefulness of the tasks in order.

With regard to the semi-structured interview with outsiders, it was conducted with the course instructor and two instructors who teach bilingual course at Shanghai Shanda University. Data was collected through Wechat voice chat and Skype. The purpose of the interviews was to discuss linguistic challenges they had encountered in the past. Since the App mobile UI design course will be offered for the first time at this school, no bilingual instructor with previous experience is available. Therefore, two instructors who have taught bilingual course at the Department of Media and Communication were selected in order to inform the current study. Questions included challenges and suggestions of teaching a bilingual course, the proportion of use of English and Chinese in reading, listening, speaking and writing. In addition, the professor and a group of graduate students in applied linguistics from TBLT course served as outsider sources for providing feedback and comments on the installment.

Table 2 shows a list of preliminary target tasks from the interviews with insiders and outsiders. A total of eight potential target tasks in App UI design were selected as of paramount importance in an introductory level course. Tasks were sequenced in the natural content progression order. Four tasks were indicated as interesting and crucial skill to learn by pre-service learners. Most learners expressed their interest in designing dynamic icons and animated effects. Comparing to pre-service learners' intuition, domain experts suggested five tasks: draft preliminary ideas, draw wireframes and prototypes, design dynamic icons and animatic effects, design a range of app icons, and design an integrated UI interface. The first four skills are listed as fundamental stepping-stones for designing an integrated App. Designing a personalized logo, which was not perceived as a prerequisite skill for UI design by the domain experts, was regarded as an interesting and useful skills to pick up by pre-service learners.

Table 2. Results from Uninstructed and Semi-Structured Interview

Potential Target Tasks	Pre-service learners	Domain Experts
Draft preliminary ideas about the functions of the mobile app	√	√
Draw wireframes and prototypes: familiarize with the design procedure for the first draft of the app interface		√
Design a personalized logo	√	
Design dynamic icons and animatic effects	√	√
Create infogaphics for data presentation		
Design banners and pop-up notifications		
Design a range of app icons		√
Design the app interface and integrate all other elements	√	√

Note: task with the check mark indicated important as perceived by respective sources

The semi-structured interviews unveiled some unexpected challenges for implementing the bilingual course. First, the students' involvement and commitment in previous elective bilingual courses was low. Specifically, some students missed classes occasionally, or they were reluctant to participant in discussions, and some students were even doing homework from other courses. Another challenge was that the length of the semester might be too short to cover all the skills required for an integrative task. The course therefore should strive to balance between the depth and breadth of the content. It was suggested that more energy and attention should be devoted to drawing wireframes and prototypes, because enhancing the basic skills for the following sections is critical. With respect to the linguistic challenges, the bilingual instructors stated that the overall English proficiency of the students was between the beginner and intermediate level. One of the bilingual course instructors explained that students felt more comfortable in reading English materials than speaking. She said "I used English in my slides, and my students can understand it, though sometimes they need to look up some words. However, when it comes to speaking, it was really difficult for them. Uhh. I think they are probably also too shy to speak up in front of almost 60 students." She also indicated that using domain-specific English with these students will probably add more challenges.

VII. Questionnaire Procedures and Results

An online questionnaire was created to investigate the interests and challenges of prospective students in

carrying out the target tasks. Preliminary findings from the interviews were incorporated into the questionnaire. Pilot questionnaire included basic information, a list of preliminary target tasks, self-reported Chinese and English proficiency in reading, writing, listening and speaking, frequency of performing related academic activities in both languages, and potential linguistic challenges when performing the target tasks.

The questionnaires were first administered to 5 volunteers, including three experienced applied linguists, one domain expert, and one native speaker of English. The purpose of piloting the questionnaire was to obtain feedback and comments on the design and content. Modifications were made accordingly based on feedback. The finalized version was delivered in Chinese and English through Qualtrics to 120 students from the Department of Media and Communication at Shanda University. A total of 73 questionnaires were returned. Students who indicated no interest in talking the course in 2016 were excluded from the analysis, and the final pool was reduced to 48 students (female = 35; male = 13) aged between 18 and 26 years (M = 20; SD = 1.142). They were all Chinese native speakers.

Table 3 shows the percentage of students' interest in the potential target tasks. Students were asked in the questionnaire to "indicate the degree to which you think the following tasks are interesting and useful to you." Results indicated that most students were interested in designing a personalized logo, which was in line with previous findings from the semi-structured interviews with pre-service students. Designing dynamic icons and animated effect, app icons, integrative interface were ranked as secondary important and interesting to the prospective learners. Students showed slightly less interest in drafting preliminary ideas about mobile App function and drawing wireframes and prototypes, which were regarded as of primary importance by the domain experts. Students expressed the least interest in creating info-graphics for data presentation and design banners and pop-up notifications, which were considered as important but not requisite by domain experts and pre-service learners.

Table 3. Rankings of Potential Students' Interest in the Target Task (n = 48)

Preliminary Target Tasks	Not al all	Not very	So-so	Somewhat	Very much	M	SD
Draft preliminary ideas about the functions of the mobile app	0.00%	0.00%	8.30%	54.20%	35.40%	4.277	0.6151
Draw wireframes and prototypes: familiarize with the design procedure for the first draft of the app interface	0.00%	0.00%	6.30%	56.30%	37.50%	4.313	0.5891
Design a personalized logo	0.00%	2.10%	4.20%	25%	68%	4.604	0.676
Design dynamic icons and animatic effects	2.10%	2.10%	12.50%	39.60%	43.80%	4.208	0.898
Create infographics for data presentation	0.00%	2.10%	22.90%	35.40%	39.60%	4.125	0.841
Design banners and pop-up notifications	6.30%	8.30%	33.30%	25.00%	27.10%	3.583	1.164

Design a series of app icons, such as wechat icon	0.00%	2.10%	16.70%	37.50%	43.80%	4.229	0.805
Design the app interface and integrate all other elements	0.00%	2.10%	8.30%	45.80%	43.80%	4.313	0.719

The results of the self-reported language proficiency indicated that the majority of the students' overall English proficiency was below the intermediate level (n = 37, or 77.1%). More learners reported that their English proficiency in reading (n = 17, or 35.5%) was above intermediate level than in speaking (n = 15, or 30.4%), writing (n = 12, or 25%) and listening (n = 14, or 29.2%) proficiencies. In addition, learners were asked to indicate the frequency of a series of academic activities in both languages, such as reading books or academic materials in English or Chinese, or present work in English or Chinese. Results indicated that most students never or rarely read in English (n = 39, or 81.3%), discussed questions in English with peers and professors (n = 39, or 81.2%), or presented work in English (n = 37, or 77.1%). With regard to specific challenges in performing the task in English (see Table 4 below), results suggested that students were more comfortable in reading academic materials and using UI design software in English than performing activities that involved English language production. Consistent with previous findings, students were not willing to speak English in class. In addition, the students may have difficulties in understanding the instructor if the teachers delivered the lessons in English.

Table 4. Rankings for Comfortable Level of Performing Tasks in English (n = 48)

Tasks	Not at all	Not very	So-so	Somewhat	Very much	M	SD
Instructor teaches in English	20.80%	41.70%	33.30%	4.20%	0.00%	2.208	0.824
Read slides and materials in English	27.10%	37.50%	22.90%	10.40%	0.00%	2.17	0.9628
Discuss with peers in group in English	20.80%	47.90%	20.80%	8.30%	0.00%	2.17	0.8678
Present my work in English	20.80%	50%	20.80%	4.20%	2.10%	2.149	0.884
Answer questions in English	18.80%	52.10%	16.70%	8.30%	0.00%	2.152	0.842
Use UI design software in English	18.80%	41.70%	20.80%	14.60%	0.00%	2.326	0.9673

VIII. Discussion

The current study sets out to identify target tasks and explores linguistic challenges in performing these tasks. With regard to the first research question, namely, "what are the target tasks that will enable the students to perform mobile App UI design in industrial sectors," several target tasks emerged from the analysis as a result of triangulation. Both pre-service learners and potential learners acknowledged that designing a personalized logo, dynamic icons and an integrative interface were both important and useful. However, as noted before, learners' needs were subjective and were usually subject to previous experiences. Therefore, the analysis was complemented with domain experts' and outsiders' perspectives. Results indicated a broader scope of target tasks. Specifically, domain experts suggested devoting more attention to drafting preliminary ideas and drawing wireframes and prototypes. Taken together, a total of six target tasks emerged from the analysis, as jointly proposed by a triangulation of different sources and methods.

With respect to the second question, "what are the potential language challenges when students perform the target tasks in and outside of the classroom settings," the current study revealed some unexpected challenges. The results from the potential learners' questionnaires showed that the learners' English proficiency was not only quite low, but they were also not comfortable using English, as the majority of students had rarely conducted academic activities in English, such as discussing ideas and presenting work in English. Therefore, the use of English in bilingual courses may upset the learners by forcing them into an uncomfortable learning environment. This finding is in line with findings in Spence and Liu (2013) about Taiwan region engineers' lack of public speaking skills. They proposed to use authentic world-related materials to overcome speaking anxiety and boost confidence. Additionally, the triangulated data revealed that although the students were uncomfortable in performing the target tasks that pertain to speaking, writing, and listening, they tend to be more comfortable in reading academic materials and using UI design software in English. Therefore training in domain-specific vocabulary in English is recommended in order to prepare the learners in understanding content materials and following instructions while using UI design software. This suggestion aligns with Mancho-Barés and Llurda's (2013) suggestions on the design of a business English course. Taken together, greater attention to reading and vocabulary training in English is needed at the initial stage, considering learners' low language proficiency and individual demand. During this period, Chinese may be the dominant language in performing the tasks, especially those related to language production. As learners advance and become more familiar with domain-specific knowledge, more speaking, listening, and writing exercises should be integrated into the curriculum design, as the learners are expected to perform the target tasks bilingually at the end of the course.

IX. Conclusion and Limitations

This article identified six target tasks for a Chinese–English bilingual course in mobile app UI design through triangulation of three methods (an uninstructed interview, semi-structured interviews, and a questionnaire) and six sources, including both insiders and outsiders. The methodological design closely aligned with the needs

analysis (NA) validity criteria outlined by Serafini et al. (2015), which many previous NA studies have only partially met. Findings highlighted an urgent need to strengthen learners' domain-specific vocabulary and English reading comprehension before introducing more intensive training in English language production (e.g., speaking and writing). In addition, ongoing assessment was recommended for the bilingual course instructor in order to monitor students' development in both domain knowledge and bilingual performance. Continuous assessment would allow instruction to be adjusted responsively over time, for instance by gradually increasing the proportion and complexity of English use in speaking and writing activities as learners' confidence and competence grow.

Despite these contributions, the study had several limitations. First, convenience sampling was used, and stratified random sampling (Long, 2005) was not feasible due to limited access to a broader participant pool. As a result, the findings may not be generalizable beyond the local context. Future studies should employ stratified random sampling where possible to improve representativeness and reliability. Second, discourse analysis was not conducted at this stage to examine prototypical language use in authentic UI design settings. This was largely because participants were not sufficiently proficient to perform fully integrated UI design tasks in English. Nevertheless, discourse analysis remains necessary for subsequent materials development. Future work could collect naturally occurring workplace discourse (e.g., design meetings, critiques, documentation, and client communication) and extract recurrent linguistic features and genre conventions to inform task design and instructional materials.

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Appendix A

Semi-Structured Interview Questions With Pre-Service Learners

1.For the UI design course you took in the past, what were you interested in learning about? What are the useful skills you have learned? You may answer in Chinese or English.

2.While you were taking the UI design course, what else you might have wanted to learn? What worked in your class and what was challenging?

       a.Generate ideas about the functions of an app

       b.Draw wireframes and prototypes for App

       c.Design a logo

       d.Create dynamic icons

       e.Create infographics

       f.Design a banner, such as advertisement and notice

       g.Design a series of app icons, such as wechat icon

       h.Design an App interface

3.Above is a list of App UI design tasks. If you were to carry out these tasks in **English**, which would you think are the more **challenging** ones and why? (list 2-3 items and reasons)

4.If you were to carry out these tasks in **English**, which ones would you think are the **easier** ones and why?

5.If you were to carry out these tasks in **Chinese**, which would you think are the more **challenging** ones and why?

6.If you were to carry out these tasks in **Chinese**, which ones would you think are the **easier** ones and why?