

An easier way to learn a language?

User-centred design of

computer assisted language learning

systems for pragmatics

Liquan Chai

s1226443

Mater of Science in Design Informatics

design
informatics



THE UNIVERSITY of EDINBURGH

informatics

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When a diplomat says “yes”, he means ‘perhaps’; when he says “perhaps”, he means ‘no’; and when he says “no”, he is no diplomat.

When a lady says “no”, she means ‘perhaps’; when she says “perhaps”, she means ‘yes’; and when she says “yes”, she is no lady.

- Voltaire (Quoted, in Spanish, in Escandell 1993.)

Declaration

I declare that this thesis was composed by myself, that the work contained herein is my own except where explicitly stated otherwise in the text, and that this work has not been submitted for any other degree or professional qualification except as specified.

(Liquan Chai)

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Abstract

Chinese college students generally lack ability in oral communications. This mainly because the education system in China focused on the acquisition of the linguistic knowledge rather than the performance in communication. As a result, many Chinese students are good at vocabulary and grammar, but still failed to communicate effectively. In this project, we built a communicative Computer Assisted Language Learning (CALL) system to help individual Chinese students to enhance their ability to use language appropriately different social contexts (i.e. the oral pragmatic competence). We focused on the customer-waiter interactions in a restaurant context, and specifically on the use of polite languages, since from previous research we found that many Chinese students cannot communicate effectively in restaurant scenarios.

We used the learner-centred approach to build the CALL system. By conducting a series of interviews, field experiments, and running a co-design session, we build a corpus that include both authentic native expressions and authentic students' pragmatic mistakes. We then used the corpus, together with the speech recognition and the speech synthesis technology, to build a communicative CALL system that allows students to practice customer-waiter interactions to enhance their pragmatic competence.

The implemented CALL system was also evaluated in two dimensions: the usability and the perceived learning effectiveness. The results showed that students generally agreed that the system is usable, and they have learned some pragmatic knowledge by interacting with the CALL system. Students are also willing see more social contexts are being implemented.

Keywords: Second language learning, User-centred design, Computer assisted language learning, Pragmatics, Polite expressions, Oral communication skills

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1. Introduction

Design context

China has a large English learning population. There were 200 million English learners in 2002 (Bolton, 2002), and after eight years, the size of this population has increased to 400 million (Bolton & Graddol, 2012), which is approximately one third of the total population in China.

However, within this large population, few Chinese learners can use English to communicate effectively. Yang (2006) distinguishes between English learners, the people who learned English as a subject to study, and English users, the people who use English as a tool of communication. He concludes that most Chinese students are English learners rather than English users, due to their inability to communicate effectively. This claim is also supported by the Survey of Language Situation in China, which was conducted by the Ministry of Education in 2006 (Wei, & Su, 2012). The survey reported that 61.54% of the English learners can say some greetings, but only 15.61% of them can conduct daily conversations, and only 3.53% of them can communicate fluently. For people at work, Pang, Zhou, & Fu (2002) conducted a survey of 126 companies and found that about 70% of the officers and employees felt that they are weak at speaking. Specific to Chinese college students, Wu (2008) conducted extensive surveys, in-class observations and semi-structured interviews, and concluded that Chinese college students would place their oral communication ability at a low level, especially for daily communication. Finally, according to the International English Language Testing System (IELTS), the providers of one of the main English language tests, China has the second-lowest average speaking score among the 40 frequent IELTS-taking countries, and within four English aspects, the average score of speaking (5.39) is significantly lower than reading (6.11) and listening (5.9), and only marginally higher than writing (5.37) (Ielts.org, 2018).

Many factors contribute to the difficulties with speaking English that Chinese students face. Firstly, the majority of the English teachers in China use grammar translation (e.g. introduce new vocabulary and sentence structures), and audio-lingual methods (e.g. listen, repeat and recite) to instruct students (Burnaby, & Sun, 1989; Liao, 2004). These methods focus heavily on the linguistic knowledge acquisition and students rarely have the opportunity to speak in class. Secondly, the English textbooks in China are text-intensive (Cortazzi & Jin, 1996). In each section of the book, there always many paragraphs of texts for students to recite, learn new vocabulary, and practice grammar (Wu, 1990). In contrast, few textbooks contain communicative components. Thirdly, there are practical constraints for teachers in China that prevent them from being more communicative. For example, the typical class size in China is about 40-60 people,

which is impossible for teachers to manage if communication activities are involved (Fang, 2010). Besides, some teachers also lack the English proficiency to answer out-of-syllabus questions (Hu, 2010).

Another reason for oral communication difficulties is that the English education in China is exam-driven (Guo, 2016). The main purpose for students to learn English is to pass exams. However, most English exams in China are paper-based, which focus heavily on reading and grammar. Therefore, both teachers and students concentrate on syntax, morphology, and vocabulary rather than oral communicative competence (Rao, 2002; McIntosh, 2015). On one hand, students do not treat oral communication seriously in the classroom; on the other hand, teachers are reluctant to introduce communicative knowledge to students (Cheng, 2004).

Cultural factors are also a cause of the lack of ability in oral communications. The teacher-directed classroom culture makes students reluctant to speak in class (Ting, 1987). According to Wu (2008), many Chinese college students felt that it was unnecessary to communicate inside the classroom, especially when interacting with their classmates. They also felt anxious and not confident to communicate outside the classroom. As a result, they tend to avoid unnecessary communication when interacting with native speakers in authentic situations.

In addition, English does not have any communication function outside the classroom setting in China. Student do not use English in their daily life. Yang, Levesque, & Kim (2005) showed that college students in Beijing rarely speak English to non-native speakers in any setting beyond the classroom. They do not need to speak English in their daily lives, i.e. when they travel, go shopping, dine out, have a haircut, etc.

Despite of the lack of communicative competence, the number of Chinese students who go abroad to study in the English-speaking countries has increased drastically in recent years (Figure 1.1). In the US, Chinese students are the largest group of international students since 2010. The same trend is also true for the UK, for example, China is the main source of international students in the University of Edinburgh (The University of Edinburgh, 2018).

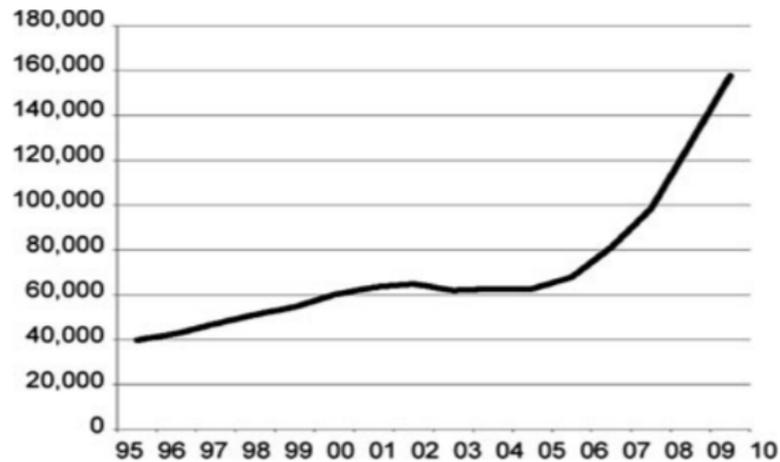


Figure 1.1 The numbers of Chinese students at US universities from 1995 to 2009, from “English in China today: The current popularity of English in China is unprecedented, and has been fuelled by the recent political and social development of Chinese society” by Bolton, K., & Graddol, D., 2012, *English Today*, 28(3), 3-9.

It is likely that when Chinese students first come to an English-speaking country to study, many of them cannot understand other people’s speech and feel that it is difficult to convey their ideas to others. This might seriously affect their living and learning experience. Therefore, how to enhance the communicative competence of Chinese students who preparing to study abroad is an important issue.

Background

In linguistics, language is studied at different levels. Phonetics and phonology is the study of the human’s acoustic system and the use of sound in language. Morphology is the study of the form and variation of words, while lexicon is the study of the meanings of words. Syntax concerns the rules of combination of words, while semantics concerns the meaning of the sentence. Pragmatics is the study of the use of language in context. Within pragmatics, speech act is the concept of describing utterances that have performative functions (Briscoe, 2011).

It seems that in classroom settings, various factors prevent Chinese students from learning to speak fluently, and outside the classroom settings, students’ reluctance to speak and limited practical opportunities make it difficult for Chinese students to enhance their communicative competence.

One possible approach to solve this problem is to combine individual, self-directed learning with computer assisted language learning (CALL) (Levy, 1997). Hyland (2004) showed that compared with practicing speaking in the public, students tend to

practice speaking more actively in private spaces, where they felt less anxious and more confident. Therefore, we can use technologies to assist students to learn English outside the classroom to enhance their communication competence.

For language learning outside of the classroom, research has shown that mobile learning (M-learning; Laouris & Eteokleous, 2005, p.2) has gained popularity among Chinese college students (Zou & Yan, 2014; Li, J., Li, S., & Li, Y., 2016), because these applications are easily accessible and learner-directed (Isaacs, 2012; Steel, 2012). M-Learning involves the use of mobile technology to facilitate the transfer and acquisition of knowledge

However, these apps focus heavily on vocabulary acquisition and grammatical knowledge (Burston, 2014). They use the same pedagogical methods as Chinese teachers do i.e. grammar-translation and audiolingual methods. For example, the most common activities in Duolingo (Duolingo, 2018) is to select the correct words to translate (Figure 1.2 on left) and read aloud the sentences (Figure 1.2 on right). In another English learning application, Memrise (Memrise, 2018), the main type of the learning activity is recognising the meaning of vocabulary words (Figure 1.3).

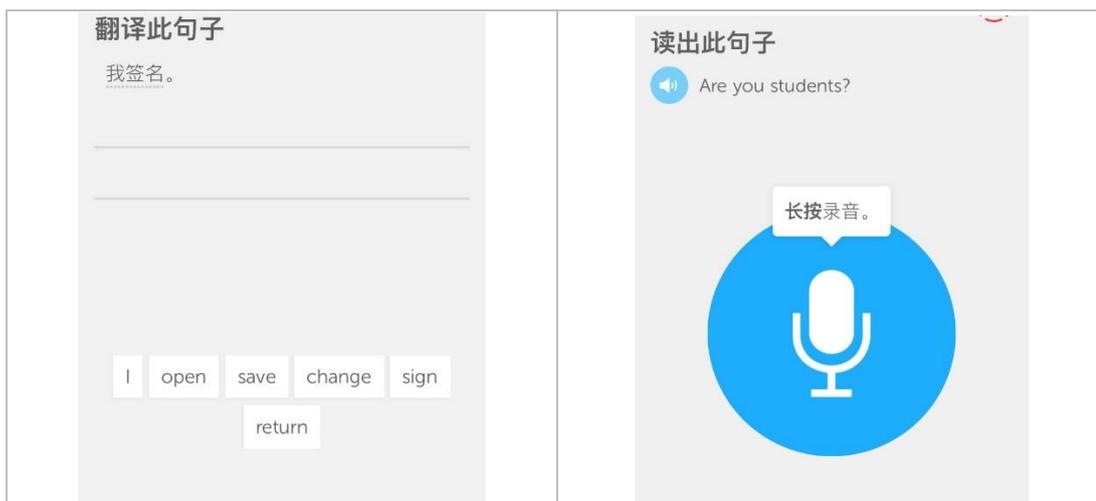


Figure 1.2 The most common activities in Duolingo.

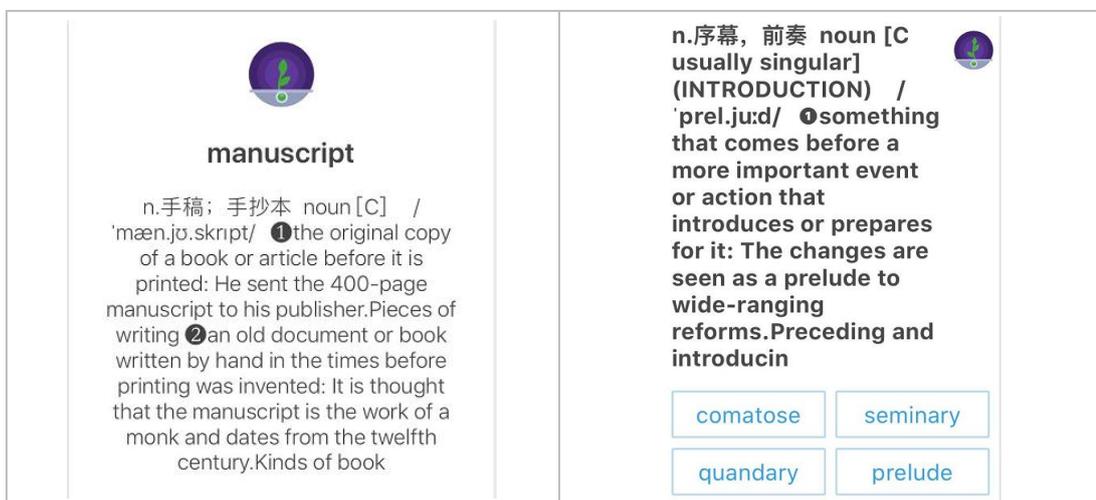


Figure 1.3 The main type of the learning activity in Memrise is vocabulary recognition.

Specific to speaking-learning applications, many of the applications in the market uses “follow-up” reading (跟读, a typical audiolingual method) to enhance learners speaking skills. These applications focus heavily on the pronunciations rather than the situational conversations (e.g. 英语魔方秀 (YingYuMoFangXiu), 英语流利说 (YingyuLiuLiShuo), 英语趣配音 (YingYuQuPeiYin), 扇贝口语 (ShanbeiKouyu)) (Figure 1.4).

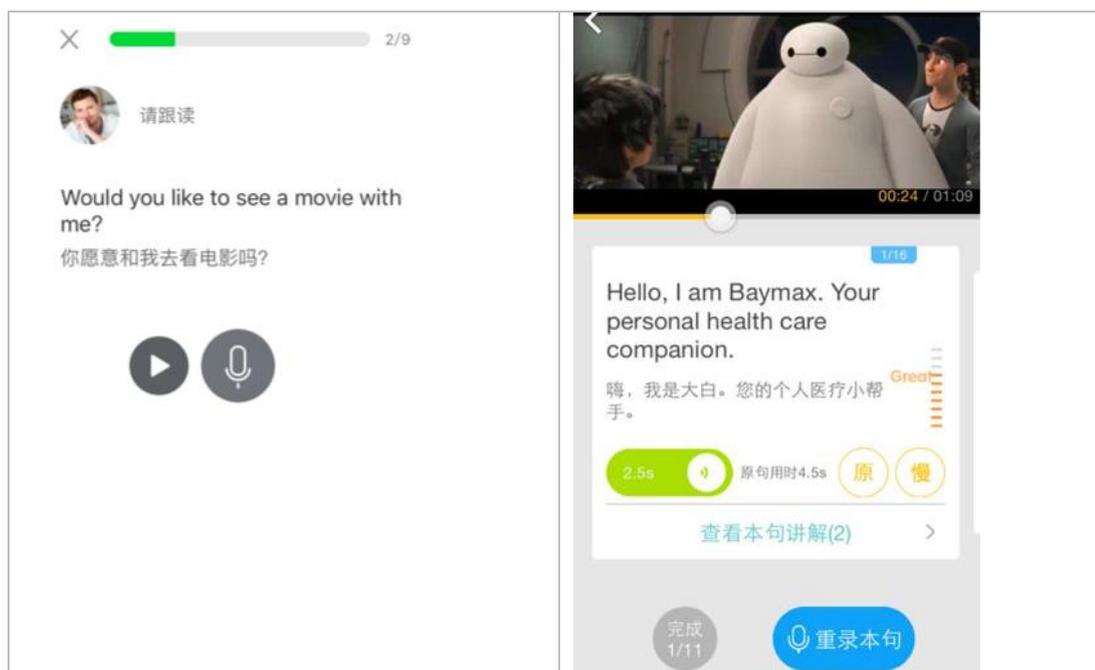


Figure 1.4 Screenshots of speaking-learning applications in China. Most of the uses “listen-read” pattern to teach speaking.

In the course Design Informatics (DI) Project, we conducted an initial user study to help us design an application that was geared towards the main communication needs of Chinese students. We interviewed 16 Chinese postgraduate students and identified the communication difficulties they had encountered. The main issue that we found was that students cannot communicate effectively in unfamiliar scenarios, especially in restaurants and medical settings. Based on this finding, we utilised the idea of communicative language teaching (CLT), which was initially proposed by Hatch (1978) and designed a conversational CALL system to enhance the communicative competence of these students.

In CLT, students learn to use language appropriately to achieve communicative objectives (McDonough et al, 2013, p.23). Similarly, the CALL system we designed is based on the Alexa smart speaker and uses multi-turn dialogues to encourage learners to interact with the system. In a given scenario, learners can practice speaking by expressing meaningful ideas to the smart speaker and observing the smart speaker’s reaction to achieve effective communications (Figure 1.5). The learning process

exploitates the idea of role play (Ladousse, 1987), where the user and the the speaker plays different roles in a specific context and produce meaningful conversations.

During the interaction, first, the user reads information about the scenario and the hints displayed on the mobile application (Figure 1.6). Then, the user is asked to use the English language to express their needs. Alexa produces a reaction based on hard coded dialogue interaction rules.

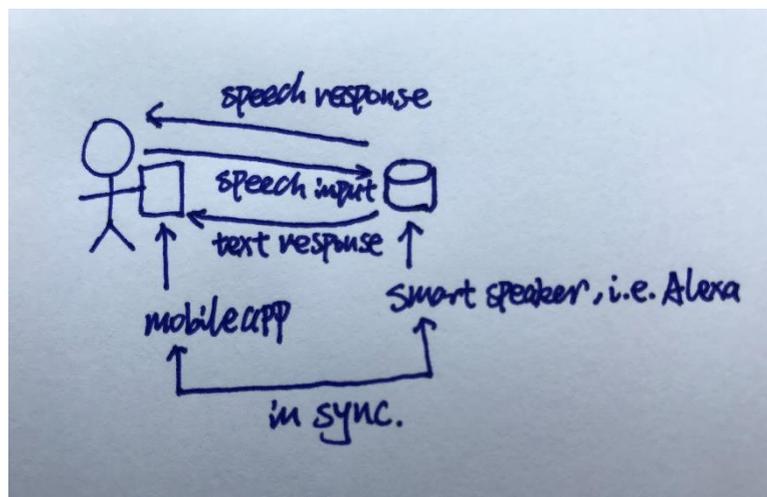


Figure 1.5 The illustration of the interaction process of the prototype build in the DI Project.

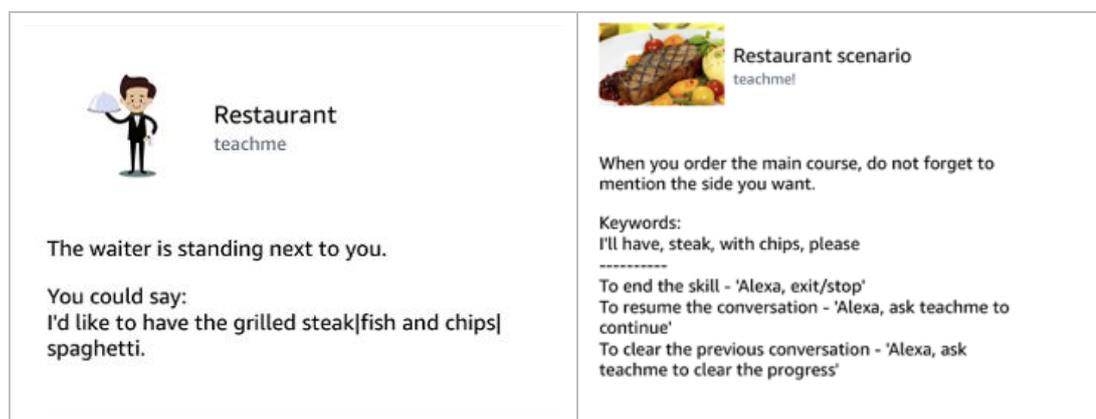


Figure 1.6 Hints displayed on the mobile application. The application has two modes: full sentence hint on the left and keywords hint on the right.

Despite the achievements of the project, there were several limitations. Due to the time constraint, we only implemented two simple scenarios, “order food” and “describe symptom”, which each of them only consists of 6 turns of fixed conversations. Since these conversations are directly extracted from the learning corpus from Microsoft Xiaoying (2018), it might be too simple to simulate real situations. Secondly, in the evaluation, we only evaluated the usability aspect of the prototype, but not on the learning aspect of the CALL system. In addition, the interviews only identified the problematic scenarios, but not on specific problems that students encountered.

Motivation: pragmatic competence

This dissertation project is a continuation of the DI project. Instead of focusing on the implementation aspect of the CALL, we focused on the effectiveness of the CALL with regard to increasing the communicative competence of Chinese students. More specifically, we aimed at enhancing the oral pragmatic communicative competence of Chinese students.

Pragmatic competence is one important aspect of communicative competence (Bachman, & Palmer, 1996; Bagarić & Djigunović, 2007). It is “the ability to use language appropriately in social contexts” (Taguchi, 2009, p.1). Chinese college students not only lack general communicative competence, but they (and sometimes their teachers) may also lack pragmatic competence (He & Yan, 1986; Meng & Liu, 2000; Gao, 2002; Du, 2005; Gong & Sun, 2006). Wu & Chen (2006) surveyed 80 Chinese college students (40 English major students and 40 non-English major students) on their ability to use appropriate expressions in various social contexts and their ability to understand the implications of specific language patterns in various social contexts. They used a series of discourse completion, multiple choice questions, and pragmatic failure identification tasks to test student’s pragmatic competence. The result showed that both English majors and non-English major students failed to use pragmatic routines appropriately. Similarly, Qiao (2014) tested and observed a group of undergraduate students from GuangZhou on their ability to express different speech acts (e.g. apology, request, refuse, greeting, etc.), and she found that Chinese college students is still poor at expressing speech acts appropriately.

For Chinese students who first come to an English-speaking country to study, it is likely that they will encounter situations where they have adequate phonetic, lexical, syntactic and morphological knowledge, since they have met the language requirements imposed by the universities) but still failed to communicate effectively (i.e. pragmatic failure).

At the start of the dissertation project, we invited 1 native English student and 10 Chinese students who are studying in the University of Edinburgh to participate in a simple language experiment. At the experiment, we asked the native speaker to give each of the Chinese student a chocolate separately. Despite all Chinese students claimed that they like chocolates, half of them refused to take the chocolate, as they want to be polite (a typical Chinese cultural pattern named “KeQi”). However, this “polite” action is not perceived by the native speaker, as he thought these Chinese students do not like chocolates. As a result, these participants failed to get the chocolate. The experiment results also showed that Chinese students are unable to use English appropriately in daily contexts.

Project goals and achievements

The primary goal of the dissertation project is to create a CALL system that might help Chinese college students (who are in or plan to study in an English-speaking country) to increase their pragmatic competence in real life situations and evaluate whether the system is effective. Since in the DI project (Chai, 2018), student reported that they cannot communicate effectively in restaurant scenarios, therefore, we decided to focus on the interaction between students and waiters, to help students to express various speech acts politely and appropriately in this context.

The structure of the dissertation is as follows. Firstly, we reviewed the concept of pragmatics, politeness and pragmatic competence. Secondly, we reviewed pragmatistic failures and common pragmatic failures that the Chinese college students commit. Thirdly, we reviewed the concept of CALL, the relevant teaching and learning theories and examples that informs us the design of the communicative CALL.

In addition to the theoretical research, we did extensive interviews to investigate both oral communication skills of Chinese students and the restaurant context. This user research was designed to complement the interviews conducted for the DI project. For students, we investigated the teaching and learning situations of oral communication in China, and we also investigated their attitude towards pragmatics learning and the use of politeness languages in UK. For the restaurant context, we investigated the specific issues, pragmatic failures, and impolite behaviours that Chinese students exhibited in the restaurant. We also collected and analysed interactions between Chinese students and waiters in authentic restaurants. Finally, we outlined the process of eating out in average UK restaurants in detail and listed many context scenarios with their suggested language use.

Based on the data collected from the user research, we developed the CALL system to simulate realistic restaurant conversations. The system focused on helping students to learn and use polite and authentic expressions in the restaurant context.

Finally, we evaluated the CALL system regarding its usability and its perceived learning effectiveness for teaching polite expressions and pragmatics.

2. Literature review

Pragmatics and politeness

Definitions of Pragmatics

Since we are aiming to help student to learn pragmatic appropriate speech acts, it is necessary to review the concept of pragmatics and speech acts. Pragmatics is a distinct field of study within linguistics. There are many definitions of the term “pragmatics” in the linguistics community. The shortest definition categorised pragmatics as “the study of language use” (Levinson, 1983, p.5; Verschueren, 1999, p.1). By emphasising the context of language use, Leech (1983) defined pragmatics as “the study of meaning in relation to speech situation” (p.6). Ferrara (1985) extended this idea to social level and defined the pragmatics as “the systematic study of the relations between the linguistic properties of utterances and their properties as social action” (p.138). Similarly, Mey (1993) proposed the pragmatics to be “studies the use of language in human communication as determined by the conditions of society”. (p.6) In language learning, the most widely applied definition of pragmatics is proposed by Crystal (1997), as he defines pragmatics in the user’s prospective. He mentioned the pragmatics as “the choices the language users made, the constraints they encounter in using language in social interaction and the effects their use of language has on the other participants in an act of communication” (p.301). The illustration of the definition is shown below (Figure 2.1).

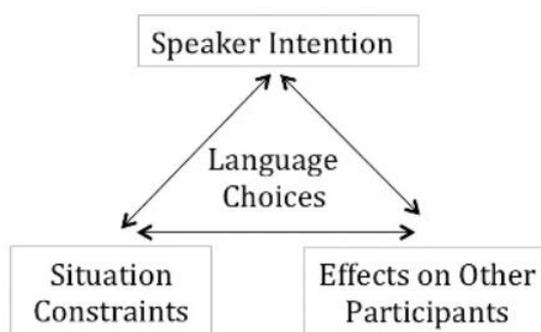


Figure 2.1 The concept diagram of pragmatics, from “On the development of metapragmatic awareness abroad: two case studies exploring the role of expert-mediation” by Henery, A., 2015, *Language Awareness*, 24(4), 316-331.

Speech acts

In human communications, speech acts are the utterances that have performative functions (Collins English Dictionary, 2018). They are fundamental element of communication (Nelson et. al, 2002). Austin (1962) suggested that there are three types of act involved when human produce a speech. The first one is the locutionary act, which is literal meaning of the of the speech utterance during the communication. The second one is called illocutionary act, which is the intended meaning of the speech utterance that the speaker want to convey. The third one is called perlocutionary act, which is the effect of the utterance (Korta & Perry, 2006). For a given speech utterance, when the illocutionary act differs from the locutionary act, the speech is called indirect speech act. For example, in the restaurant context, when customer asks the waiter, “Is there any salt?”, the locutionary act of the utterance is whether there is salt or not in the restaurant; however, the illocutionary act of the utterance is customer requesting the waiter to bring the salt. If the waiter brings the salt and give it to the customer, it is said that the waiter performed the perlocutionary act of the utterance.

Searle (1969, 1975, 1976) further developed the theory of speech act, and classified speech acts into five broad categories: representatives/assertives, directives, commissives, expressives, and declarations (Korta & Perry, 2006). The classification is illustrated by the diagram below (Table 2.1).

Table 2.1 Types of speech acts.

| Type of the speech act | Explanation | Example illocutionary speech act |
|---|---|--|
| Representatives/assertives (e.g. claims, hypothesis, conclusions) | Statement of facts that are either true or false. | “One plus one equals two.” |
| Commissives (e.g. promises, offers, threats, refusal) | The speech that commits the speaker to a course of action | “I will be there at 9.” |
| Expressives (e.g. thank, apologise, praise) | The speech that indicates speaker’s attitudes and feelings | “I am glad to hear that.” |
| Declarations | The speech that the speaker performs to represent himself or herself to perform that action | “I have read and agreed the terms and conditions.” |
| Directives (e.g. order, request, questions) | The speech that direct the hearer to a course of action | “Is there any salt?” |

Within the restaurant context, the most common types of speech acts are commissives and directives, as they both involves someone to make actions. For example, when

paying the bill, customers use directives, “Can I have the bill please?”, and waiters use commissives “I will bring the bill to you”. In addition, there are also many expressives used in the restaurant (e.g. “thank you”, “cheers”, “have a nice day”). Therefore, the focus of this project is on the student’s appropriate use of directive and expressives, and the understanding of commissives.

Principles for conversations

Before we look at the notion of politeness (since we want to teach students about use of polite languages), we need to know some relevant concepts of conversation, as being polite is a phenomenon which usually happens in conversations.

Conversational implicature and the Cooperative Principle (CP)

In the conversational point of view, Grice (1975) proposed that human communication is beyond the exchange of the literal meanings of utterances. For example, when someone asks, “are you coming to the party on Friday?”; one can say “I have to work” to imply that the speaker cannot make it to the party. Grice called this type of phenomenon conversational implicatures, in which people infer the meaning of the utterance from the way that it is being said. Based on this finding, Grice observed that conversation is the cooperative effort of interlocutors. He concluded that during conversations, people want to understand each other and be understood; therefore, people generally produce utterances that are succinct, truthful, relevant and clear (Holmes, 2012). This is called the Cooperative Principle (CP) and its maxims are illustrated below (Table 2.2) (Korta & Perry, 2006).

Table 2.2 Maxims of the Cooperation Principle (CP).

| Maxims | Explanation | Sub-maxims | Examples |
|-----------------|---|---|---|
| Quantity | The amount of information provided | <ol style="list-style-type: none"> 1. Make your contribution as informative as is required (for the current purpose of the exchange). 2. Do not make your contribution more informative than is required. | <p>“Do you have two cats?”</p> <p>“Yes, I have two cats.”</p> |
| Quality | Your contribution to the hearer should be true. | <ol style="list-style-type: none"> 1. Do not say what you believe to be false. 2. Do not say that for which you lack adequate evidence. | <p>“Do you know where you put the charger?”</p> <p>“I forget.”</p> |
| Relation | Content should be relevant | | <p>“Do you have any pets?”</p> <p>“No, I’m allergic.”</p> |
| Manner | The way the content is being said | <ol style="list-style-type: none"> 1. Avoid obscurity of expression. 2. Avoid ambiguity. 3. Be brief (avoid unnecessary prolixity). 4. Be orderly. | <p>“How do I get to the train station?”</p> <p>“First, you turn left, and then you walk straight down the road until you see the entrance.”</p> |

The relevance theory

Based on the phenomenon of conversational implicature, Sperber and Wilson (1986) developed the relevance theory. They claimed that conversation is a cognitive process instead of the utterances exchange. During conversations, the interlocutors seeks the relevance between the utterances, the physical environment and their mental state. Conversational implicature happens when the speaker produces an utterance that requires the hearer to use context information to decode speaker’s intention.

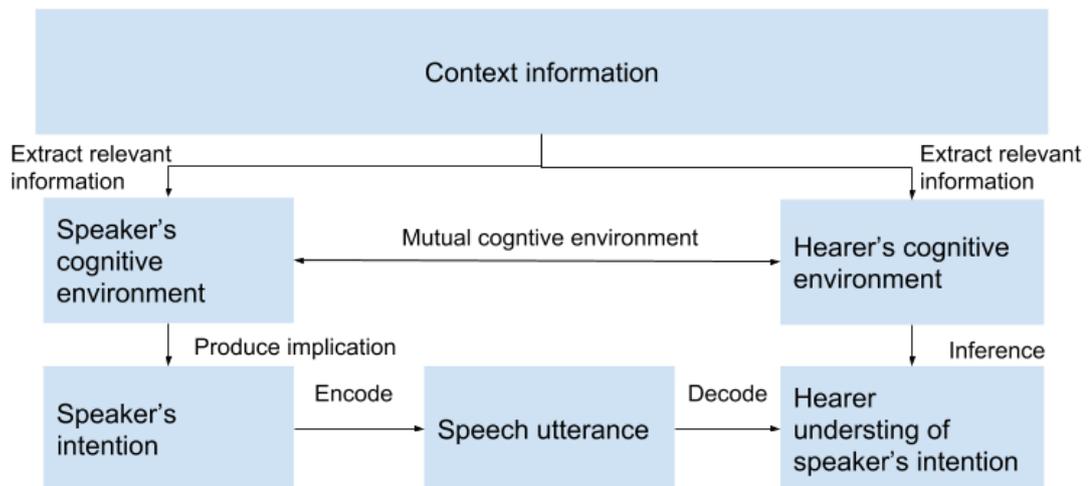


Figure 2.2 The relevance theory based on (Korta & Perry, 2006).

Politeness and culture

Politeness is universal phenomenon cross different cultures. However, different cultures have different perceptions of “being polite”. In this section, we will introduce the concept to politeness, and tires to analyse politeness issues that Chinese students exhibit in English speaking societies.

Definition of politeness

In real conversations, interlocutors may break the maxims of the CP (see section 1.3.1). For example, if some asks, “Is there any salt?” to the waiter, according to the quantity maximum, the waiter should say “Yes” instead of “I will bring that to you”.

One reason that interlocutors break the CP maxims is due to politeness. Politeness relates to the affective aspect of the conversation, which includes respect and friendliness. Although politeness is present in lots of non-verbal communications (e.g. facial expressions, body languages), this dissertation focuses on the linguistic aspect of the politeness, which is defined as “the linguistic devices perceived as having been used in order to maintain harmonious relations and avoid conflict with others.” (Holmes, 2012, p.208) in the context of pragmatics.

The rules of politeness

Lakoff (1973) refined the maxims of CP and claimed that the aim of conversation is not only to exchange information effectively but also to maintain friendly relationships with interlocutors. Rational people tend to be polite as well as be clear (i.e. following the maxims of CP) during conversations. For being polite, Lakoff introduced three rules: “Don’t impose; give options; be friendly” (Holmes, 2012, p.210). The first rule usually employs in formal situations, where the social distance between the speaker and hearer is not close. For example, when asking a stranger for help, one might use the term “Is it possible for you to” to express his politeness to the stranger. The second rule is usually used in situations where decision making is involved. To be polite, the speaker gives the hearer options by expressing uncertainty over the speech act he issued. For example, in a restaurant context, when the customer has decided on what to eat, he may use the term “Can I have...” to express his decision to the waiter. The third rule applies when the speaker wants to make the hearer to feel good. For example, the speaker might say, “I really appreciate your assistance” after the hearer helps the speaker.

However, criticised by Shahrokhi & Bidabadi (2013), Lakoff focus exclusively on the politeness of English and disregards the factor of cultural differences. For example, in China, it is fine to use directives, e.g. it will not be interpreted as impolite if the customer says “I want ...” to the waiter.

The principle of politeness

Realising the limitations of CP, Leech (1983) agreed that politeness is an important component in human communication. He observed that people tend to “minimise the effects of impolite statements or expressions” and “maximise the politeness of polite illocutions” (p.83), which means that people tend to avoid using impolite speech acts (e.g. orders, threats) and replace them with polite speech acts (e.g. requests, offers). He summarised these findings as the Politeness Principle (PP). He also proposed 6 maxims which describe the polite behaviours of people during conversation (Table 2.3) (Leech, 2012, p.132-138; Shahrokhi & Bidabadi, 2013).

Table 2.3 Maxims of the principle of politeness.

| Maxims | Sub-maxims | Examples | Explanation |
|--|---|--|---|
| Tact maxim (in directives and commissives speech acts) | Minimise cost to other Maximise benefit to other | “Could you possibly answer the phone?” compare with “Answer the phone” | The first sentence minimises the disturbance brings to the hearer |

| | | | |
|---|---|---|---|
| Generosity maxim (in directives and commissives speech acts) | Minimise benefit to self Maximise cost to self | “Is there any” Compare with “Could I have” | Speaker is less beneficiary when using the second sentence |
| Approbation maxim (in expressives and assertives speech acts) | Minimise dispraise of other Maximise praise to other | “You look nice today” compare with “You look awful today” | Speaker pleases the hearer in the first sentence, but not in the second |
| Modesty maxim (in expressives and assertives speech acts) | Minimise praise to self Maximise dispraise to self | “How’s the exam?” “I am stupid when I did the test” | Speaker dispraise himself about the exams |
| Agreement maxim (in assertives speech acts) | Minimise disagreement between self and other Maximise agreement between self to other] | “English is a difficult language to learn.” “True, but the grammar is quite easy.” | Speaker use partial agreement to avoid disagreement |
| Sympathy maxim (in expressives speech acts) | Minimise antipathy between self and other Maximise sympathy between self and other] | “I feel so sorry to hear about your dog.” | Speaker express his understanding of misfortune to how sympathy. |

Different from Lakoff (1973), the PP take account of cultural variability (Thomas, 1995). Leech (1983) suggests that different cultures weight these maxims differently. While in English speaking societies weight agreement maxim over modesty maxim, in the Japanese society, however, weights modesty more than agreement. For example, when people say, “Good job” to one in an English-speaking society, one might agree and say, “Thank you”; however, in Japanese society, one might say, “It isn’t so good”, to reject the praise (which also happens regularly in China).

While Leech’s maxims take account of culture difference, these maxims are not exhaustive. Different cultures may introduce their own maxims. Specific to Chinese culture, Gu (1992) proposed that, in addition to Leech’s maximum, Chinese politeness also contains receptiveness, attitudinal warmth, and language refinements.

The politeness theory

To deal with cultural differences, Brown & Levinson (1987/2009) proposed “The Politeness Theory”. It claims to be a universal theory across cultures (O’Driscoll, 1996). In this theory, they modelled the interlocutor as a “model person”, who is assumed to be a fluent speaker of a natural language with two key characteristics, the “rationality” and the “face” (Shahrokhi & Bidabadi, 2013). The “rationality” is the ability to analyse context and utterances. The “face” is the public image which the

person wants to maintain in society. The term “face” is inspired from Goffman (1967), who described “losing face” as being embarrassed or humiliated. Brown and Levinson proposed that “face” can be lost, maintained or enhanced during conversations. A model person tends to be polite when he tries to maintain other people’s faces while his is talking (Holmes, 2012).

Brown and Levinson specified that “face” consists of two aspects. One is the negative face, which is the desire to be independent and not impeded by others. The other one is the positive face, which is the desire of an individual that their public image meets with society’s approval. (Shahrokhi & Bidabadi, 2013). Claimed by Brown and Levinson, although the exact appearance of these two faces is different in different cultures, the concept of “face” exists universally across cultures.

When talking, a person’s intention might differ from the desire to maintain faces (i.e. the positive and negative face). Brown and Levinson categorised these speech acts as Face Threatening Acts (FTA). For example, the orders (e.g. I want you to do...) threats the hearer’s negative face as the order affects the hearer’s freedom to do something. The expression of disapprovals threatens the hearer’s positive face, as the disapproval makes the hearer difficult to maintain his public image. FTA might also threat the speaker’s faces, for example, expressing thanks might affect speaker’s self-esteem and lose his positive face, and making promises might affect speaker’s freedom to do things and lose his negative face.

Since rational people seek to avoid FTA (i.e. be polite), Brown and Levinson outlined and ranked all possible strategies that people might use in the conversation (Figure 2.3).

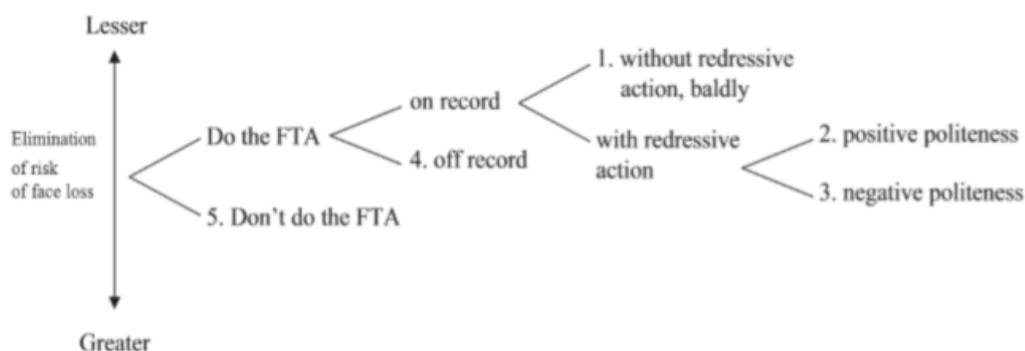


Figure 2.3 The possible strategies to be polite, adapted from “Politeness: Some universals in language usage” by Brown, P., & Levinson, S. C., 2009., in *Sociolinguistics: critical concepts [volume III: Interactional sociolinguistics]* (pp. 316).

Brown and Levinson suggested that the politest thing to do to maintain face is to avoid issuing FTA. For example, when someone wants to borrow a pen from another person (it is a FTA since it is a request), the politest thing to do is to avoid asking and search

for his own pen. If the speaker committed to the FTA (because speaker weights his other wants over the desire to maintain face), the second politest thing to do is to be “off record”. The term “off record”, according to them, means speaker’s intention is ambiguously delivered that the speaker has the chance of not doing the FTA. For example, someone can say, “I forget to bring my pen”, and wait to see the hearer’s response. If the speaker is committed to do a FTA, the speaker can reduce the threat by showing the hearer that he knows the potential impact of the threat. The negative politeness focus on saving the negative face of the hearer, which speaker reduces the threats by attempting to maintain hearer’s self-determination. For example, one can say, “Could I borrow your pen?”. The positive politeness focus on saving the positive face of the hearer, which the speaker reduces the threats by respecting hearer’s self-image. For example, someone can say, “Hi bro, how about lending me your pen?”. The least polite action to do is directly expressing FTA to the hearer. In this case, the hearer will lose his faces as the speaker committed an impolite speech act.

In addition to conversational strategies, people might also reduce the effect of FTA by manipulating social variables, which Brown and Levinson (1987/2009) listed as: the social distance of the interlocutors (D) (i.e. the degree of characteristics and experiences that the interlocutors have in common), the relative power of the interlocutors (P) (i.e. the social-economic status of the interlocutors), and the absolute ranking of impositions in the particular culture (i.e. the degree of seriousness that the FTA brings to the hearer. It is cultural and context dependent). The effect of a FTA is formulated below (Figure 2.4).

$$W_x = D(S,H) + P(H,S) + R_x$$

Figure 2.4 The effect of a FTA X. The effect of FTA (W_x) is equal to the distance between the interlocutors plus the power between the interlocutors, and plus the social-cultural constant of the FTA X, from “Politeness: Some universals in language usage” by Brown, P., & Levinson, S. C., 2009., in *Sociolinguistics: critical concepts [volume III: Interactional sociolinguistics]* (pp. 320).

According to the formula, people can reduce the social distance between the speaker and the hearer (reduce D (S,H)) (e.g. by using “small talk”), and/or express FTAs in the appropriate situations (reduce R) (e.g. express dissatisfaction in private spaces rather than in public) to behave more politely.

Politeness in modern Chinese culture

In many cases, the polite language used in China is different from the polite language used in English-speaking countries. Yin (2009), Zhu & Bao (2010), Yan (2015) found five aspects in which Chinese speakers use polite language differently: form of address, greetings, invitations, apologies and mentioning taboos. For the form of

addresses, native English speakers tend to use the forename to address a person that they already know to show the intimacy; however, Chinese people more likely to use the surname plus occupation to show their respect to that person (see Table 2.4 for example). For greetings, Chinese speakers tend to ask specific questions about hearer's personal activities to show that they care about the hearer; however, native English speakers would show more concern for the hearer's privacy and just ask some general questions (see Table 2.4 for example). For compliments, as we previously mentioned, Chinese speakers tend to refuse praises from others to show their modesty (i.e. Leech's modesty maxim) (see Table 2.4 for example). For invitations, if a Chinese speaker issued an invitation, the hearer will refuse the invitation initially, and the speaker will insist to show his sincerity (i.e. Leech's tact maxim and generosity maxim). It is unlikely for this kind of thing to happen in English speaking cultures. As for taboos, it is impolite to ask someone's age (especially woman's age), income, marriage in English-speaking cultures, but it is not true in Chinese culture.

Yan (2015) concluded that, Chinese society tend to be more "collectivism" than "individualism" compare with English-speaking cultures; therefore, Chinese culture weight more on social respect and attitudinal warmth, rather than privacy and freedom.

Table 2.4 Examples of the polite language use in English-speaking culture and Chinese culture.

| Differences | English-speaking culture | Chinese culture |
|--------------------------|---|---|
| Form of addresses | Dave | 张教授 Dr. Zhang |
| Greetings | "How's going?" "Good." | "你吃了吗?" (Have you eaten yet?) "我吃了。" (Yes, I do.) |
| Compliments | "You look beautiful today." "Thank you." | "你今天打扮得真漂亮" (You look beautify today) "哪里哪里"(just so-so) |
| Invitations | "Can you stay with us for the dinner?" "Yes, I'd like to." | "你今天留下来吃了晚饭再走吧?" (Can you stay for the dinner tonight before you go?) "不, 这太麻烦你了。" (No, it might be bother you too much) "没事, 来吧。" (No trouble at all, just stay with us.) |

| | | |
|--|--|------------------|
| | | “好吧。” (Okay.) |
|--|--|------------------|

Gu (1990, 1992) suggested that Chinese politeness focus on people’s social esteem, which is similar to the positive face that proposed by Brown and Levinson (1987). However, there is no, or only little notion of negative face exist in Chinese society. This explains why it is okay for customers to use “I want this” to request the waiter to take the order. As long as the customer uses expressive speech acts that express his respectfulness to the waiter, it will be interpreted as polite in the Chinese society; whereas the native English speaker would “soften” the order into questions (see Table 2.5 for example).

Table 2.5 The example difference between English-speaking and Chinese culture on polite language use in the restaurant context.

| Politeness expression in English when order food | Example utterance |
|--|--|
| English-speaking culture | Excuse me, can I have this, this and this? |
| Chinese culture | 你好！我想要一个这个，这个，还有这个，谢谢。 |
| Direct translation from Chinese | Hello! I want this, this, and this, thank you. |

Second language (L2) pragmatic competence and second language pragmatics teaching in China

Communicative competence, pragmatic competence and pragmatic failures

The term “competence” was originally introduced by Chomsky (1965), where he divided the language proficiency into two components: the competence and the performance. The competence is the understanding of knowledge that the speaker can produce, and the hearer can understand. The performance is the process of applying the knowledge in real situations. Since the knowledge here is specifically defined as grammatical knowledge (i.e. vocabulary, morphology, syntax, phonology, and semantics). Hymes (1972) argued that Chomsky ignored the aspect of sociocultural influences on language use. Therefore, he proposed the concept of communicative competence, which the knowledge is not only limited to grammatical knowledge, but also the knowledge of knowing how to apply the grammatical knowledge in a variety of social situations. Within the domain of language teaching, Canale and Swain (1980) and understand communicative competence as the ability to synthesis the linguistic knowledge and knowledge of language use into practice. They (1981, 1983) proposed that the communicative competence contain four elements: the grammatical competence, sociolinguistic competence, discourse competence and strategic competence. The grammatical competence is the ability to use vocabulary, morphology, syntax, phonology, and semantics to build sentence that is grammatically correct. The sociolinguistic competence is the ability to use language appropriately, by following the social and cultural conventions in different situations. The discourse competence is the ability to comprehend and produce the cohesive and coherent text or utterance reading/writing or listening/speaking. The strategic competence is the ability to employ verbal or non-verbal strategies when other aspects of competence is inadequate (e.g. paraphrase, gestures, etc.) (Fauziati, 2015).

Bachman & Palmer (1996) detailed the concept of communicative competence (they used the term “knowledge” instead of “competence” but they have equivalent meanings Fauziati (2015)) and placed various communicative abilities into a hierarchical model, which is showed below (Figure 2.5).

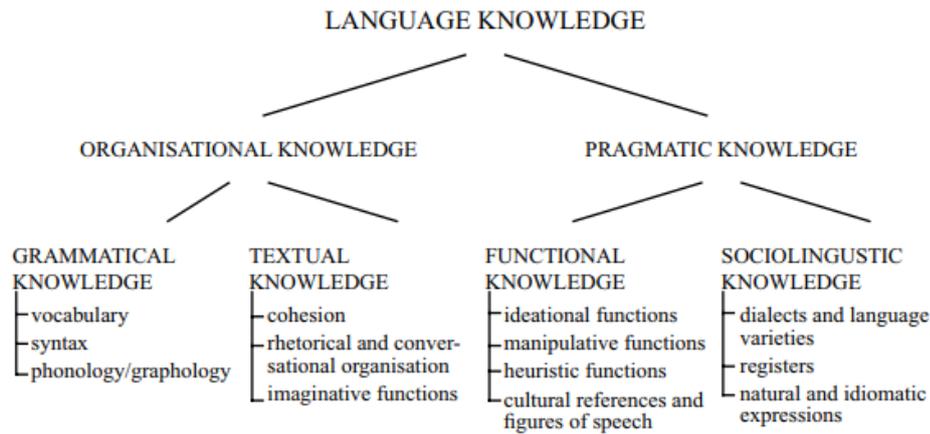


Figure 2.5 The model of communicative competence, from “Defining communicative competence”, by Bagarić, V., & Djigunović, J. M., 2007, *Metodika*, 8(1), p.101.

From the model, we can see that the pragmatic competence is one component of communicative competence, and it has various of sub-abilities. However, for the purpose of this dissertation, the pragmatic competence is broadly defined as the ability, which in addition to the “organisational knowledge”, that to use language appropriately to achieve a specific purpose in a given social context (Thomas, 1983).

Liu (2004) proposed that in intercultural settings (i.e. English as a foreign teaching and learning settings), for a learner to be competent at pragmatics, the learner should work on at least two aspects, i.e. the pragmalinguistics aspect and the sociopragmatics aspect. The pragmalinguistics aspect refers to the knowledge of linguistic forms to perform communicative acts; whereas the sociopragmatics refers to the knowledge of the social and cultural conventions of different contexts (Rose & Kasper, 2001; Roever, 2006).

In addition, Taguchi (2009) added that someone also needs adequate processing skills to apply these knowledge in real time. For example, in order to greet somebody informally, the learner needs to know some linguistic forms (e.g., lexis, phonetics, syntactic knowledge) to build possible utterances for greeting (e.g., “Hello.”, “Nice to meet you.”, “How’s going?”, “Is a cold weather, isn’t it?”, i.e. pragmalinguistic competence). He also needs to understand the sociocultural norms and rules relevant to the given context (e.g. I should greet the hearer informally since he is my friend, so I should not use “Nice to meet you”, i.e. sociopragmatic competence) and make the choice in real time.

Pragmatic failure, according to Thomas (1983), is learner’s inability to understand “what is meant by what is said” (p.91). It can either be “pragmalinguistic failure” or “sociopragmatic failure”. Pragmalinguistic failure happens when the learner does not know or misused the term to express his intention in the way that native speakers do not. For example, Chinese people use the term “没关系 (Meishi)” to respond to “Thank you.” However, “没关系” can be directly translated to “Never mind”. Some

Chinese students might use “Never mind” to respond to “Thank you” in English, which is inappropriate because “Never mind” in English means “something you say when you ask somebody to do something, then change your mind” (Saito, 2017). Sociopragmatic failure happens when the learner mis-interpreted the social condition of the context (e.g. size of imposition, social distance, costs and benefits, rights and obligations (Thomas, 1983)) and used the term in the way that the learner thinks is appropriate but not in reality. Politeness issues is one type of sociopragmatic failure. The learner may be aware of the need to be polite, but due to cultural differences, he might mis-interpreted the social condition and use the impolite utterance. An example in shown below (Table 2.6).

Table 2.6 Example of a politeness issue (i.e. sociopragmatic failure) in restaurant context.

| |
|---|
| Context: A Chinese customer want get waiter’s attention to order food |
| 你好，我想点餐。(A polite expression in Chinese) |
| Hello, I want to order (Direct translation - impolite sentence due to sociopragmatic failure) |
| Excuse me, can I make the order now? (polite sentence) |
| Reason: The leaner committed a negative FTA, which does not exist in Chinese culture. |

L2 pragmatics failures and intercultural politeness issues of Chinese college students

As mentioned in the introduction, Chinese college students may lack pragmatic competence. Wu and Chen (2006) composited written discourse completion tasks (focus on use of requests), multiple choice discourse completion tasks (focus on pragmatic routines), scenario pragmatic judgment tasks (focus on both) and designed the pragmatic competence questionnaire. They surveyed 80 Chinese college students in Beijing and interviewed 8 of them to discuss about the failure they had made after the survey. They found that majority of the participants committed both pragmalinguistic failures and sociopragmatic failures.

For pragmalinguistic failures, they found that Chinese students do not how to response “Sorry” and “Thank you” properly; students tend to use “it doesn’t matter” and “never mind” to respond “I’m sorry, I late for the meeting” and “Thank you” (the hearer may interpret as “my apology or gratitude does not matter to you”), as it was written in the textbook. In addition, most of the students also think it is okay to use “Of course (当然)” to response “Is the bookstore open on Sunday? (周日书店开门吗?)”, as it is a common response in Chinese. Moreover, students also confused with “Excuse me” and “I’m sorry”, because students had been taught that they have same meaning by their high school teachers.

For sociopragmatic failures, students tend to have a misconception about using “Could and Would” when issuing requests politely, because they think it is polite to use “Could/Would you possibly help” when asking the roommate to help them to move a luggage. This is because, firstly, “Could/Would you possibly help (你能帮我...吗?)” is a polite expression when talking to a close friend (there is no “irony”), and secondly, their high school teacher (and grammar books) told them “Could/Would” is always politer than “Can” in English.

Similarly, Zhang and Huang (2010) surveyed 68 college students and interviewed 20 of them in Zhejiang University about their pragmatic competence. They designed 20 open-ended questions on various daily tasks (e.g. greetings, requests, inviting, offering, compliments and its response), and asked participants to complete the questions based on the context information given. The interviews focused on student’s attitudes towards pragmatics and pragmatic failures.

From the questionnaire, they found that nearly all the participants committed pragmatic failures and many students committed both type of pragmatic failures. In average, students answered one third of the questions wrong, and all students are prone to commit pragmatic failures regardless of their linguistic proficiency.

From the interview, students believed that lack of understanding of the English-speaking culture is the main cause of the pragmatic failure (i.e. sociopragmatic failures). In classroom, teachers provide insufficient cultural background information which makes student difficult to aware the potential pragmatic problems (i.e. sociopragmatic failures) they might commit.

According to Wu and Chen (2006), there are various causes for Chinese students to commit pragmatic failures. First, Chinese students lack metapragmatic awareness (i.e. the awareness of using appropriate languages in different contexts). In many cases, Chinese college students unaware of the context and only use languages based on their past experiences. Second, Chinese students lack of knowing standard pragmatic routines. Teachers teach English according to the grammatical-focused syllabus rather than pragmatic-focused syllabus; therefore, students can only learn marginal, unsystematic pragmatic knowledge in the classroom settings. Thirdly, teacher and textbooks tend to over-emphasis the grammatical aspect of the language use and ignored the context of using it.

In addition to Wu and Chen, Zhang and Huang (2010) concluded that the huge difference between Chinese and English-speaking cultures is also an important reason for student to commit pragmatic failures. Students do not know the social and cultural conventions in the English-speaking societies and assumed that the Chinese social and cultural conventions are equally applied to English speaking societies (i.e. negative transfer of native cultural conventions) (e.g. “吃了吗 (Have you eaten yet)” for greeting). Moreover, they state that the natives’ tolerance towards Chinese speakers

also contributes to the pragmatic failures of Chinese students. During conversations, native speakers tend to forgive the mistakes that non-native speakers made, especially on sociopragmatic mistakes, because they understand that Chinese speakers have different social and cultural conventions. Since natives do not point out the pragmatic failures that Chinese speakers made, it is hard for Chinese speakers to aware and correct the errors.

L2 pragmatics teaching in China

Although Chinese college students are willing to enhance their pragmatic competence (Zhang & Huang, 2010; Yuan et al., 2015) and many scholars (He & Yam, 1986; Meng & Liu, 2000; Zhuang, 2005; Wu & Chen, 2006; Zhang & Huang, 2010; Qiu, 2011; Qiao, 2014) proposed various ways to change the current situation, there are many difficulties in practice (Shen, 2013). Firstly, most Chinese EFL teaching in classroom is teacher-centred. Teachers use grammar translation and audio-lingual methods, which means that students have no opportunity to put what they learned into actual practice. However, enhancing pragmatic competence is about putting language into practice. Secondly, due to the linguistic-oriented assessment system in China, teachers lack motivations to teach pragmatics. Thirdly, there is no authentic learning input and learning output in classroom settings. Textbooks only provide a fixed set of simplistic conversations for students to learn, and students only rely on these conversations to learn pragmatics. For example, when greetings, students only know “How are you?” “I’m fine thank you, and you?” “I’m fine too.” Even in the CLT classroom settings, students who have the same level of pragmatic knowledge cannot learn pragmatics from each other, because none of them know what they did wrong and how to correct them. Fourthly, in the EFL classroom, it is hard for student to learn about the social and cultural conventions, because teachers themselves might not know about the English-speaking culture.

Computer assisted language learning

CALL and types of CALL applications

Computer assisted language learning (CALL) is research that relates to “the search for and study of applications of the computer in language teaching and learning” (Levy, 1997, p.1). Although the specific term used is “computer”, the process includes all kinds of technologies that support language learning and teaching. According to Levy (1997) and Gamper and Knapp (2002), there are two main research aspects in this field; the first explores the use of technology as an instructional tutor, while the second regards technology as a tool to facilitate teaching and learning.

Due to the broad range of CALL applications available, there are many different views as to how to classify CALL applications. Levy (2009) categorised CALL applications based on the targeted language skills (i.e. applications that offer support for learning grammar, vocabulary, reading, writing, pronunciation, listening, speaking, and culture).

Based on the learning theories, CALL applications can also be categorised as behaviouristic CALL, communicative CALL, and integrative CALL (Tafazoli & Golshan, 2014). The behaviouristic CALL is based on the principle of stimulus and response (i.e. behaviourism). Applications are built that can deliver the correct linguistic materials (i.e. stimuli) and which provide opportunities for the learner to practise (i.e. response). They also provide corrective feedback if the learner makes the wrong responses. Examples of this kind of CALL application are Duolingo (Duolingo) and Memrise (Memrise, 2018) and other commercial applications that use audiolingual methods.

Communicative CALL applications focus on the use of the language rather than on the language itself. In comparison to behaviourist CALL applications, they focus less on delivering direct instructions and more on giving opportunities to practise. The theoretical basis of this approach is the social-observational theory (Bandura, 1977). During communications, learners can gain communicative experience by observing the behaviours of the applications and solving communicative problems. No explicit feedback is given after the communication, so that it does not interrupt the communication flow. One example of the communicative CALL application is “Let’s chat” (Stewart & File, 2007), where the learner uses the computer as a chat bot to practise introductory social conversations.

Integrative CALL applications focus more on the social rather than on the cognitive aspect of CALL. Although it is still communicative, these applications shift from human-computer interaction to human-human interaction through the medium of the technologies (i.e. computer-mediated communication (CMC)). The form can either be

synchronised or asynchronised, depending on whether the communication is real-time or not. The foundation theory of this kind of CALL application relies on connectivism theory (Siemens, 2004); here, learning occurs when the learner connects to new learning communities. One example of the synchronous application is “second life”, where learners can interact with native speakers in 3D virtual worlds (Aydin, 2013). As an example of an asynchronous approach, sending emails to native speakers can be regarded as asynchronous CMC learning.

There are many advantages to using CALL technologies to support teaching and learning. According to Zhao (2003), CALL applications can allow learners to access linguistic and cultural materials, provide opportunities to practise, and give individualised feedback. CALL applications are ideal for Chinese students as they allow them to enhance their pragmatic competence, because CALL applications can make authentic linguistic materials and knowledge of cultural conventions easily accessible to students, as well as using communicative teaching methods to provide students with opportunities to practice speaking. In addition, CALL applications can also give individualised feedback based on the student’s pragmatic performance.

In this dissertation, the focus is to build a communicative CALL tutor that supports the oral learning of pragmatics. This is because pragmatics is about the use of language in the communication and, compared with integrative CALL tools, a communicative CALL tutor does not require native speakers to communicate. This is an advantage to Chinese students, firstly because talking to native speakers in real-time can make students feel anxious. Secondly, it is hard for students to find native speakers and, even if they can, many native speakers will talk about superficial topics (e.g. focusing on greetings, not touching any other topics). Thirdly, native speakers might tolerate a speaker’s sociopragmatic mistakes. In the case of asynchronous integrative CALL applications, it is hard for a student to practise communicating, because asynchronous CALLs lack the necessary interactivity to simulate situational conversations.

L2 learning and teaching theories for the CALL design

There are many second language learning theories, from behaviourism to constructivism, and from cognitive theories to sociolinguist theories. This dissertation will focus on five theories that are relevant to the design of the communicative tutor. They are the zone of proximal development (ZPD) (Vygotsky, 1987), scaffolding (Wood & Middleton, 1975), information processing theory (Atkinson & Shiffrin, 1968; Craik & Lockhart, 1972; Miller, 1956), communicative language teaching (CLT) (Hatch, 1978), task-based language teaching (TBLT) (Ellis, 2003), and implicit and explicit instructions for teaching pragmatics (Ishihara, 2009; Rose, 2005).

Vygotsky believed that learning can take place when we interact with people who are more knowledgeable than us. When solving a problem, learning can occur when the learner cannot solve the problem independently but is still able to solve it under the guidance of the knowledgeable person. The interval between what the learner can do independently and what they can potentially achieve is called the zone of proximal development. In education, this concept is usually associated with scaffolding, which is the process that the knowledgeable person should follow in order to help the learner to achieve his full potential. Wood et al. (1976) specified 5 principles for effective scaffolding (Table 2.7).

Table 2.7 Principles for scaffolding.

| |
|--|
| Keep the learner engaged with the problem |
| Break the big task to into small ones |
| Keep individual concentrate on the sub-task while not forgetting the main task |
| Give stress, but not too much |
| Demonstrate the solution process |

Therefore, the communicative tutor can be designed to serve as a “knowledgeable person”, to instruct learners when, and only when, they need help. These instructions should be given appropriately.

Information processing theory describes learning as a sequence of activities that is carried out in our brain when we are processing a new piece of information (Atkinson & Shiffrin, 1968). Firstly, a learner takes this new piece of information in through different senses (sight, hearing, smell, taste, and touch) and stores it into his sensory memory. If they pay attention to this information, this piece of information is then moved into the working memory (otherwise it will be forgotten) (Miller, 1956). Within the working memory, the central executive puts the verbal information into the phonological loop and the visual information into the visuospatial sketchpad. If this information is elaborated upon (i.e. deliberately practised, for example, through recognition and recall), it is then stored into the long-term memory, which completes the learning process. The information can either be declarative (e.g. verbal, speech-based) or procedural (e.g. unconscious actions) (Craik & Lockhart, 1972). When instructing learners, the communicative tutor can use tasks such as repetition and recall; these enable learners to store the new knowledge into their long-term memories.

The idea of CLT comes from Chomsky’s (1965) division of linguistic knowledge and performance, where CLT places emphasis on “the performance” aspect of language proficiency (Savignon, 1991). According to Lightdown and Spata (1999), “CLT is based on the premise that successful language learning involves not only a knowledge of the structures and forms of the language, but also the functions and purposes that a language serves in different communicative settings. This approach to teaching

emphasises the communication of meaning over the practice and manipulation of grammatical forms” (p.172).

In CLT, learning occurs through interaction. The learner can learn from understanding authentic input (assuming that the learner is talking to a native speaker) and from practising his own output. If the learner issues a problematic utterance, the native speaker might notice the error and may signal that the learner needs to modify his output. Since there is no explicit instruction (implicit teaching), the effectiveness of CLT relies heavily on the quality of the conversation. Therefore, for communicative tutors, authentic materials (i.e. input) and the detection of the problematic output are two essential components of successful teaching.

TBLT is a realisation of CLT. Since in CLT students can learn through meaningful interactions, tasks are the stimulus required for students to carry out these interactions. According to Ellis (2003), the task should be designed to focus on the communicative outcome and should relate to activities in real-world contexts (i.e. pragmatics). In classroom settings, the TBLT contains three phases. In the pre-task phase, the teacher presents the key elements of the topic (e.g. the linguistic knowledge used in the context); in the task phase, the teacher presents the task and monitors the process (e.g. scaffolding). In the post-task phase, the teacher reviews the performance of the students and gives appropriate feedback (British Council, 2008). Therefore, communicative CALL tutors can simulate the role of the teacher in TBLT (i.e. by presenting knowledge, giving tasks, and reviewing performance) to let learners learn pragmatics through a sequence of tasks.

In the Teaching English to Speakers of Other Languages (TESOL) community, there are generally two ways of teaching English: explicit teaching and implicit teaching. Explicit teaching has dedicated goals; learners are provided with instructions to make them aware of a particular piece of knowledge. Implicit teaching tries to increase the exposure of the target language, so that learners can learn English unconsciously. However, in reality, teaching generally falls within the spectrum of explicit and implicit teaching (Ellis, 2009). Specific to pragmatics (Ishihara, 2010), explicit teaching involves providing conventional language as well as raising learners’ metapragmatic awareness of the language use (i.e. what to use, when to use, where to use it and to whom). During implicit teaching, authentic inputs are provided without raising the metapragmatic awareness. Learners learn pragmatics unconsciously during the communication process. By reviewing the literature on the effect of instructional intervention on pragmatics learning, Rose (2005) argues that the explicit approach is generally more effective than the implicit at teaching pragmatics. This therefore shows that, when teaching pragmatics, the communicative tutor should raise learners’ metapragmatic awareness in order to achieve a better learning outcome.

Examples of communicative CALL applications

There are many examples of communicative tutors for developing learners' communicative competence (Anderson et al., 2008; Chan & Kim, 2004; Chiu et al., 2007; Harless & Duncan, 1999; Johnson et al., 2004; Wik & Hjalmarsson, 2009; Zakos & Capper, 2008). In this dissertation, we only focus on oral communicative CALL applications.

The "Let's chat" system (Stewart & File, 2007) is a computer-based dialogue system designed to allow learners to learn basic social conversations in English. Stewart & File (2007) argued that, due to the limitations of natural language understanding (NLU), the system cannot understand all the possible inputs that the learners may make. Instead, they used a set of pre-stored sentences as input. The system includes a facial avatar (which can change its emotions according to the conversation), and a speech synthesis system (to produce speech utterances). Within a specific scenario, the learner interacts with the system by selecting the pre-stored utterances that are displayed on the screen and listens to the response given by the system. However, there is no speech recognition component in the system and no explicit feedback is given to the students.

In comparison to such restrictive contexts and scenarios, the "CLIVE" system (Zakos & Capper, 2008) has an intelligent NLU component and a large knowledge base that enables learners to input various utterances across different themes. Their focus is on enhancing the English beginner's communicative competence by simulating basic conversations. However, the conversation is not situation-based, and no explicit feedback is given. In addition, as in "Let's chat", the system does not recognise speech input.

The Tactical Language Training System (TLTS) was developed by Johnson et al. (2004). It was designed to allow military soldiers to acquire basic communicative skills in various languages. The software is a game-like virtual environment where learners can learn the target language by communicating with non-player characters in different scenarios. Within the environment, there are many communicative tasks for the learner to accomplish (i.e. TBLT approach). The system also incorporates both speech recognition and speech synthesis technologies, thereby making oral conversations possible. After completing the task, the system will also provide explicit feedback. However, the focus of this software is on pronunciation rather than on appropriate language use.

Specific to pragmatic teaching, Chiu et al. (2007) presented a web-based dialogue system that teaches the appropriate use of 6 forms of speech acts (greeting, parting, apologising, requesting, complaining, and complimenting) for advanced English speakers in China. First, the learner reads the context information displayed on the webpage, after which the learner is given a set of choices to initiate or respond to the

conversation. The speech recogniser will recognise the learner's utterances, following which the system will give a response according to the learner's choice. When the learner has completed the dialogue, explicit feedback is given on the appropriateness of the use of language (i.e. a "good ending" and a "bad ending"). The system interface is illustrated below (Figure 2.6).

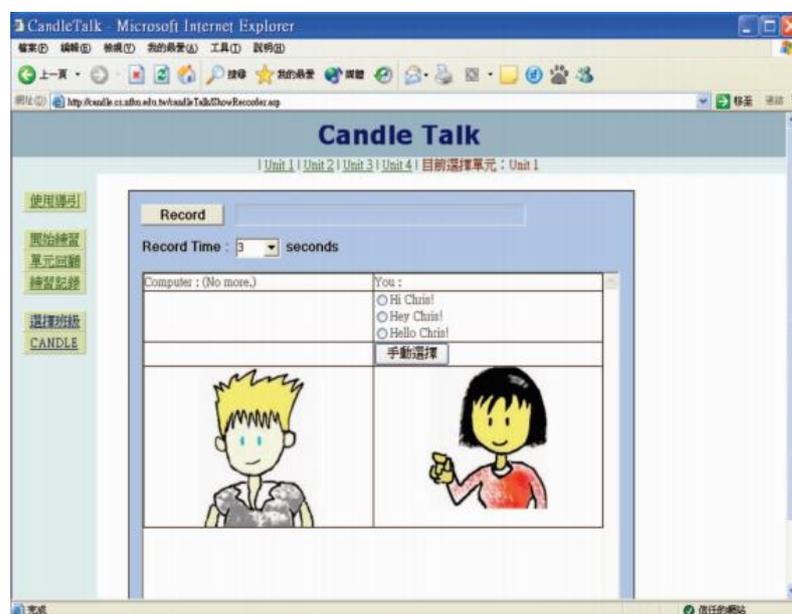


Figure 2.6 The interface of the "CandleTalk" CALL tutor, from "A study of web-based oral activities enhanced by automatic speech recognition for EFL college learning" by Chiu et. al, 2007, *Computer Assisted Language Learning*, 20(3), 209-233.

However, this CALL does not contain a speech-synthesis component. The computer's response is purely text-based, which makes the conversation unrealistic. Also, the materials they use are not sufficiently authentic (they extracted the learning materials from textbooks, although all materials were further examined by native English speakers). Despite these drawbacks, the application includes some important features for use when instructing pragmatics (Limberg, 2015). For example, the system displays appropriate and inappropriate utterances at the same time. This allows learners to examine different utterances so that they can be aware of the pragmatic difference between the utterances shown. The conversation also includes context information, assisting learners in raising their metapragmatic awareness (i.e. what to speak, when to speak, and who to speak to). Due to the nature of the communicative CALL systems, the application provides opportunities for learners to practice pragmatics within the conversation. In addition, the conversations in this system are not fixed, thus better simulating authentic conversations (compared with textbook dialogues). These ideas offer good inspiration for the design of our CALL system.

3. User research

Research themes and research framework

In order to create an effective system to help Chinese college students (especially those who are in or plan to study in an English-speaking country) improve their oral pragmatic competence and appropriate use of polite expressions in restaurant contexts, it was necessary to use the learner-centred approach (Soloway, et al., 1994) to discover the specific problems that Chinese students have, and how to correct them. In addition, in order to make our communicative CALL system effective, we also needed to gather authentic teaching and learning materials from restaurant contexts. Therefore, we investigated both the target learner group and the customer-waiter interaction in restaurant contexts. We came up with several broad research themes that are arranged hierarchically below (Figure 3.1).



Figure 3.1 The broad research themes for designing the communicative CALL system.

For language learning (i.e. Theme 1), we wanted to investigate the oral competence of current Chinese postgraduate students to see what specific communicative difficulties they have and whether they make pragmatic mistakes. We also wanted to investigate their learning styles (i.e. how speaking is learned and practiced and the content that is used), explore their attitudes towards learning pragmatics, and investigate how they use polite expressions in real-life contexts.

For the restaurant context (i.e. Theme 2), we focused on the question of the social relationship between customers and waiters in the UK culture, and the behaviours of Chinese students in restaurants.

Regarding implementation (i.e. Theme 3), since the authentic learning and teaching materials is the core component for effective pragmatics learning, it was also important to collect these authentic materials.

Since many research themes include multiple parties, e.g. the customer-waiter relationship in Theme 2 involves native customers and waiters; the learning styles of

Chinese students in Theme 1 involves English teachers and Chinese students; the authentic pragmatic mistakes that Chinese students made in Theme 3 involves Chinese students, waiters, and native speakers (as Chinese students might not be aware of the mistakes they have made), etc. We further elaborated upon these research themes according to different perspectives (see Figure 3.2).

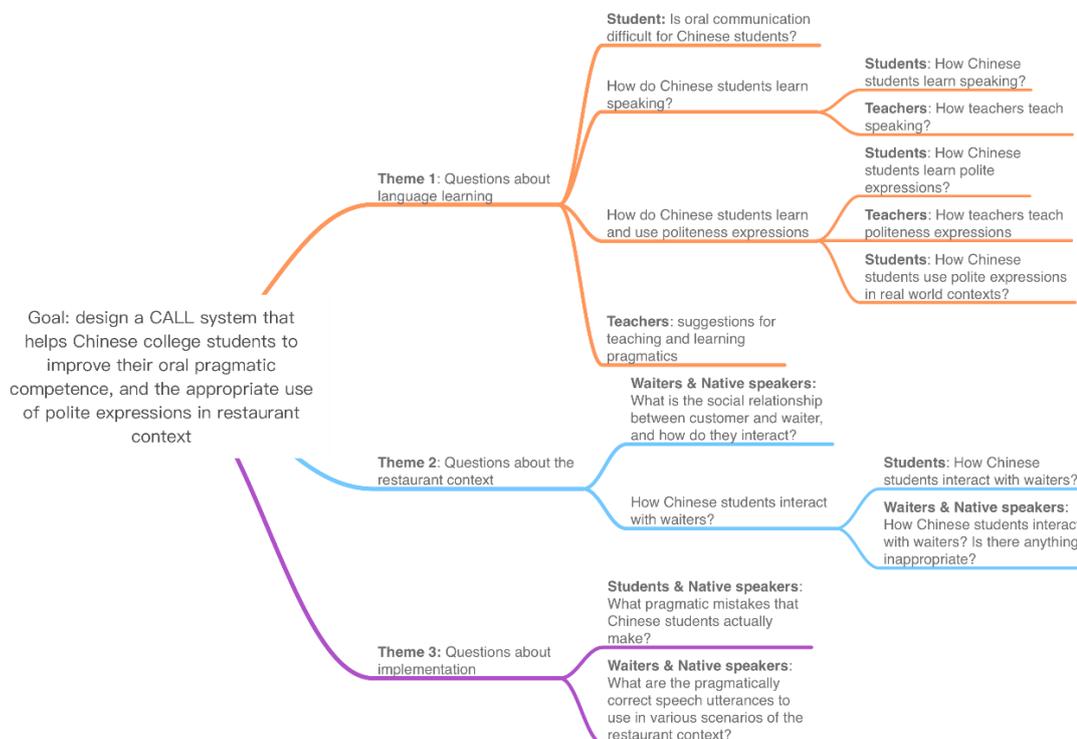


Figure 3.2 The elaborated research questions from Figure 1 based on different perspectives for designing the communicative CALL system.

In this project, we started our investigations by interviewing students, TESOL students (i.e. teachers), waiters, and native speakers (Section 2) to answer the questions in research themes 1 and 2. We then collected the authentic utterances of waiters and the pragmatic mistakes of Chinese students by conducting field experiments (Section 3) to answer the questions in theme 3. Finally, we outlined a customer-waiter interaction process and collected the native authentic interactions by holding a co-design session (Section 4) to supplement the field experiments. The user research framework is shown in below (Figure 3.3).

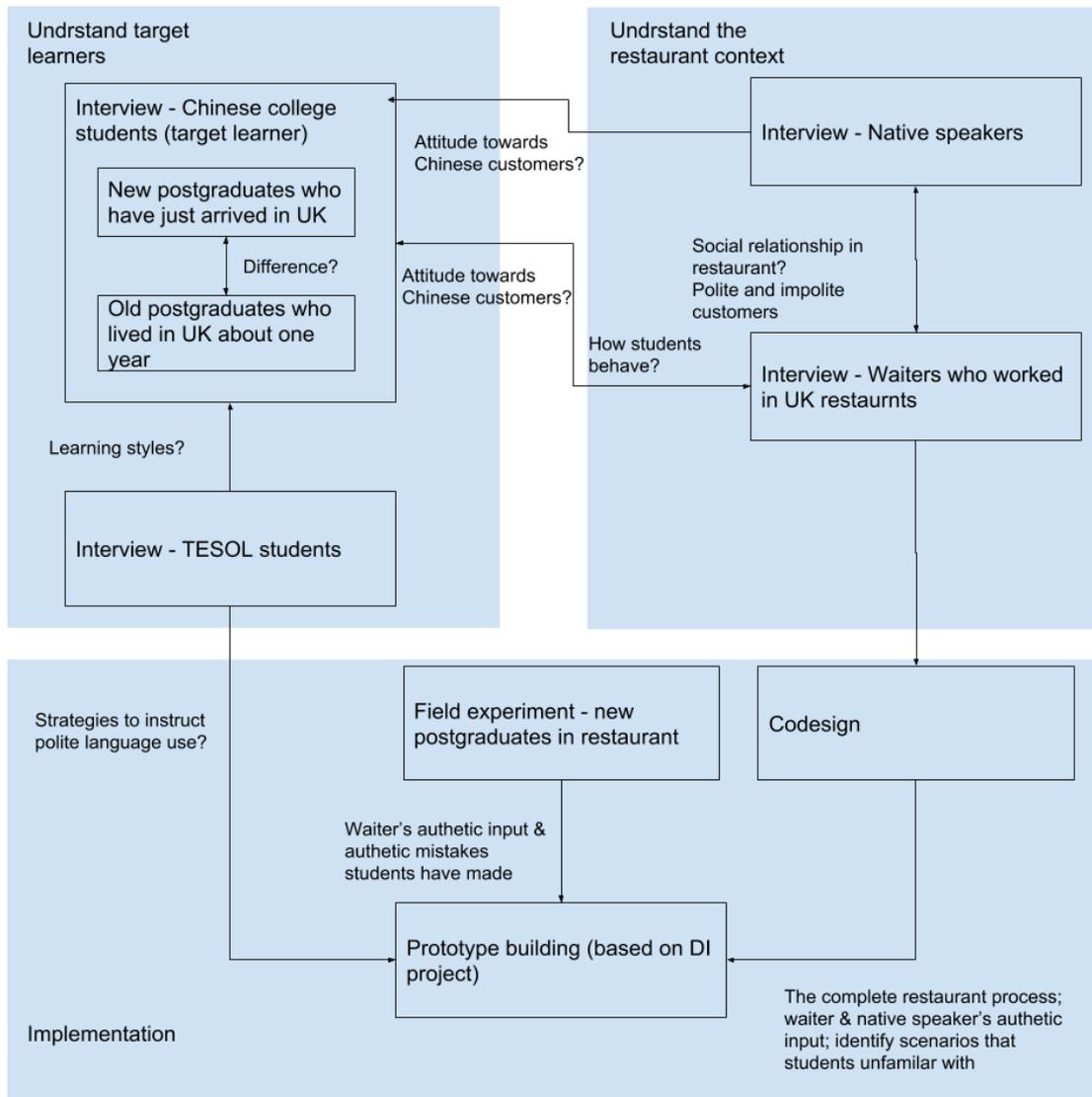


Figure 3.3 The research framework and the intercorrelations between research activities.

Interviews

Design of the interview protocols

Since we decided to interview different types of stakeholders, for each type of interviewee (i.e. students, waiters, native speakers, and TESOL students) we first expanded the research questions (see Figure 2) into different sets of objectives by brainstorming (see pilot scripts in the supplementary files for details). For example, one objective in the students' interviews was, "Discover motivations of enhancing speaking skills", which was derived from the question, "How do students learn speaking" in Theme 1. The objective of "Discover the importance of politeness in customer-waiter interactions" in the waiters' interview was derived from the research question, "What is the social relationship between customer and waiter" in Theme 2. We then derived the leading and follow-up questions based on these objectives. The examples are shown below (Table 3.1).

Table 3.1 Examples of research questions and research objectives and their corresponding leading questions and follow-up questions.

| Research objectives | Leading question | Follow-up questions |
|--|---|---|
| Discover motivation for enhancing speaking skills (Theme 1: Extracted from student interview protocol) | Why do you want to enhance your speaking skills? | - Is it because of the exams or due to the demand for communication? |
| Importance of being polite in a restaurant (Theme 2: Extracted from waiter interview protocol) | How important is it to you that customers are polite? | - How do you feel when the customer treats you politely? - Can you give me an example? - What if the customer behaves impolitely? How will you treat them? - Can you give me an example? |
| How natives behave in the restaurant (Theme 2: Extracted from native speaker interview protocol) | How important is it to be polite in a restaurant? | - Why? - What are your concerns if you behave impolitely? |
| Understand teacher's perceptions of pragmatics and his or her awareness of teaching the pragmatics of daily activities | As a teacher, which speaking skills aspect(s) should the teacher emphasise? | - If you teach a group of students who are preparing to live in an English-speaking country, how do you improve their speaking skills? |

| | | |
|--|--|--|
| (Theme 1: Extracted from TESOL student interview protocol) | | - Which teaching methods will you use? |
|--|--|--|

The interview protocols were then tested using pilot interviews (one subject for each interview). The purpose of the pilot interviews was to focus on the flow of questions, we did not record the audio. From the pilot interviews, we found that several of the questions were redundant. Also, we forgot to ask about the waiter's perspective of Chinese customers (which is a main research theme). Therefore, we built a second version of the protocols to reduce the repetition of the questions and refine the objectives. In addition, since the target learners and TESOL students are Chinese, we translated these two protocols into Chinese to facilitate the interviews.

Interviewee and interview procedure

For the student group, we invited 8 Chinese postgraduate students from the University of Edinburgh to participate in the interviews. Within this group, 4 of them had lived in the UK for at least one year (i.e. old students) and 4 had arrived in UK for less than two weeks (i.e. new students). All students had an IELTS speaking score of around 6-6.5 (i.e. upper-intermediate speakers) (CEFR, 2018) at the time they arrived in UK.

For the waiters, we invited 3-4 people to participate and 2 people showed up to the interviews. One had worked in the service sector for two years and one had worked as a waiter for eight years. They were both native English speakers and worked in the UK.

For the native speakers, we invited 2 postgraduate students from the University of Edinburgh to participate. One was a native UK citizen and one was a native US citizen. They both went to restaurants around once every two weeks.

We also invited 3 Chinese postgraduate students from the TESOL programme at the University of Edinburgh to participate in the interviews. 2 of them had professional teaching experience in China and one had six months of internship experience. One of them focused on teaching primary school students and two focused on teaching adults for academic purposes (e.g. IELTS).

The interviews were conducted informally, face to face, and in a semi-structured format. All interviews were held in quiet and private spaces and were audio recorded (see Figure 3.4). The length of each interview was around 40 minutes to an hour. The interviewees were encouraged to extend the topics from the leading questions. The

interviews for students and TESOL students were conducted in Chinese and the interviews for waiters and native speakers were conducted in English.

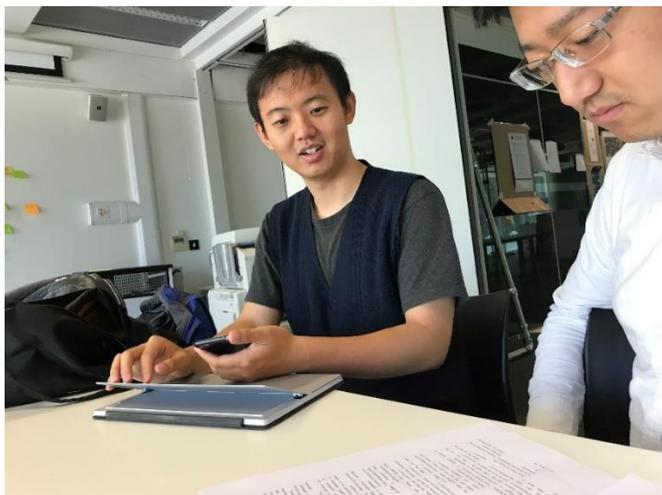


Figure 3.4 A photograph of one of the old students' interviews. The permission was given by the student to be shown in academic publications.

Analysis procedure

The analysis procedure was followed according to Elo and Kyngäs (2008). The interviews were audio taped and transcribed using an automatic speech recognition software (Iflyrec.com, 2018). Immediately after each interview, we listened to the recording and read the transcription to correct any transcription mistakes and familiarise ourselves with the materials (see Figure 3.5).



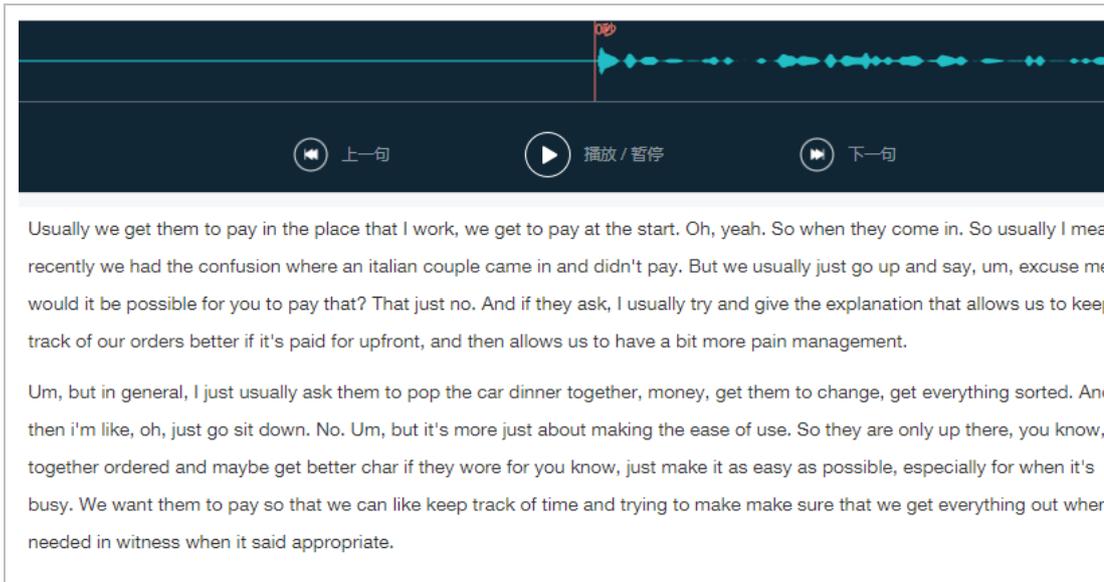


Figure 3.5 The interface of the speech recognition software and the raw transcripts.

After we conducted all the interviews had been conducted, we re-listened to the audio files for each type of interviewee. This time, we deleted the sections of the transcripts that were irrelevant to the objectives of the protocols, e.g. greetings, social chats, and answers to warm-up questions. We then printed the reduced transcripts and marked the responses that might be related to the research objectives and tried to extract their themes (see Figure 3.6).

For each type of interview, we developed the initial pen and paper codebooks by merging the themes (see Figure 3.7). For students and TESOL students, we used Chinese to do the initial coding to avoid any problems that could arise from the translations.

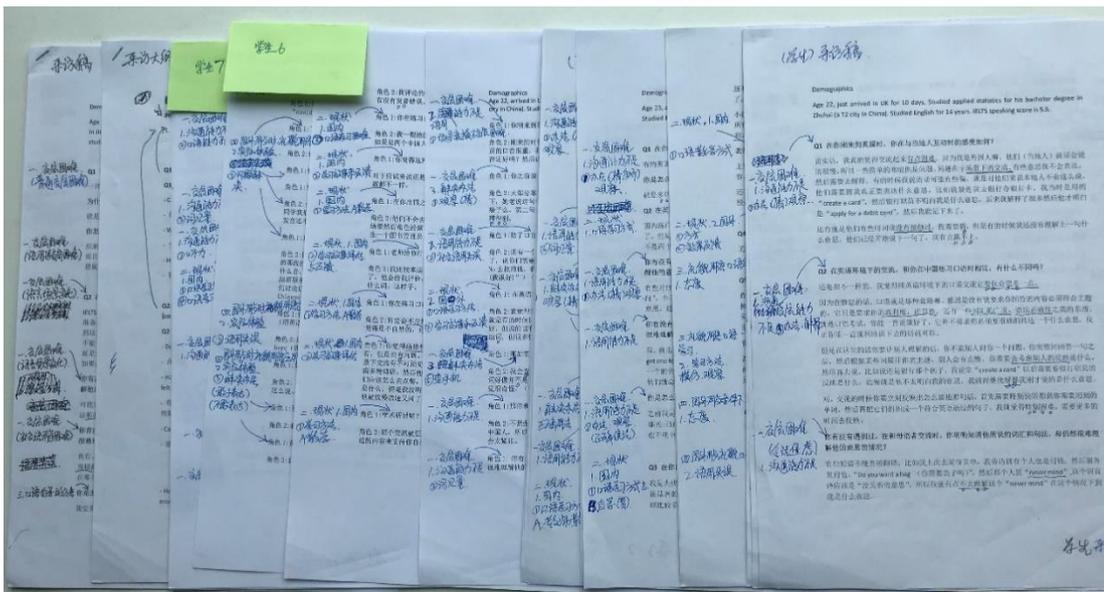


Figure 3.6 The pen and paper theme extraction process.

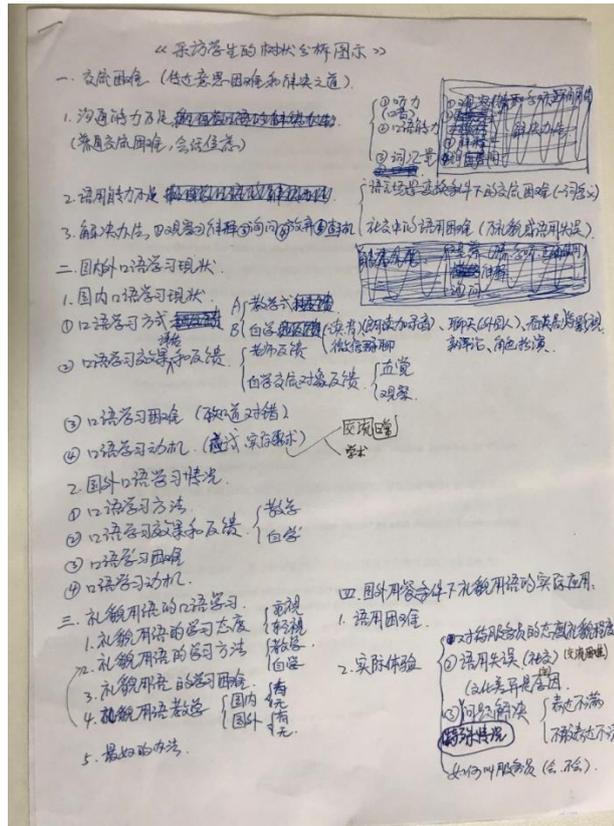


Figure 3.7 The initial pen and paper codebook developed from the students' interviews containing redundant codes and temporal changes. The final version of the codebook is shown in Figure 3.8.

We then put these initial codebooks into the NVivo software (NVivo, 2018) and used them to code the reduced transcripts (see Figure 3.8). This time, we merged the initial codes that were relevant and deleted the codes that only had few or short responses. The second version of the codebooks are shown below (Figure 3.9) (for descriptions of the codebooks, please see Appendix - Codebook for student's/ TESOL student's/ waiter's/ native speaker's interview).

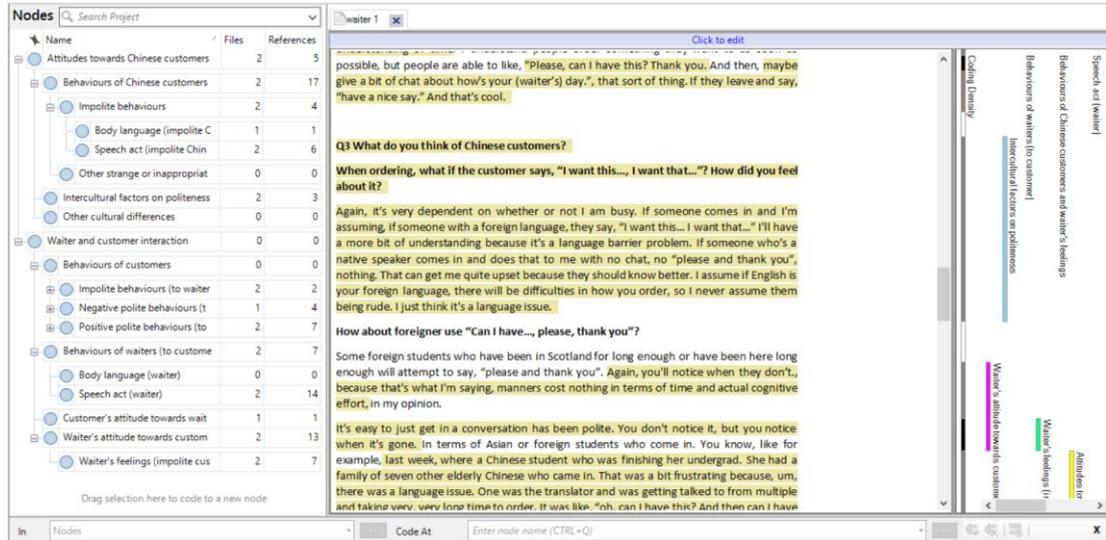
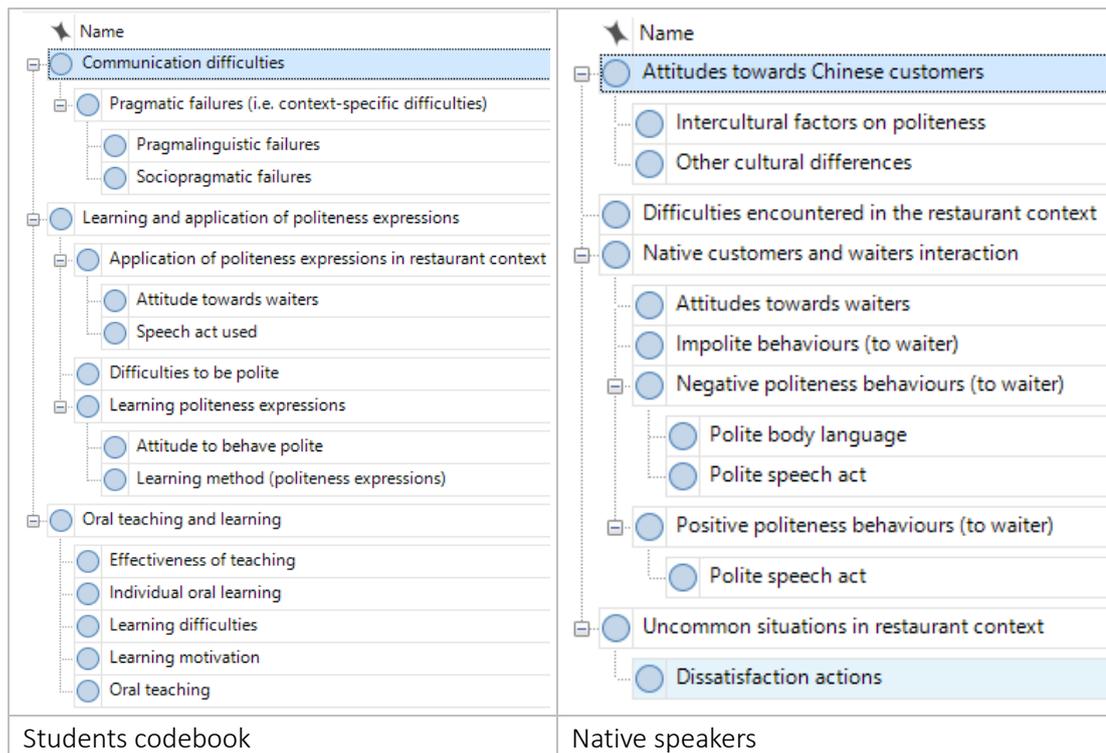


Figure 3.8 The second coding process in the NVivo software.



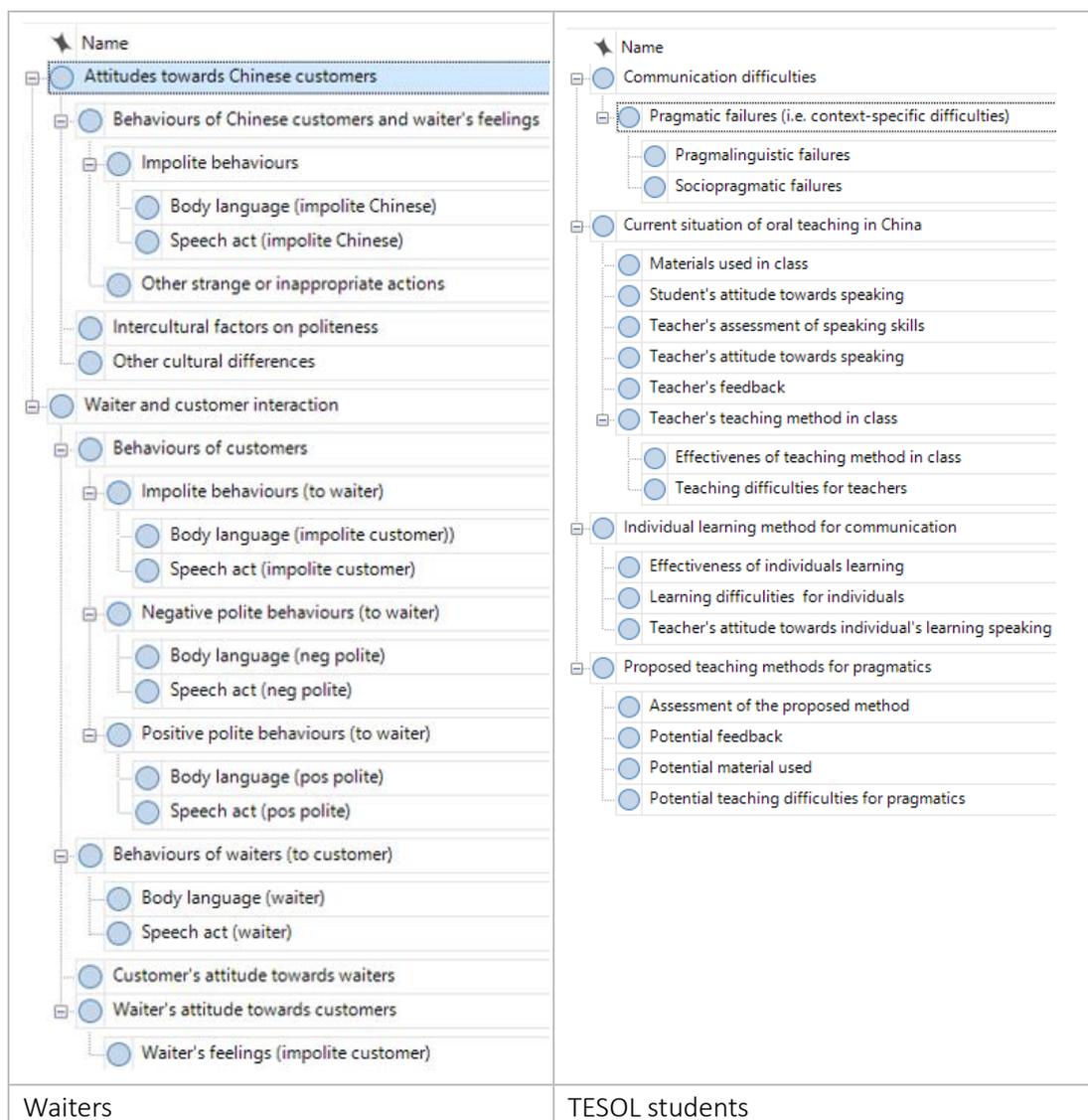


Figure 3.9 The codebooks of the interviews.

Results and discussion

In this section, we discuss our findings based on the research questions derived from the research themes in Figure 3.1.

Theme 1: Questions about language learning

Is oral communication difficult for Chinese students?

From the interviews, we found that all the Chinese students had experienced some oral communication difficulties when they first came to the UK. Firstly, many of the students mentioned that they could not understand the strong British accent, but the old students said that they adapted to the accent after a few months of exposure. For

the new students, they said that they were not used to authentic conversations because there are lots of variations. For example, one student reported that when she was checking out in the supermarket, she asked the cashier how much she should pay. After the cashier told her the amount, the cashier also asked if she wanted a bag. This confused the student as she was not prepared to answer this question. Some of the new students also said that they were afraid of making mistakes when speaking, however, none of the old students mentioned conversational anxieties when talking to native speakers.

Although new students have more oral communication difficulties, both old and new students said that they lack of knowing the “correct” (i.e. authentic and accurate) terminologies in unfamiliar contexts. For example, a new student used the phrase, “create a bank account” when he wanted to open a bank account and an old student confused the phrase, “round trip ticket” when he wanted to buy a return ticket at the bus station. When this happens, the students will try to paraphrase what they have said or ask the speaker for clarifications. Students felt that these errors make the communication ineffective and that it takes a lot of effort to work it out in real-time. Therefore, some students try to avoid encountering unfamiliar scenarios. Specific to restaurant contexts, the biggest problem is understanding the names of dishes and ingredients as students cannot learn these from anywhere else.

From the interviews, we also discovered some of the pragmatic failures that the students make. New students tend to make a lot of pragmalinguistic mistakes, especially for daily routines. For example, one new student used, “Not good” to reply to, “How are you” and the rest of the new students used, “I’m fine, thank you and you” (which is overly polite in casual contexts). One of the new students reported that he did not know how to reply, “thank you” and another one used “never mind” to reply to, “thank you”. None of the new students knew that, “no problem” is an informal way of saying, “you are welcome”. Specific to restaurant contexts, one of the new students mentioned that he cannot understand the meaning of, “How shall I cook it” when he ordered the steak in a restaurant (he thought he needed to teach the waiter how to cook it).

Both new and old students made sociopragmatic mistakes and one of the new students said that she did not know how to refuse people properly. When she walked into a shop, the shop assistant would ask her, “Do you need help?” and she always said, “No” to the shop assistant. Although she was aware that it is impolite to say, “No”, she did not know the correct phrase to refuse the shop assistant’s help (a correct way would be “I’m good”). Specific to restaurant contexts, one of the old students said that he did not know how to complain if he found a fly in his dish. He would just stop eating and never come to that restaurant again. Many students (both new and old) used the word “hello” and raised their hand when they wanted to get the waiter’s attention and one student even used “Hello, waiter please come here” when she needed help (as it is a

polite act in China, but not acceptable in the UK). Also, many students used the phrase, “I want...” to make their order.

How do Chinese students learn to speak English?

Both the new and old students reported that the main motivation for them to practice speaking was to pass the IELTS exam. The old students also reported that conducting academic presentations motivated them to practice speaking. Neither group were motivated to learn daily oral communications, however, because they did not have the time to learn them systematically. Similarly, the TESOL students said that their main purpose of teaching was to enhance the students’ reading and writing abilities as teaching these aspects is the quickest way to enhance students’ exam performance. Although 2 TESOL students also mentioned that speaking was important, they focused on teaching oral communications for academic purposes (e.g. debates, seminars).

Almost all the students practiced speaking by reading aloud and reciting textbooks or pieces of text that they had previously written. Conversations rarely took place because they either felt it was hard to find a native speaker (e.g. it costs too much) or they felt anxious about opening their mouths. Instead of talking to others, they preferred to speak in a private space where they could record what they said and re-listen to it to see if there were any pronunciation or grammatical errors.

Although they preferred to practice speaking in this way, some students said that it was hard to identify grammatical errors in the recordings because the speech was in real-time. Only one old student mentioned talking with native speakers to enhance his speaking skills. He also said, however, that because Chinese and native English speakers have different interests, it can be hard for a “deep” conversation to take place.

Specific to pragmatics, new students tend to be unaware of the appropriateness of language use in different contexts as they mainly learn speaking from textbooks and other exam-based materials. Old students are more aware of language use, however, because they learn speaking directly from authentic contexts. They tend to observe other people’s language use, imitate it in similar situations, and get feedback (implicitly) from the hearer. One of the old students reported that he was uncertain whether he used the correct words, however, because native hearers rarely talk about his pragmatic mistakes.

For teaching speaking, the TESOL students mentioned that at high-school level, teachers do not teach conversations. Instead, it is common for them to ask students to recite material from the textbooks. At college level, there are native English-speaking teachers who ask students to perform conversational activities (i.e. TBLT). The most common conversational activities that the TESOL students mentioned were role playing (of daily contexts) and debate (of academic issues).

Both the TESOL students and other students reported that pure TBLTs are not effective inside the classroom, however. The TESOL students said that it was impossible for teachers to ensure that all students actively participate in the conversation and that it is impossible to give everyone useful hints and feedbacks after the activity. For the students, some mentioned that they were afraid of making mistakes in front of their classmates and they would therefore prepare materials in advance and recite them during the activity. Some other students also said that they could not learn effectively due to the inability of their learning peers (i.e. according to the ZPD, no knowledge transfer had taken place).

How do Chinese students learn and use polite expressions in real world contexts?

All the students mentioned that they wanted to treat other interlocutors politely when they were talking (e.g. waiters). According to the TESOL students, however, the use of polite language is not part of the syllabus in college-level English courses and they thought that students had learned these expressions in their high school English classes. Many students reported that their high school English teachers only touched upon this topic in one or two lessons, however, and the focus was on grammar rather than context of use.

Instead of explicit instructions, some old students mentioned that they learned the use of polite language by watching YouTube videos. This usually happened after they encountered a situation where they were aware the language they were using was inappropriate, but they did not know the pragmatically correct expressions, or after they observed someone using a polite expression they had never used before. For the new students, since they were unaware of the pragmatic differences between languages, they tended to use direct translations of the polite expressions that they used in Chinese. For example, one of the new students said that she would use the sentence, “Excuse me, why is there a fly in my dish?” (请问一下，为什么我的菜里有一只苍蝇) if there was a fly in her dish. In contrast, one of the old students would say, “I’m sorry. I think there is a fly in my dish.”

For teaching pragmatics, all the TESOL students agreed that it is hard to teach pragmatics because they have to find relevant authentic and context-specific materials and teachers also have to learn about the cultural and social background they are unfamiliar with. Despite these difficulties, the TESOL students emphasised the importance of using authentic materials for teaching pragmatics. They also suggested using the Engage (engage and familiarise the new knowledge), Study (study the new knowledge), Activate (practice) (ESA) teaching structure instead of the pure TBLT teaching structure because Chinese students tend to be used to receiving explicit instructions rather than implicit language exposure.

Theme 2: Questions about the restaurant context

What is the social relationship between customer and waiter? How do they interact?

The interviews focused on the attitudes and behaviours of customers and waiters. Both the waiters thought that in restaurants, waiters should identify the customer's needs before the customer asks explicitly. Similarly, when we were interviewing the native speakers, they also mentioned that restaurants in the UK are waiter-directed. The ideal waiter should take care of everything and customers should just sit down and relax. In China, however, restaurants are customer-directed. Customers call the waiter and express their needs explicitly, otherwise the waiter will not help them.

In terms of politeness, both native speakers thought treating waiters politely was important as it may affect their eating experiences. Similarly, both waiters thought it was necessary to treat customers politely because it is part of their job to make customers' eating experiences enjoyable.

According to one of the waiters, a polite customer should be "mannered", "reciprocal", and possibly "conversational". Regarding "manners", both waiters thought that polite customers should always use "please" and "thank you" and should pose questions to ask what they want. For example, if a customer wants to pay the bill, he might say, "Can I have the bill?" instead of, "I want to pay the bill". Similarly, if a customer wants to use the washroom, he might say, "Can I use your washroom?" instead of, "Where is the washroom".

When expanding on the customers being "reciprocal", both waiters said that they appreciate it if customers recognise how busy the waiters are and the effort they put into the service. For example, all waiters have a flow that involves checking the service for every table and polite customers will not interrupt this serving flow (an example of a customer interrupting the flow would be him raising his hand and saying, "hello").

For "conversational", both waiters thought that polite customers should use communications other than orders (i.e. break down the customer-waiter relationship and treat the waiter as a friend). For example, making small talk before making an order, e.g. "Nice weather isn't it?" and saying, "have a nice day" after paying the bill. In addition, the native speakers mentioned the use of banter (e.g. making jokes about politics) to build personal connections between themselves and waiters.

Although both waiters mentioned that they try to keep the service at a high standard regardless of a customer's politeness, they make more effort when serving polite customers compared to impolite customers. When dealing with impolite customers, different waiters have different approaches. One of the waiters said that he would be reactionary when he was busy, while the other waiter would use overly polite language to signal to the impolite customer that they should behave politely.

How do Chinese customers interact with waiters? Is there anything inappropriate?

Although both waiters were aware of the cultural differences and language barriers between English speakers and Chinese speakers, they agreed that some Chinese customers lack manners when they are eating in restaurants. One waiter reported that Chinese customers always use “I want...” to make orders, which makes him a little bit uncomfortable (in his own words, “Chinese customer are very rigid, treating me like machine”). The other waiter mentioned the issue of disturbing his workflow, with Chinese customers saying, “Excuse me, excuse me” and raising their hand to get the waiter’s attention. In addition to the waiters, one of the native speakers also observed that many Chinese customers tend to chew with their mouths open, which is a sign of a lack of manners.

One of the waiters also described Chinese customers, especially Chinese college students, as less friendly compared to native customers. Although some Chinese students are competent in English (i.e. able to make conversations), they never make extra conversation (e.g. greetings, small talk, or banter) with waiters when they eat in restaurants: “They are in their bubbles”.

Summary of findings

From the interviews, we learned that Chinese students have communication difficulties. The new students felt it was hard to have authentic conversations because there lots of variations. Both the new and old students felt that using the correct terminologies in unfamiliar contexts (e.g. name and ingredients on the menu) was hard. Also, both groups of students committed pragmatic failures. The new students made more pragmalinguistic mistakes than the old students (e.g. they did not know “you are welcome”), while they all made sociopragmatic mistakes (e.g. saying, “hello” to call the waiter).

The main motivation for the students to practice speaking was to pass exams and the teachers focused on teaching the academic aspects of English, but not in terms of the context of relevant daily interactions. The students rarely practice speaking through conversations and the use of pure TBLT for teaching speaking is ineffective in the classroom setting. As for polite language use in restaurants, although the Chinese students want to treat waiters politely, they are still far from “mannered”, “reciprocal”, and “conversational”. This is because there are cultural differences between Chinese restaurants and UK restaurants (e.g. customer directed vs. waiter directed, less interactional vs. more interactional) and teachers only spend a small amount of time teaching English politeness. The students (especially new students) are also unaware of the pragmatic differences between the different forms of language use.

In addition, the TESOL interviewees re-emphasised the importance of using authentic materials for pragmatics teaching. They also suggested letting Chinese students engage and familiarise themselves with the new material before they start performing communicative tasks.

Field experiments

Motivation and experiment design

From the literature and the suggestions of the TESOL students, we noticed the importance of using authentic materials to teach pragmatics, therefore, the next step of the user research was to gather authentic utterances that would be used in our communicative CALL system.

Although we learned some of the patterns of pragmatic and politeness mistakes that Chinese students commonly make from the students' and waiters' interviews, we still did not know the exact utterances that Chinese students and waiters commonly make in restaurants. Therefore, we decided to invite Chinese students to eat in actual restaurants in the UK so we could gather both the students and waiters' authentic utterances.

There are various types of restaurants in Edinburgh (e.g. fast food, fast casual, casual, fine dining, etc.). We decided to focus on casual restaurants because this is the type of restaurant that students commonly eat at. To collect representative data, we decided to conduct field experiments at different restaurants. The restaurants we chose were chain restaurants as the waiters in these restaurants provide standard services (see Figure 3.10).



Figure 3.10 The four restaurants we selected for our experiment.

We also distinguished between reservation and walk-in scenarios as the waiters and students may have different interaction routines. We selected two restaurants for the walk-in scenario and two restaurants for the reservation scenario. Due to funding limitations, we only invited 4 participants to eat in the 4 selected restaurants. We invited the 4 new students who had previously participated in the interviews as all of them mentioned that they had not eaten in a UK restaurant before. By choosing these

students, we were able to get a better representation of the interactional mistakes that Chinese students make. Since the aim of the field experiments was to collect authentic utterances between waiters and students, we decided to let the students interact with the waiters without any pre-set goals or instructions (i.e. just like a normal dining context).

Experiment subjects, experimental setup and procedure

4 Chinese students were invited to eat in 4 different restaurants (see Figure 3.11). None of them had previously eat in a UK restaurant before. The experiment started when the students entered the restaurant and ended when the students walked out of the restaurant. Before the start of each experiment, we asked the students not to prepare regarding this topic and did not tell them which restaurant they would eat in. After meeting at an agreed location, the experimenter brought the students to the target restaurants.

During the experiments, the role of the experimenter was to facilitate the experimental process (e.g. explain the experiment to the waiter and ask them to perform normally) and to observe the students' actions (e.g. write down any inappropriate behaviours). No instructions were given to the students regarding what to eat and what to drink. Also, at the end of the experiments, the experimenter asked the students a few questions about their feelings regarding the dining process. The experiments were audio recorded with the permission of the students and the waiters who served the students.



Figure 3.11 A photograph of one of the field experiments. The photo was taken from one of the participated students. The permission was given by the student to be shown in academic publications.

Analysis procedures

The audio tapes were transcribed manually by the experimenters due to the background noise. After the transcription, we read the scripts and anonymised the sections that contained personal information. We then printed out these scripts and handed them to two native speakers who were not involved in the experiment and asked them to identify any inappropriate student utterances (e.g. impolite or non-natural sentences). Each script was annotated by one of the native speakers. The annotation process is illustrated below (Figure 3.12).

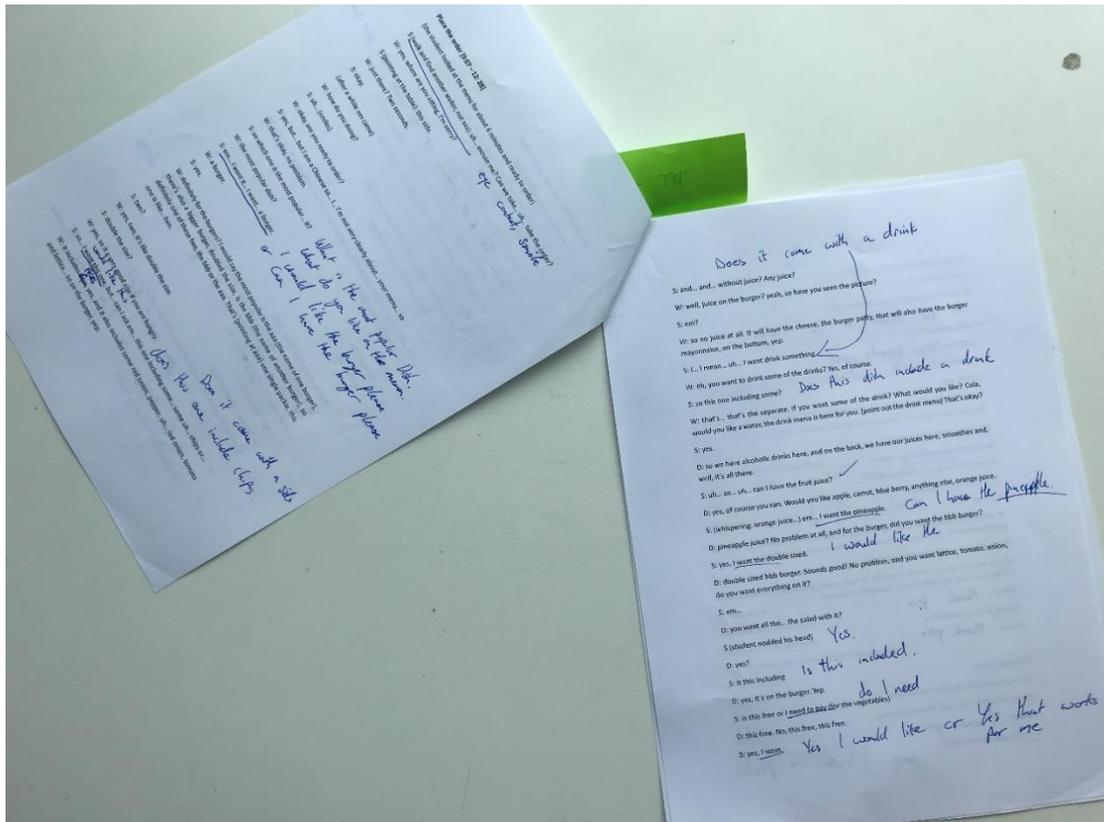


Figure 3.12 The pen and paper process used to identify inappropriate utterances (e.g. politeness issues or other pragmatic mistakes).

We then used Microsoft Word to comment on these mistakes (i.e. why the students made these mistakes). For the native speakers' annotations, we broadly classified them into politeness issues and other pragmatic failures (see Figure 3.13) with our justified reasons.

| | |
|--|--|
| <p>S: I would like to have traditional fish and chips... for 10 pounds and 25 [The big logo on the menu]»</p> <p>W: Okay, so the buttered haddock for 10 pounds and 25 cents, and would you like tikka sauce with that?»</p> <p>S: <u>A... No.</u>»</p> <p>W: That's fine, and would you like to change your chips to sweet fries?»</p> <p>S: <u>No.</u>»</p> <p>W: Okay. That's fine.»</p> <p>S: That's all, thank you.»</p> <p>W: Thank you. I'll take this (The menu).»</p> | <p>CHAT Li quan Pragmatic failure (don't know what to say, culture understanding). It is uncommon to add the price of the dish when ordering waiter definitely knows that.»</p> <p>CHAT Li quan Politeness failure (cognitive load) - forgetting to say thanks. (used many cognitive efforts to figure out what "tikka sauce is")»</p> <p>CHAT Li quan Politeness failure (cognitive load) - forgetting to say thanks. (used many cognitive efforts to decide which sides she want).»</p> |
|--|--|

Figure 3.13 A commented script that contained pragmatic and politeness mistakes.

To facilitate further analysis of the research findings, we then inputted the scripts into the NVivo software and derived a codebook according to the comments. The codebook for the field experiments is shown below (Figure 3.14).

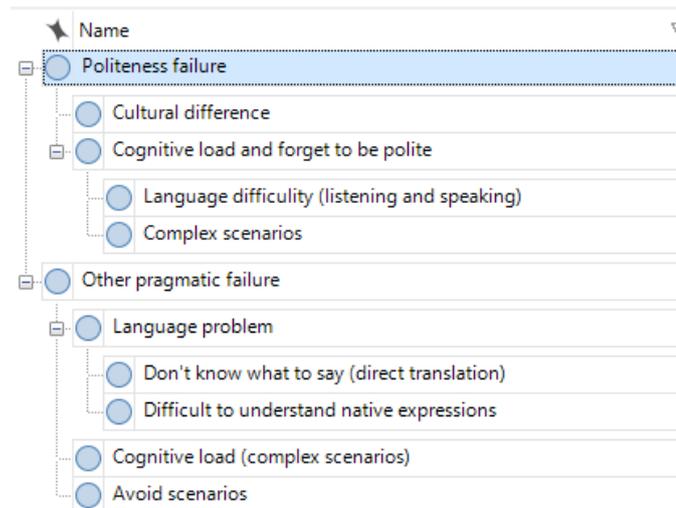


Figure 3.14 The codebook for the scripts of the field experiments.

Research findings

Theme 3: What politeness issues do Chinese students actually exhibit in restaurants?

From the field experiments, we found that the waiters treated the students politely even if the students committed impolite actions. For example, one student walked towards the waiter (who was busy at that moment) and used the term, “when will my dish come” to check for his main (which was impolite because he used an impolite expression and it would have been more polite to say, “I’m just checking if everything alright” and it interrupted the waiter’s workflow). The waiter replied to him politely, however, saying, “give me two seconds, I will check it for you”. There were also many cases where the students used “hello” rather than “excuse me” to call the waiters, but all the waiters would come over without any sign of complaint.

Another thing we found was that the students tried to avoid unnecessary conversations. They only ordered the items they were familiar with. For example, they did not ask the waiters for their recommendations, even if they could not understand the menus. One participant also did not order any drinks, not even a cup of water, because she did not know how and when to initiate the conversation.

When the students encountered unfamiliar scenarios, they tended to forget to use polite language. For example, when ordering drinks, many of the students used the phrase, “Can I have a cup of...”. When ordering mains, however, many of the students used the term “I want...” when they did not know the pronunciation of the dish they wanted. This kind of thing also happened when the students told the waiters what they wanted, but the waiter needed more details about the dish, e.g. “what do you want for the sides?”

or “how would you like your steak?”. As the participants were not prepared to answer these questions, they responded using the direct Chinese translation.

In addition, the students did not know the dining process in the UK. Many of them did not know that drinks and desserts have different menus and they also did not know that drinks are usually ordered before the mains. Therefore, the students called the waiters multiple times to take their orders. Also, some of the participants did not know the process of paying the bill and just went to the counter to pay (which could interrupt the workflow of the waiter working at the counter). Therefore, a lack of knowledge of social conventions also leads students to commit pragmatic mistakes.

In summary, the students exhibited politeness issues in the experiments. The most common ones were using “hello” to call the waiters and not knowing the appropriate language use (e.g. “when will my dish come?”). The students also tended to be non-interactive and did not make any small talk or banter during the interactions. Sometimes, the students forgot to use polite language in real-time, however, the waiters still treated them politely during these interactions.

Co-design session

Motivation

Since we want to design a CALL system that allows learners to practice customer-waiter interactions in restaurant contexts, we also needed to model the dining process and native customers' behaviours in detail so that we could raise students' meta-pragmatic awareness (i.e. not only teach students what to say, but also teach them when to say it). Therefore, we decided to set up a co-design session and invited native speakers and waiters to design a "paper prototype" to outline the dining process and the customers' behaviours. Co-design is a methodology commonly used in the design community. It is an activity that brings together all the stakeholders (i.e. people who are related to the design practice) to design the artefact. This is an effective way to design products because it includes domain experts from multiple areas in the dynamic design of the artefact (Sanders & Stappers, 2008).

Since from the field experiments, we found that Chinese students lack the knowledge of social conventions of the dining process in the UK, we thought it would be helpful if the students could identify which scenarios they were unfamiliar with. Therefore, we also invited Chinese students to participate in the co-design session. The main aims of the co-design session were to outline the customer-waiter interaction process in UK restaurants and to identify the scenarios that Chinese students struggled with.

Subjects and the codesign procedure

We invited 2 waiters (one who had worked as a waiter for 2 years and one who had worked as a waiter for 3 years), 2 native speakers, and 2 Chinese students (who had not been previously involved in the project and had little experiences in UK restaurants) to participate in the co-design session. The co-design session was conducted in the Design informatics studio in Evolution House at the University of Edinburgh. The entire co-design session lasted 2 hours. At the start of the session, we introduced the background of the project and the aims of the co-design session.

The first activity was a brainstorming activity, which involved the participants using post-it notes to write down all the possible scenarios that they could encounter in a restaurant (see Figure 3.15). During the process, a basic skeleton of the dining process was provided. Participants were asked to post the notes according to the dining timeline. Restaurant menus were also provided so that they could "role play" to recall the dining process.

In the second phase, we first introduced the concept of schema (i.e. behavioural scripts) and then asked the participants to merge these scenarios in a two-metre-long sheet of paper according to the timeline. This time, they were asked to use blue post-it notes to describe what the scenario was about (i.e. context information), red post-it notes to describe the waiters' actions and speech, and green post-it notes to describe the customers' actions and speech (see Figure 3.16).

In the third phase, we asked the Chinese students to go through the post-it notes to identify which scenarios they were unfamiliar with (see Figure 3.17). At the end of the co-design session, we conducted a question and answer session to clarify how we would use the “paper prototype” and to introduce our project in more depth.



Figure 3.15 The first phase of the co-design session: Brainstorming.



Figure 3.16 The second phase of the co-design session: Merging different scenarios and building the “paper prototype”.

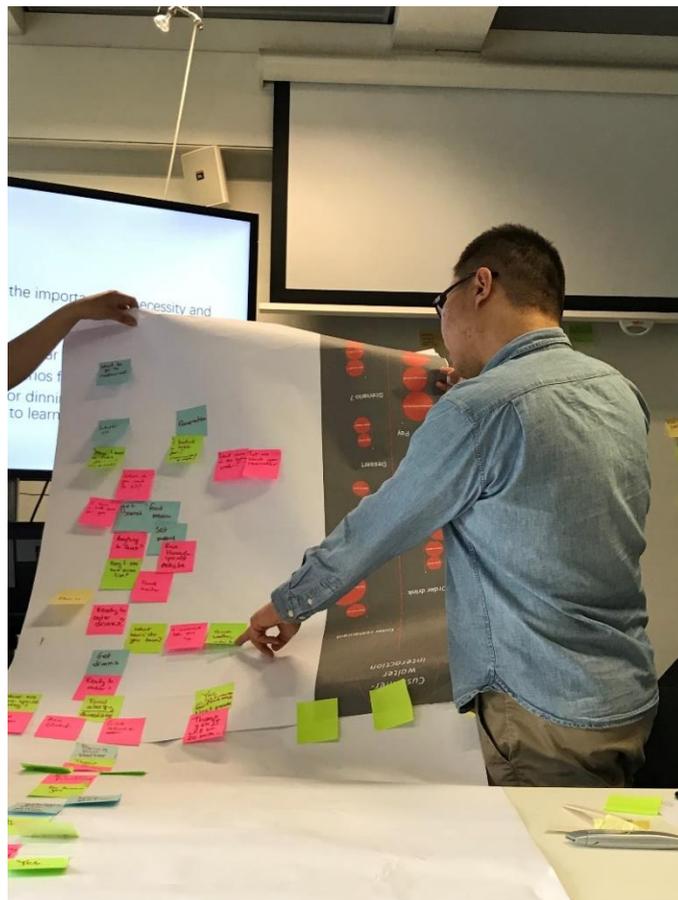


Figure 3.17 The third phase of the co-design session: Figuring out unfamiliar scenarios from the “paper prototype”.

Research findings

Theme 3: What are the pragmatically correct, authentic utterances for customer-waiter interactions in a restaurant?

Based on the “paper prototype” (shown in Figure 3.17), we captured the relatively complete customer-waiter interaction process in restaurant contexts, i.e. the process of entering the restaurant (see Figure 3.18), making an order (see Figure 3.19), having the meal (see Figure 3.20), and finishing the meal (see Figure 3.21). By linking these flow diagrams to the authentic utterances of waiters and students collected from the field experiments, we built a corpus that was used in our communicative CALL system.

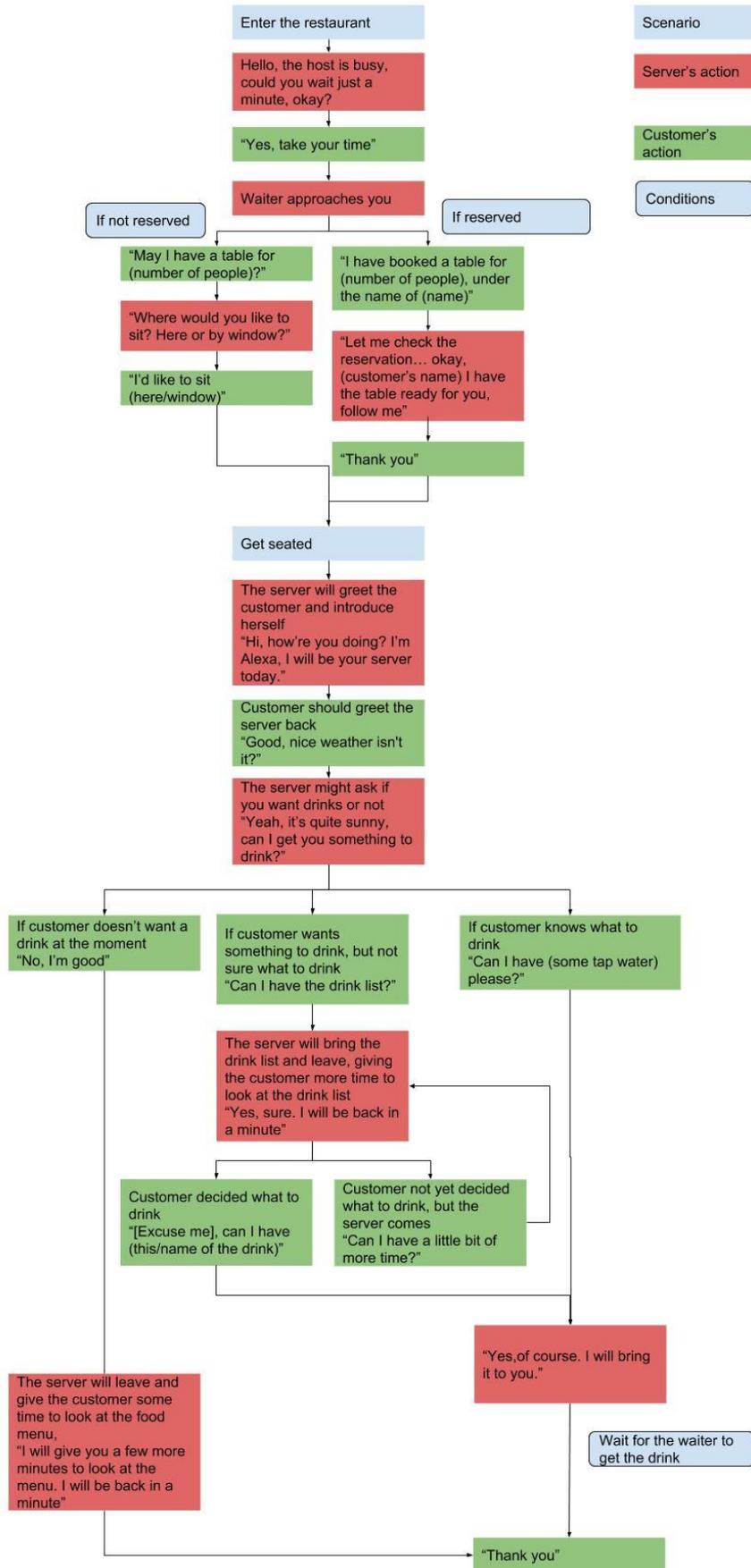


Figure 3.18 The customer-waiter interaction process in restaurant contexts: Entering the restaurant.

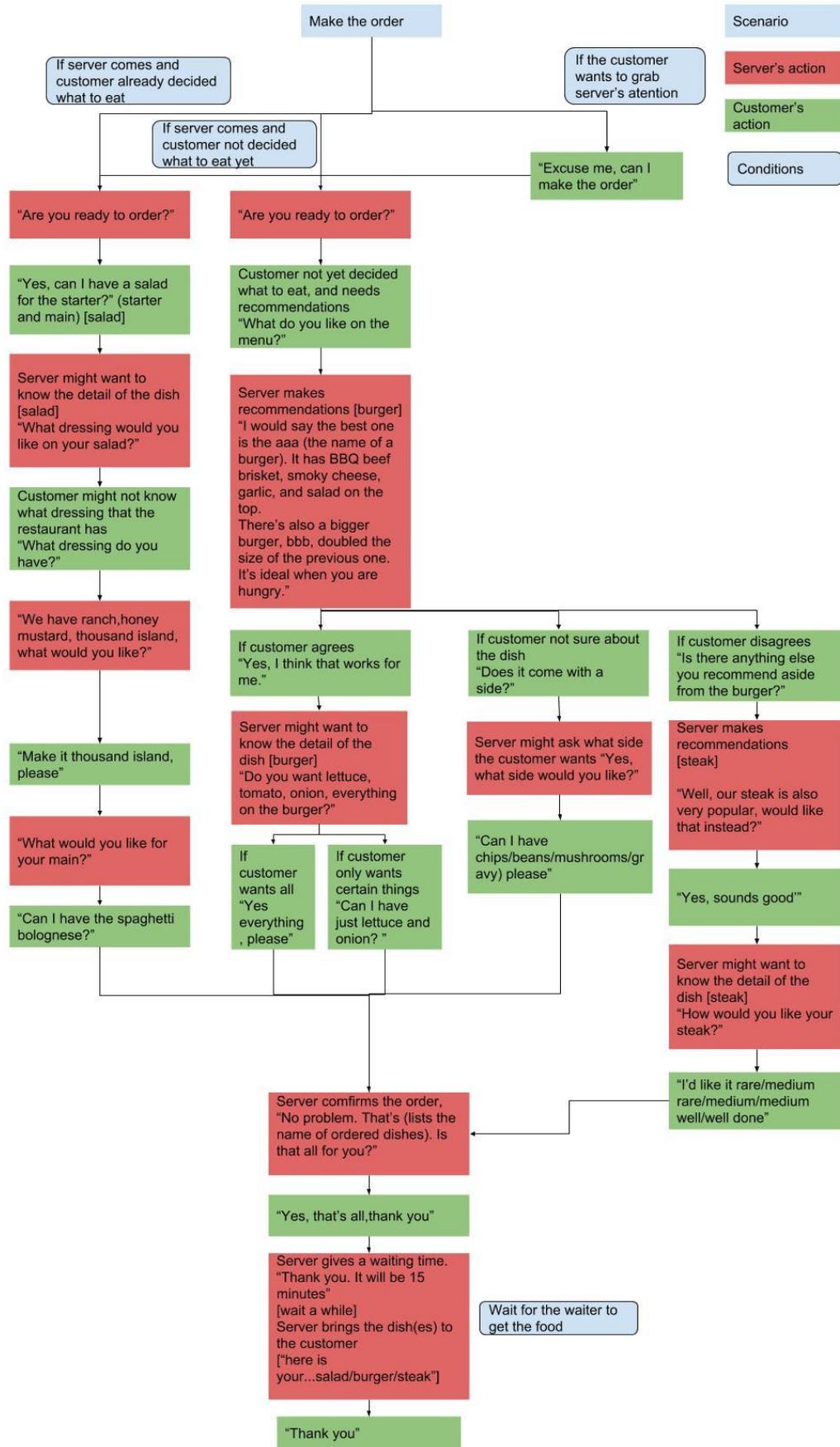


Figure 3.19 The customer-waiter interaction process in restaurant contexts: making an order.

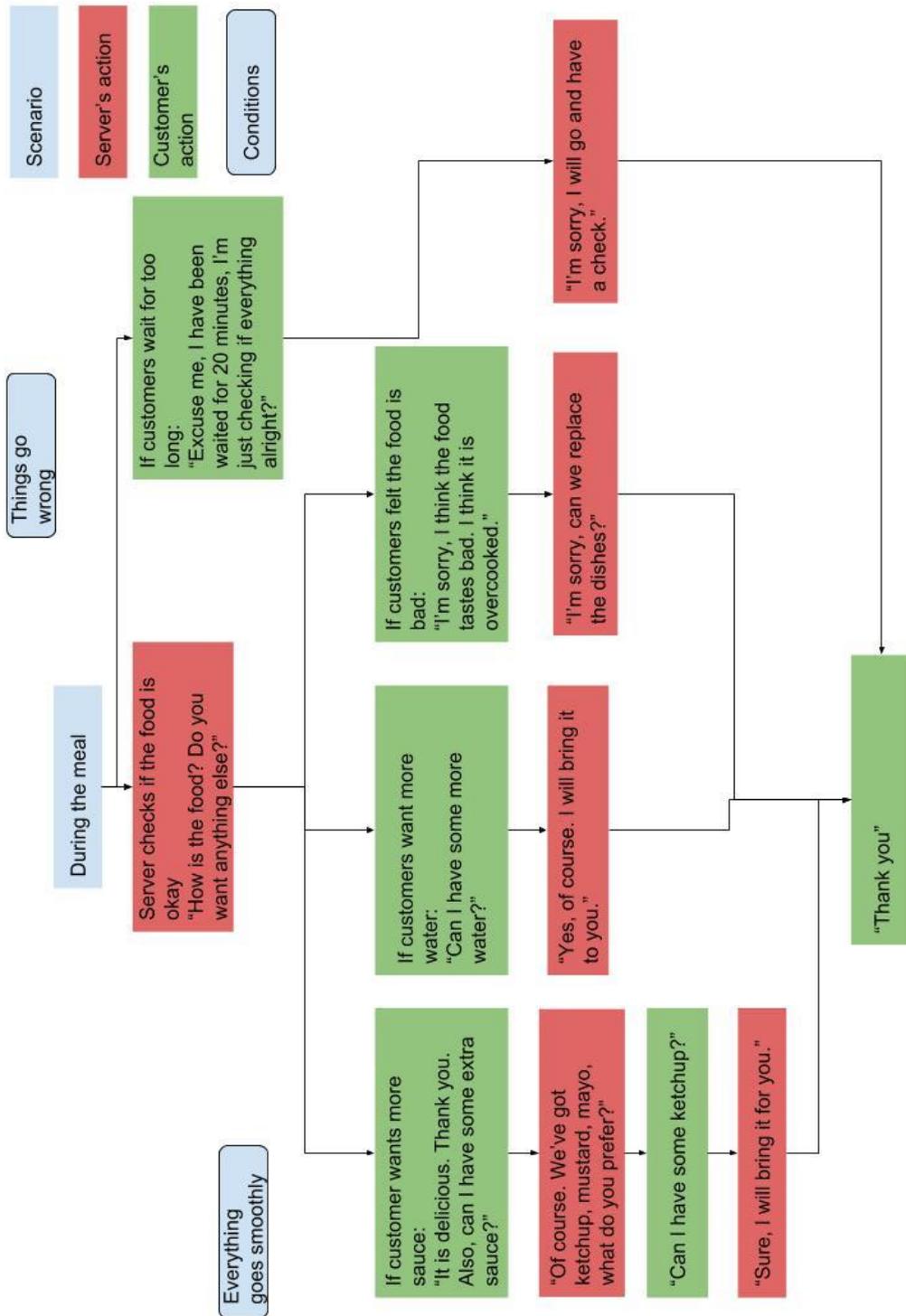


Figure 3.20 The customer-waiter interaction process in restaurant contexts: Having the meal.

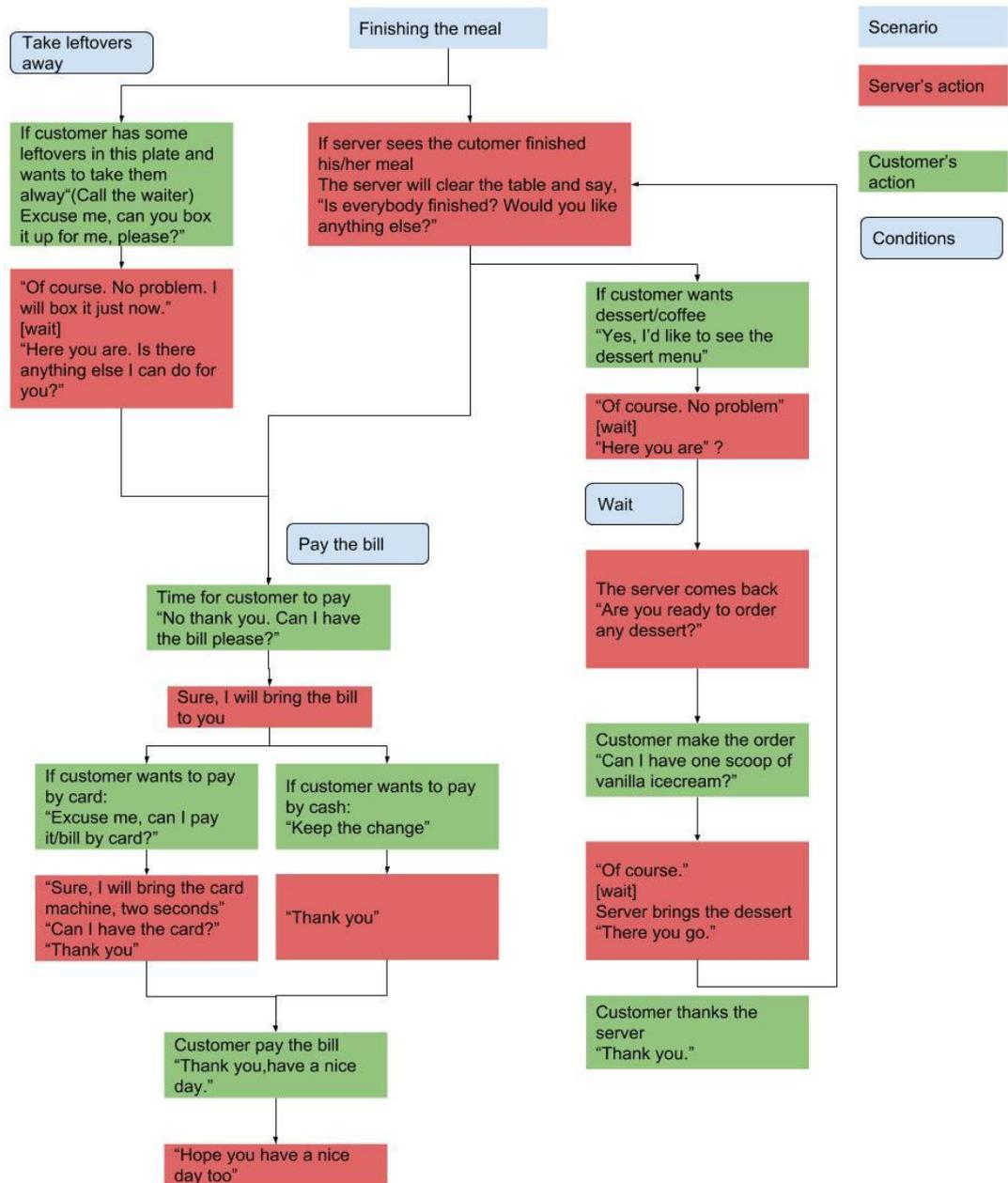


Figure 3.21 The customer-waiter interaction process in restaurant contexts: Finishing the meal.

In addition to the main contribution, the Chinese students from the co-design session reported that they were unfamiliar with scenarios which related to ordering food because there are lots of variations. Waiters might ask different kinds of unexpected questions (e.g. dressing for the salad, what side to have). Moreover, the students were surprised that people usually ordered drinks before food in UK restaurants (in China, customers order food and drinks together). The students also learned how to engage with the waiter when they enter the restaurant, how to “take way” their leftovers when they leave the restaurant, and how to complain politely when the food tastes bad.

Summary and reflection

In summary, we set up a co-design session to identify a relatively complete process of the basic customer-waiter interaction in restaurant contexts and some scenarios that the Chinese students were unfamiliar with. Due to the nature of our task design, however, we found that during the design session, the Chinese students, waiters, and native speakers were unable to cooperate well. In the first two phases, the Chinese students were isolated as there was no task for them. A similar situation also occurred for the native speakers and waiters in the third phase of the co-design session.

4. Implementation

Design decisions and key functional features

In this section, we will focus on two aspects of the system implementation: the design of the corpus and the design of the teaching methods.

For the design of the corpus, we focused on using the data that we had collected because we noticed the importance of using authentic materials from reading the literature and from analysing the TESOL students' interviews. A sample section of the corpus is shown below (Figure 4.1).

```
task_id: 5
recognise: Yes, can I have a salad for the starter?[I (want) a salad.|Yes, can I have a salad for the starter?|And I (want) a salad.
server_speech: <speech><break time='2s' />What dressing would you like on your salad?</speech>
server_intent: 服务员想知道你的沙拉准备配什么酱。
task: 你不确定餐厅有什么酱，问问服务员吧。
suggested_speech: What dressing do you have?
unsuggested_speech: Tell me what you've got.
Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg

task_id: 6
recognise: What dressing do you have?|Tell me what you've got).
server_speech: <speech><break time='2s' />We have ranch, honey mustard, thousand island, what would you like?</speech>
server_intent: 服务员介绍了餐厅常用的沙拉酱，ranch（牧场酱/蛋黄酱），honey mustard（蜂蜜芥末酱），thousand island（千岛酱）。
task: 你觉得千岛酱不错，快告诉服务员吧。
suggested_speech: Can you make it with thousand island?
unsuggested_speech: I want thousand island, please.
Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
```

Figure 4.1 For task ID 5, server intent: The waiter wants to know what dressing you would like to have on your salad, task: You do not know what dressings the restaurant has, so you decide to ask the waiter. For task ID 6, server intent: The waiter tells you which salad dressings are commonly used in the restaurant, for example, ranch, honey mustard, and thousand island, task: you think thousand island is a good choice, so you decide to tell the waiter.

Inspired by Chiu et. al (2007), we decided to use the authentic utterances of waiters, native speakers, and students. The corpus contains a set of utterances that students commonly use and utterances that native speakers commonly use. During the practice, the system will display a native and a non-native utterance for students to choose from (see Figure 4.1, suggested speech and unsuggested speech). By comparing the native and non-native utterances, students might become aware of the pragmatic difference between them. We also incorporated context information into the corpus, so that students can learn metapragmatic strategies (i.e. learn what to say and when to speak) (see Figure 4.1, server intent). In addition to using the approaches of Chiu et. al (2007), since from the field experiments and the co-design session, we noticed that many students were unfamiliar with the dining process in UK restaurants (e.g. order a drink before ordering food, when and how to pay the bill). Accordingly, we decided to introduce some social conventions explicitly for when students encounter unfamiliar scenarios in our system (see Figure 4.2, server intent). Moreover, when designing the flow diagrams, we added some small talk (e.g. “nice weather isn't it”, “have a nice

day”) for students to practice so that students might be more interactional in a restaurant context.

```
task_id: 1
recognise:
server_speech: <speaK><break time='2s' />Are you ready to order?</speaK>
server_intent: 在英国，一般来说，服务员会在合适的时机主动地走过来问你需不需要点餐。
task: 你决定先点一个沙拉做前菜。
suggested_speech: Yes, can I have a salad for the starter?
unsuggested_speech: I want a salad.
img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
```

Figure 4.2 Server intent: In the UK, the waiter will come to you at the right time to ask if you need to order. You don't need to hurry. Task: You decide to order a salad as an appetiser.

For the design of the teaching methods, because from the field experiments we noticed that students tend to forget to use polite language in conversations, we decided to use the TBLT approach so that students can practice polite language in real-time. In order to make things manageable, we decided to break the restaurant context into five major scenarios, i.e. “enter restaurant”, “get seated”, “make order”, “have meal”, and “finish meal”. For each of these scenarios, we designed a sequence of tasks for students to solve based on the flow diagrams (see Figure 4.1 or 4.2, task). In accordance with the ZPD and scaffolding theory, hints were also provided when students became stuck on tasks that they did not know how to answer. For example, one task asked students to order spaghetti. Some students did not know the term “spaghetti” or did not know how to pronounce it. They might just say “can you give me a hint” or simply “hint”. The smart speaker will give the correct answer in text and audio format (Figure 4.3). Then, students are asked to repeat the answer to continue the conversation.

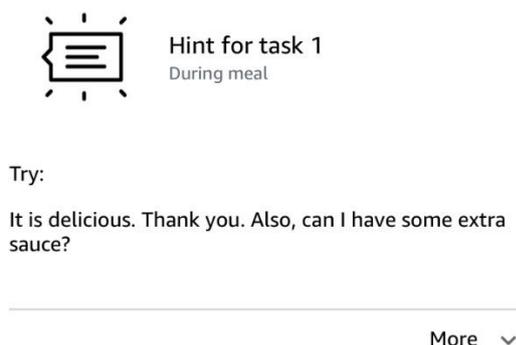


Figure 4.3 An example of text-based hint response displayed in the app. This is the screen shot of the hint for task 1 during the meal scenario.

Since many of the students reported that they felt hard to deal with the variations in conversations, we decided to introduce some randomness for them to practice. Within the same scenario, when there is a divergence, the CALL system will select the branch randomly, so that students can encounter different tasks at different times. For example,

in the “make order” scenario, the system might select a task either for the student to order a salad or to ask the waiter for recommendations (Figure 4.4). This dynamic randomness enables the system to better simulate authentic environments, which is an advantage of our CALL system compared with textbooks.

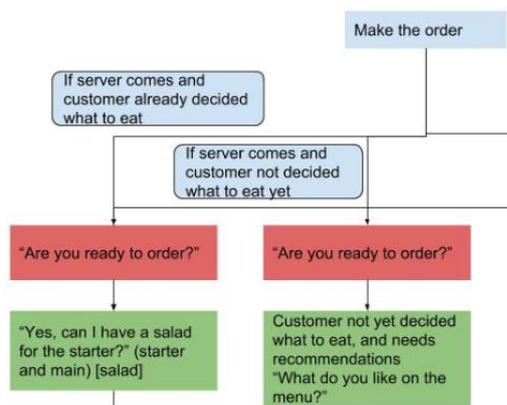


Figure 4.4 When the system detects there are 2 branches, the system will select one branch down which to proceed randomly.

Also, analysing the interviews of TESOL students, we noticed that Chinese students gain most from TBLT if they can engage in and familiarise themselves with the new knowledge before performing the tasks; therefore, we decided to implement two teaching modes in our system. The first one is “full sentence mode”, where a set of optional (polite or impolite) utterances will be displayed on the mobile app (Figure 4.5, left) for students to choose from. All these choices will be recognised by the smart speaker. The other one is “task mode”, where only the context information and the task will be provided (i.e. the pure TBLT) (Figure 4.5, right). However, due to technical limitations, only some pre-input utterances will be recognised by the smart speaker.



Figure 4.5 Two modes of the CALL system. Left: “Full sentence mode”. Right: “task mode”.

The aim of “full sentence mode” is not only to let students become familiar with the learning materials, but also, according to the information processing theory, to let this

piece of new knowledge become stored in the students' working memory. Once students have finished all the tasks in "full sentence mode", the system will ask students to practice in the "task mode" immediately. By recalling the memory, students might store this piece of new knowledge in their long-term memory.

In addition, from reading the literature, we noticed that explicit instructions are more effective than implicit instructions when teaching pragmatics (Rose, 2005); therefore, we decided to give explicit feedback on students' performance of the use of polite language. If a student uses "I want..." to make the order or uses "hello" to call the waiter (or uses other impolite utterances), the system will tell the student explicitly that it is impolite at the end of the conversation (Figure 4.6).

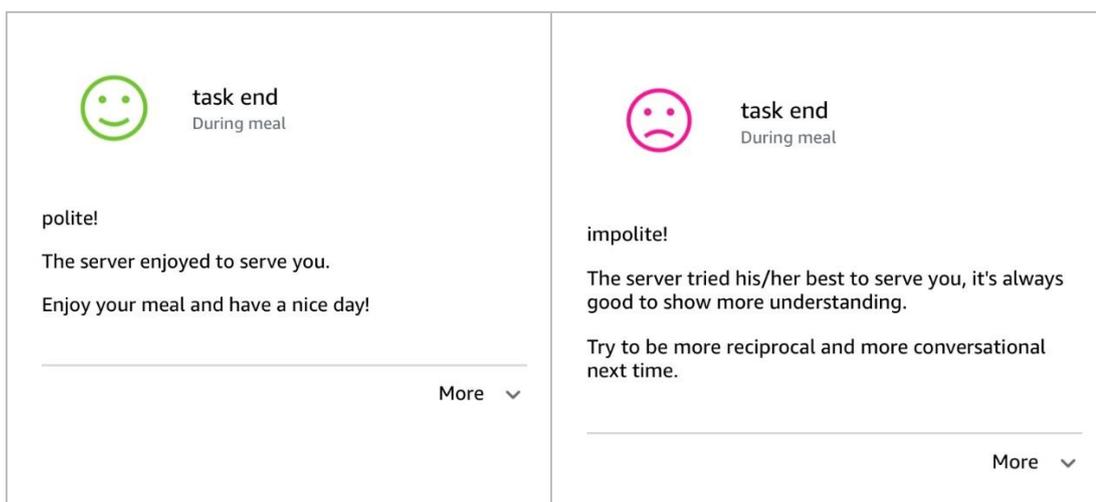


Figure 4.6 The feedback provided by the CALL system. Feedback is given based the student's use of polite language. If the learner behaves politely, the "polite feedback" will be shown in the mobile app (image on left); otherwise, a "impolite feedback" will be shown.

Learner-system interaction

The interaction process of the prototype is similar to that of the prototype developed in DI project (Chai, 2018). The prototype consists of 2 modes and 5 scenarios. For each scenario, there are 8-14 tasks for learners to complete. However, due to the random branch selection, the learner might not need to complete all the tasks to end the conversation.

For the full sentence mode, first, the mobile app will display the initial task, its context information, and one polite expression and one impolite expression for the learner to read (tasks and their context information are written in Chinese to reduce the learner's cognitive load). After reading the task and context information, the learner will choose one of the sentences to read aloud. The smart speaker then recognises the utterance. If it is a polite expression, the system will add 1 "polite" score and then update the database, and if it is an impolite expression, the system will subtract 1 "polite" score and then update the database. Then, the smart speaker will produce a speech response based on the rule written in the corpus. At the same time, the mobile app will issue a new task for the learner to complete. At the end of the conversation, the system will generate feedback based on the "polite" score that the learner has. If the score is positive, the system will display the polite feedback (Figure 4.6, left). If the score is negative, the system will display the negative feedback (Figure 4.6, right).

For the task mode, the mobile app will display only the task and its context information for the learner to read. After reading the information, the learner will think and come up with an utterance by himself. The smart speaker will then try to recognise the utterance. If the utterance is written in the corpus or does not differ from it too much, the smart speaker will produce the speech response. If the utterance is not in the corpus, the smart speaker will fall back to an unknown state and produce "Sorry, I don't understand. Could you rephrase it?" and ask the learner to come up with another utterance. When the learner does not know how to answer the task, the learner might say "hint" so that the system will give an answer (i.e. the polite expression) to the task in both text (display on the mobile app) and speech (produced by the speaker) format.

Conversation modelling and the software infrastructure

For each turn of the conversation, the learner will produce an utterance that is based on the visual information displayed on the mobile app (i.e. the task, its context information, and the suggested and unsuggested utterances if the system is in “full sentence” mode). Then, the learner’s utterance will be recognised by the CALL system. The CALL system will then display new visual information which lets the learner produce the utterance for the next round. This conversation process is shown below (Figure 4.7).

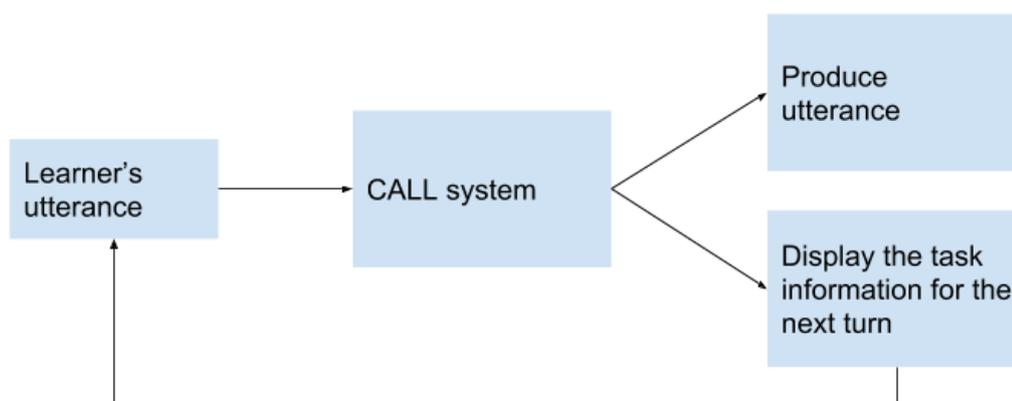


Figure 4.7 The conversation process between the learner and the CALL system.

The entire conversation is modelled by a finite state machine. In each state, there is a set of pre-written utterances that the system can recognise. If the learner’s utterance matches one of the pre-written utterances of that state, the system will enter that state and synthesise the pre-stored response. At the same time, the system will display the task information of the next state for the learner to work out. In the backend, the system will figure out whether the matched utterance is a polite or impolite utterance by using keywords identification (e.g. if the system detects there is the word “want” in the utterance, it will mark it as impolite). Then, the system will update the “polite” score and send it to the database. The current state transaction will also be updated and stored in the database. Once the system enters the “hint” state, the system will retrieve the most recent state transaction and produce and display the answer of the previous state (i.e. the state before the “hint” state). After the learner repeats the answer, the system will leave the “hint” state and enter the state that it is supposed to enter without entering the “hint” state. If the learner’s utterance does not match any pre-written utterances in the corpus, the system will enter the fall-back state, which asks the learner to rephrase his speech. The conversation continues until the system hits the end state, where the system will retrieve the “polite score” and display the feedback. The model of the system is illustrated below (Figure 4.8).

In the implemented system, we used the Alexa voice service (Alexa voice service, 2018) to implement the speech recognition, the speech synthesis, and the mobile app components of our system (Figure 4.9). The backend dialogue management was written using the Flask and Flask-ask framework (for example code, please see supplementary material). The corpus and the finite state machine were hard coded and written in separate files. A screen shot of a finite state machine is shown below (Figure 4.10). For the database, we used the Amazon DynamoDB (Amazon DynamoDB, 2018) to store the learner’s “polite” score and the current state transaction, and we used the Amazon S3 (Amazon S3, 2018) to store the image files which will be displayed on the mobile app (Figures 4.11 & 4.12 respectively). The detailed software infrastructure is illustrated in Figure 4.13.

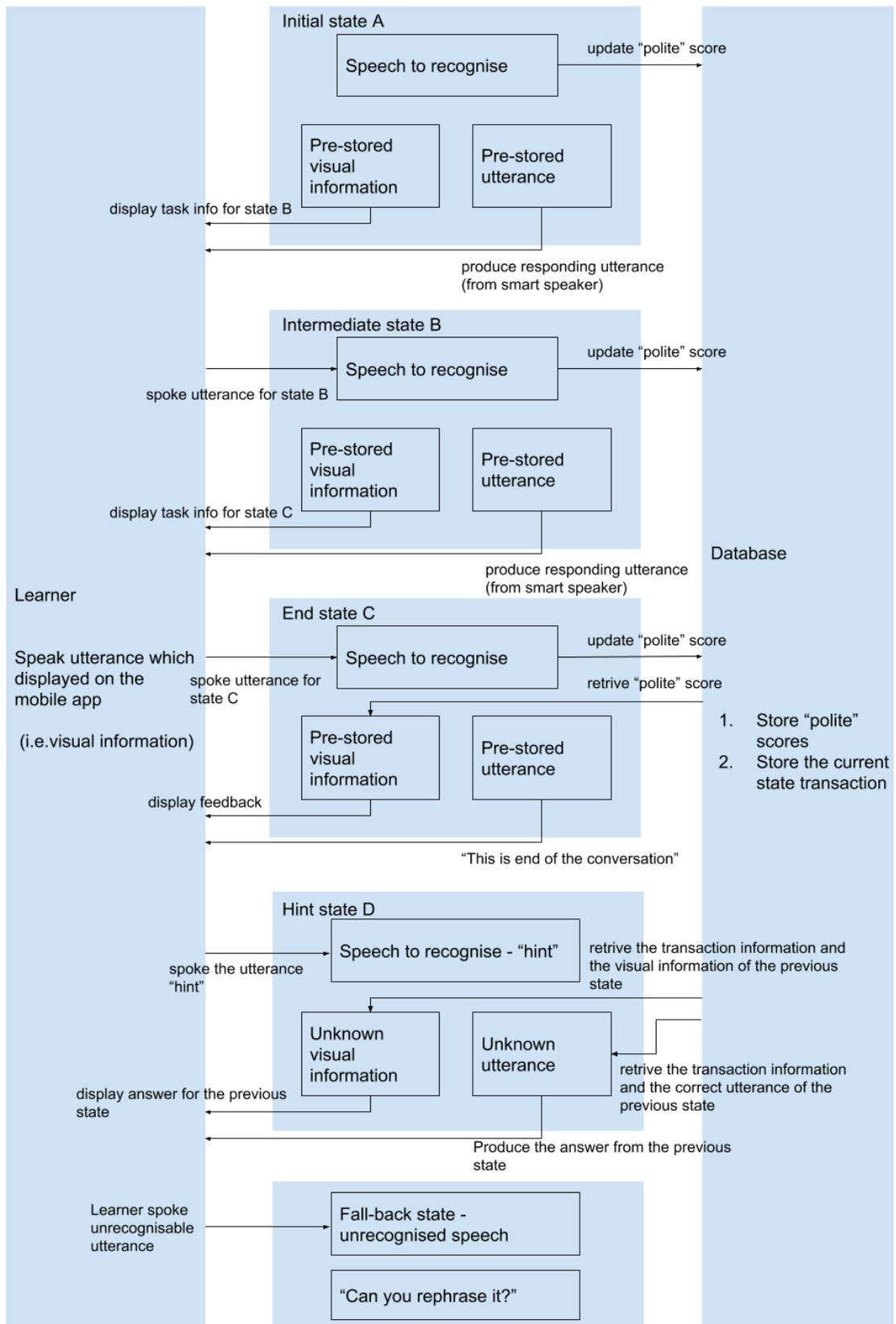


Figure 4.8 The model of conversation implemented in the CALL system.

```

make_order_task_diagram x
1 start: 1, 2, 3
2 1: 5
3 3: 4
4 4: 5
5 5: 6
6 6: 7
7 7: 8
8 8: end
9 2: 9
10 9: 10, 11
11 10: 8
12 11: 12
13 12: 8

```

Figure 4.9 An example of the finite state machine from the “make order scenario”. The numbers are task IDs which link to the corpus.

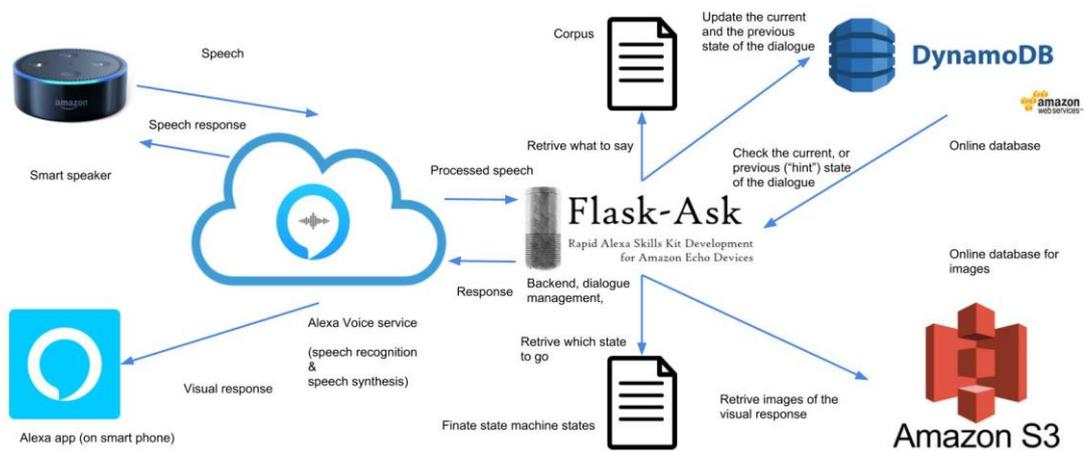


Figure 4.10 The software infrastructure of the prototype.

5. Evaluation

Since the goal of our project is to create and evaluate the CALL system that teaches Chinese students how to use polite language in restaurant contexts, we decided to evaluate the system based on two dimensions: its perceived learning effectiveness and its usability.

In the literature, the most common way to evaluate CALL systems is by assessing their teaching potential. This approach usually includes longitudinal studies whereby students are divided into an experimental group and a control group. The students from the experimental group receive constant instructions from the CALL system; whereas the students from the control group do not. Learning effectiveness is measured by comparing students' performance in the pre-and post-test. For example, Zaini and Mazdayasna (2014) evaluated a CALL system on its effectiveness in enhancing a learner's writing skills. By inviting 44 students to participate and by intervening these students throughout a semester, they concluded that students who used the CALL system outperformed the students who did not. However, this kind of evaluation requires a large number of samples and a long-time period to evaluate. Therefore, it is impossible to conduct this kind of evaluation in the scope of this dissertation project. Instead, we decided to use interviews to measure the perceived learning effectiveness of the implemented CALL system, which is used as an indicator of the potential effectiveness of the CALL system.

Usability is also an important aspect of the CALL system evaluation. Since the CALL system is a piece of software, good usability is a prerequisite for students to learn effectively (Hubbard, 2006). In order to evaluate the usability of the implemented CALL, we used the System Usability Scale (SUS) (Brooke, 1996) (see also the Appendix for the SUS questionnaire), which is a simple (i.e. 10 questions, small sample size required) but reliable measure of the software's usability from the perception of the user (i.e. it can effectively differentiate between usable and unusable systems).

Evaluation design

We noticed from the user research that both old students (those who have lived in UK for about a year) and new students (those who have just come to the UK) make pragmatic mistakes and have issues with politeness, therefore, we decided to invite students from both groups to participate in the evaluation to see whether there is a difference in the perceived learning effectiveness of the system.

For usability, we used the standard SUS questionnaire. Since we were inviting Chinese students to participate in the evaluation, we decided to translate the words that are difficult to understand into Chinese, e.g. “inconsistency (不一致的)” and “cumbersome (麻烦的)” so that participants can understand the questions in the questionnaire accurately.

For the interviews, we designed a set of questions to figure out the perceived learning effectiveness and these are shown in Table 5.1. Since we have a clear objective for the interviews (i.e. to measure the perceived learning effectiveness), we decided to conduct the interviews in a closed-structure format. To facilitate students to express their opinions accurately, we translated these questions before conducting the interviews.

Table 5.1 The questions used in the evaluation interview.

| |
|---|
| Q1 Have you learned anything from the interaction process? In which aspect of English? |
| Q1 你在和系统交互的过程中有学到任何东西吗? 哪一方面呢? |
| Q2 What is the most memorable sentence/expression that you have learned? |
| Q2 你学到的印象最深的句子或者表达是什么? |
| Q3 Which mode is better? Full-sentence mode or task-only mode, or a combination? |
| Q3 那一个模式比较好? 显示句子的模式还是任务模式? 还是两者混合起来用? |
| Q4 Next time you go to a restaurant, will you be aware of using these polite expressions? |
| 下一次你去餐厅的时候, 你是否知道去用你今天学到的礼貌用语? |
| Q5 Would you use it (the implemented system) again? |
| Q5 你会再次用它吗? |
| Q6 Would you want to see this being implemented for other situations as well? |
| Q6 你是否希望这个系统能帮助你学习其他场景的用语? |

Subjects and the evaluation procedure

We invited eight Chinese students (four new students and four old students) to participate in the evaluation. All students are current postgraduate students from the University of Edinburgh, who were previously not involved in the project. They study various subject areas (e.g. design, informatics, education, psychology, etc.). All students had an IELTS speaking score of around 6–6.5 (i.e. upper-intermediate speakers) (CEFR, 2018) at the time they arrived in UK.

For each of the participants, firstly, we introduced them to the project and how to use the Alexa app and the Alexa smart speaker. Then, we asked the participants to go through each of the five scenarios (i.e. “enter restaurant”, “get seated”, “make order”, “have meal”, and “finish meal”) firstly in “full sentence mode” and then in “task mode” (Figure 5.1). After the participants finished all five ordering scenarios, we asked the participants to immediately fill in the SUS questionnaire. We then interviewed the participant using the questions in Table 5.1. While the participant was answering the questions, we took hand-written notes on the participant’s opinions (in Chinese). All the SUS questionnaires and the interviews were conducted anonymously.



Figure 5.1 An image of a participant practising the scenarios in the evaluation session.

Analysis procedure

The SUS questionnaires were analysed based on the scoring procedure described in Brooke (1996). Firstly, we put the questionnaire data into the Excel software, and then used an Excel spreadsheet to automate the scoring process (System usability scale - calculator, 2017) (Figure 5.2). The average overall score of the 8 participants, the standard deviation, and the average score of each question were examined.

| Participants | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 |
|--------------|----|----|----|----|----|----|----|----|----|-----|
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |

| Scales | | SUS score (/100) | Grades |
|---------------|------------|------------------|--------|
| Odd items | Even items | | |
| -5 | 0 | -12.5 | F |
| -5 | 25 | 50 | F |
| -5 | 25 | 50 | F |
| -5 | 25 | 50 | F |
| -5 | 25 | 50 | F |
| -5 | 25 | 50 | F |
| -5 | 25 | 50 | F |
| -5 | 25 | 50 | F |
| -5 | 25 | 50 | F |
| -5 | 25 | 50 | F |
| -5 | 25 | 50 | F |
| -5 | 25 | 50 | F |
| -5 | 25 | 50 | F |
| -5 | 25 | 50 | F |
| Average score | | 43.75 | F |

Figure 5.2 The spreadsheet used for the SUS questionnaires scoring process.

The interview notes were put into the Word software. Then we translated and summarised them into a table according to the interview questions (see Figure 5.3 for detail on the summary, please see also Appendix - the summary of results from the interview).

Interviewee 1, 2, 5, 6 are old students

Interviewee 3, 4, 7, 8 are new students

| Questions | Shorted responses |
|-----------|---|
| 1 | <p>(interviewee 1) Yes. Use of politeness expressions.</p> <p>(interviewee 2) Yes. I learned a lot of authentic expressions.</p> <p>(interviewee 3) Yes. It helped me a lot with how to behave politely in the restaurant. The sentence comparison makes me aware that what I used to say is inappropriate.</p> <p>(interviewee 4) Yes. Polite language use, and authentic situational expressions. Sometimes direct translation does not convey the exact meaning. I found that I used a lot of wrong expression in the past, e.g. "checkout".</p> <p>(interviewee 5) Yes. Authentic expressions.</p> <p>(interviewee 6) Yes. Polite expressions and other authentic expressions</p> <p>(interviewee 7) Yes. Pronunciation, new words (e.g. dressing) and polite expression "Can I..."</p> <p>(interviewee 8) Yes. Polite and other authentic expressions.</p> |

Figure 5.3 The summarised notes for question 1, "Have you learned anything from the interaction process? In which aspect of English?"

Results and discussion

Usability of the system

The average overall score of the system is 71.875, which is above the average SUS score for all systems ($71.875 > 68$). This means that the implemented system is generally usable. The standard deviation of the overall score of the system is 8.63, which means that to some degree participants tend to agree with each other.

Since question 4 (“I think that I would need the support of a technical person to be able to use this system”) and question 10 (“I needed to learn a lot of things before I could get going with this system”) can also be used to measure the learnability of the system, we calculated the average scores of all questions and compared the average score between question 4 and 10 with other usability-related questions (see Figure 4.4, the average scores of different questions). It shows that the implemented system has a better usability than learnability (perhaps they might not use it to interact with the smart speaker).

The overall SUS scores of each individual participant are visualised in the box diagram in Figure 5.5.

System Usability Scale (SUS) Scoring Sheet
 SUS data (scored 1=Strongly disagree; 5=Strongly agree)
 Average score is 68

| Participants | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Scales | | |
|--------------------------|----------------|-------------|-----------|---------|---------|-----------|---------|---------|-------------|----------|-----------------|------------|------------------|
| | I think that I | I found the | I thought | I think | I found | I thought | I would | I found | I felt very | I needed | Odd items | Even items | SUS score (/100) |
| 1 | 4 | 2 | 3 | 4 | 4 | 1 | 4 | 2 | 4 | 3 | 14 | 13 | 67.5 |
| 2 | 4 | 2 | 4 | 3 | 5 | 1 | 4 | 2 | 4 | 3 | 16 | 14 | 75 |
| 3 | 5 | 1 | 4 | 2 | 5 | 1 | 5 | 1 | 3 | 3 | 17 | 17 | 85 |
| 4 | 4 | 2 | 3 | 3 | 4 | 2 | 5 | 1 | 4 | 5 | 15 | 12 | 67.5 |
| 5 | 4 | 1 | 4 | 2 | 4 | 1 | 5 | 1 | 3 | 3 | 15 | 17 | 80 |
| 6 | 4 | 1 | 4 | 3 | 5 | 2 | 4 | 2 | 5 | 4 | 17 | 13 | 75 |
| 7 | 4 | 2 | 4 | 2 | 4 | 1 | 2 | 2 | 3 | 3 | 12 | 15 | 67.5 |
| 8 | 3 | 2 | 2 | 4 | 5 | 1 | 4 | 3 | 2 | 3 | 11 | 12 | 57.5 |
| Average on each question | 4 | 1.625 | 3.5 | 2.875 | 4.5 | 1.25 | 4.125 | 1.75 | 3.5 | 3.375 | Average score | | 71.875 |
| | | | | | | | | | | | Standard deviat | | 8.634441003 |

Figure 5.4 The analysed results from the SUS questionnaire.

System usability scores of the 8 participants

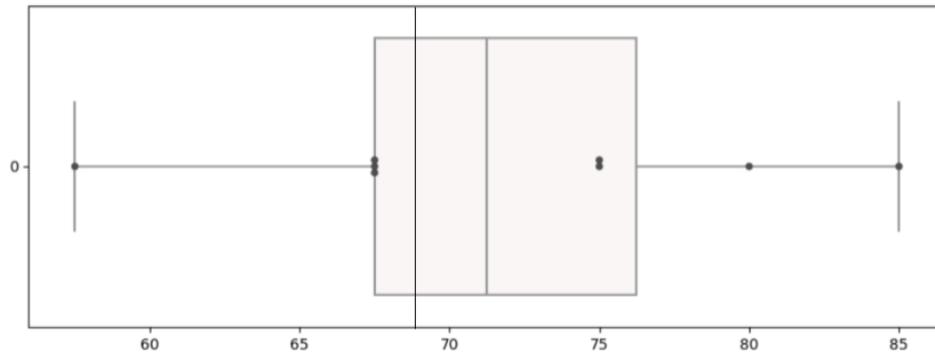


Figure 5.5 The overall SUS scores of the 8 participants.

Perceived learning effectiveness of the system

Q1 Have you learned anything from the interaction process?

All students (from both groups) reported that they learned something from the interaction with the CALL system. 2 old students and 4 new students mentioned explicitly that they learned the use of polite language in restaurant contexts. The other 2 old students mentioned that they learned some authentic expressions. One old student explicitly mentioned that he was not aware of politeness issues before attending the evaluation session. In addition, students also mentioned that the system helped them to learn situational vocabulary and pronunciation. A summary of the interview notes is shown below (Table 5.2).

Table 5.2 Summary of notes for interview question 1.

| |
|--|
| <p>Old students:</p> <p>(interviewee 1): Yes. Use of politeness expressions.</p> <p>(interviewee 2): Yes. I learned a lot of authentic expressions.</p> <p>(interviewee 5): Yes. Authentic expressions.</p> <p>(interviewee 6): Yes. Polite expressions and other authentic expressions.</p> |
| <p>New students:</p> <p>(interviewee 3): Yes. It helped me a lot with how to behave politely in a restaurant. The sentence comparison made me aware that what I used to say is inappropriate.</p> <p>(interviewee 4): Yes. Polite language use, and authentic situational expressions. Sometimes direct translation does not convey the exact meaning. I found that I have used a lot of incorrect expressions in the past, e.g. 'checkout'.</p> <p>(interviewee 7): Yes. Pronunciation, new words (e.g. dressing) and polite expressions 'Can I...'</p> <p>(interviewee 8): Yes. Polite and other authentic expressions.</p> |

Q2 What is the most memorable sentence/expression that you have learned?

In terms of the most memorable expressions they learned, both old and new students mentioned authentic speech acts. One old student and one new student said that the most memorable phrase was “What do you like on the menu?”, because it sounds friendly. Another couple of old and new students said that they had not seen the phrase “box it up” before, so it was memorable for them. Interestingly, only two students reported explicitly that the most memorable expression for them was a polite expression (i.e. “cheers”, “Can I...”).

Table 5.3 Summary of notes for interview question 2

| |
|---|
| <p>Old students:</p> <p>(interviewee 1): Initiating talks when entering the restaurant “under the name of”.</p> <p>(interviewee 2): The pronunciation of “spaghetti” and use of “overcooked” to describe something that tastes bad.</p> <p>(interviewee 5): “What do you like on the menu?”, unlike other polite expressions, it is very friendly.</p> <p>(interviewee 6): “Box it up”</p> |
| <p>New students:</p> <p>(interviewee 3): “Box it up”, I really did not know that before.</p> <p>(interviewee 4): “Cheers” means thank you.</p> <p>(interviewee 7): “What do you like on the menu?”, it sounds natural.</p> <p>(interviewee 8): “Can I...” for request and the word “dressing” to describe the sauce on the salad.</p> |

Q3 Which mode is better? Full-sentence mode or task-only mode, or a combination?

When comes to the teaching methods, different students answered differently. Many students thought that the task mode is effective, as it can make the student actively think. However, an old and a new student thought that using task mode requires a lot of cognitive effort. The rest of the students thought that the best way is to combine these two modes together, because full-sentence mode allows them to familiarise themselves with the correct answers, and the task mode allows them to recall the correct answers. This is less cognitively demanding than pure task mode.

Table 5.4 Summary of notes for interview question 3

| |
|---|
| <p>Old students:</p> <p>(interviewee 1): Task. It makes me think about the appropriate language use. If I do not know how to answer it, I can use hint, and then I will memorise it.</p> <p>(interviewee 2): Task. It makes it more memorable when the system points out that I was using the wrong (non-native) expression, and then asks me to correct it by giving the correct one.</p> |
|---|

| |
|--|
| <p>(interviewee 5): Mixed. In the first round, I can read the sentence; in the second round I organise the sentence based on my memory.</p> <p>(interviewee 6): Full. I think the task mode is effective but demanding, as I have to organise the words on my own. When I get it wrong, it makes me feel less confident, but in full mode, I can practise without too much effort.</p> |
| <p>New students:</p> <p>(interviewee 3): Mixed. The first one is less cognitively demanding and allows me to familiarise myself with the expressions. The second one enables me to memorise the expression, especially when I am using hint.</p> <p>(interviewee 4): Mixed. I can familiarise myself with the context and materials in the first part and then memorise them in the second part when I am practising.</p> <p>(interviewee 7): Task. The task gives me more freedom to try, if it does not work, then I will use hint, and this process allows me to memorise better.</p> <p>(interviewee 8): Full. It makes me aware of which one is appropriate. Also, sometimes I cannot understand the speaker's utterance. The sentences helped me to guess the meaning of the utterance.</p> |

Q4 Next time you go to a restaurant, will you be aware of using these polite expressions?

All students said that they were aware of using the polite language that they had learned in this session and would apply this to a real restaurant context. Some new and old students also mentioned explicitly that they would not use the phrase “I want...” to make orders. However, some old students mentioned that they had already used this polite language in their daily lives; therefore, the learning effectiveness, with regard of the use of polite language, might not be obvious for them.

Table 5.5 Summary of notes for interview question 4

| |
|---|
| <p>Old students:</p> <p>(interviewee 1): Yes, I will use “Can I have” instead of “I want”, but I will probably forget the exact wording.</p> <p>(interviewee 2): Sort of, but I already used these polite expressions in my daily life.</p> <p>(interviewee 5): Yes. Especially on how to complain politely, I can use the term “I’m sorry, but I think”.</p> <p>(interviewee 6): No, because I already learned these expressions from YouTube videos. The context-related words provided are much more helpful.</p> |
| <p>New students:</p> <p>(interviewee 3): Yes. I will not say “I want” when making an order again.</p> <p>(interviewee 4): Yes. I will use “excuse me” instead of “hello”.</p> <p>(interviewee 7): Yes.</p> <p>(interviewee 8): Yes. I will be more confident in real situations, and use “Can I” instead of “I want”.</p> |

Q5 Would you use it (the implemented system) again?

All students reported that they would re-use the system. The main reason for them to re-use the system is to look up the sentences that they might forget.

Table 5.6 Summary of notes for interview question 5

| |
|---|
| <p>Old students: (interviewee 1): Yes. When I forget, I can use it to look up the sentence that I want to say quickly, because the conversations are short. (interviewee 2): Yes, to look up the sentences that I forget. (interviewee 5): Yes, because I think I might forget the exact sentence after a day or so. (interviewee 6): Yes, for short review when I need it.</p> |
| <p>New students: (interviewee 3): Yes. I will probably refresh my memory when I need to use them in similar situations. (interviewee 4): Yes. To check if I still remember. (interviewee 7): Yes, for checking words that I do not know. (interviewee 8): Yes, but I would prefer a web or app interface. The pure voice-interaction interface is more difficult for me to learn how to use.</p> |

Q6 Would you want to see this being implemented for other situations as well?

All students would like to see the CALL system implemented for other daily contexts, because they thought that the system could be a useful tool for them to familiarise themselves with different social contexts (i.e. know social conventions). Some students also said that the system is a new source for them to get to know correct pragmatic sentences (i.e. situational language). One new student even regarded the system as a context-embedded dictionary.

Table 5.7 Summary of notes for interview question 6

| |
|---|
| <p>Old students: (interviewee 1): Yes. It would be useful if it could be applied to more scenarios, such as banking, travelling and medical conditions. (interviewee 2): Yes, it is useful in the contexts that I am unfamiliar with e.g. describing symptoms. (interviewee 5): Yes. I would like to use it for daily events. (interviewee 6): Yes. I would like it to have more scenarios and with more conversational variations, so that the interaction can be more authentic.</p> |
| <p>New students: (interviewee 3): Yes. I would like to see that. I can learn some social conventions by using it. (interviewee 4): Yes. It can help me to learn more situational language.</p> |

(interviewee 7): Yes, because it is making me familiar with the interaction process in different social contexts.

(interviewee 8): Yes, as a guide for reviewing scenario-based words and sentences, and it saves me a lot of time rather than looking it up in the dictionary.

In summary, all participants thought that they had learned something while interacting with the implemented CALL system. Many of them thought that they had learned authentic expressions. While new students reported that they had learned how to use polite expressions in a restaurant context, some old students had already learned these expressions from other sources and used them in different contexts. The majority of the students thought that effective learning had taken place when they were using the system in task mode. The participants would like to re-use the system in order to reinforce their memory. The participants would also be willing to use the system if more scenarios were implemented.

6. Conclusion

Summary of works

In this dissertation project, we first reviewed the two basic linguistic concepts: pragmatics and speech acts. Then, we move towards the concept of the conversation (i.e. the Cooperative Principle, Grice, 1975) and introduced the concept of politeness (i.e. the politeness theory, Brown & Levinson, 1987). From the literature, we found that, although politeness is universal across culture, different cultures have different forms of realisations. Then, we studied the concept of pragmatics failure (Thomas, 1983), and used this concept to explore the common types of mistakes that Chinese college students made. We found that Chinese college students not only lack the knowledge of linguistic forms to perform speech acts (i.e. pragmalinguistic failure), but also lack of the social and cultural conventions (i.e. sociopragmatic failure). We then reviewed the concept of CALL, the theories of second language learning and teaching, and the communicative CALL systems that relevant to our proposed dialogue CALL system. We decided to use the Task-based language teaching, the Zone of proximal development (Vygotsky, 1987), scaffolding (Wood & Middleton, 1975), and the information processing theory (Atkinson & Shiffrin, 1968; Craik & Lockhart, 1972; Miller, 1956), as the theoretical basis to design our CALL system. Also, we decided to use a similar teaching strategy which proposed by Chiu et al. (2007) (who developed a communicative system for teaching pragmatics), to instruct learners to learn pragmatics and the use of polite expressions in restaurant contexts.

Since we are using the learner-centred approach to design our CALL system, we studied the questions about how Chinese college students learn and practice oral communications (i.e. Theme 1 in Chapter 3), the questions about what the customer-waiter interaction looks like in UK restaurant contexts (i.e. Theme 2 in Chapter 3), and the questions about collecting the authentic learning and teaching materials for restaurant contexts (i.e. Theme 3 in Chapter 3). We used a series of interviews (i.e. interviewing students, waiters, native speakers and TESOL students) to answer the questions in theme 1 and 2 and use the field experiments and the co-design session to collect authentic learning and teaching materials to answer the questions in theme 3. From the interviews, we learned that both new students (i.e. students who just came to the UK) and old students (i.e. students who came to the UK for about one year) make pragmatic mistakes, especially the sociopragmatic mistakes (e.g. the use of polite languages). Due to English teacher's ignorance of the pragmatic teaching, Chinese college students are far from being "mannered", "reciprocal", and "conversational" in restaurant contexts. From the field experiments, we collected the authentic utterances of the waiters and the students. We also found that students exhibited lots of specific

politeness issues in restaurants contexts (e.g. “I want...” to make an order, “hello” to call the waiter, no small talk, forget to use polite languages in real-time). From the co-design session, we developed a “paper prototype” and identified a relatively complete process of the ideal customer-waiter interaction in restaurant contexts. By combining the ideal customer-waiter process and the authentic utterances of waiters and students, we build the corpus of our communicative CALL system. From the co-design session, we also identified some scenarios that Chinese students were unfamiliar with; therefore, we added the information of social conventions to the corpus to address this issue.

Based on the knowledge of the literature and authentic data collected from the user research, we developed the communicative CALL system to help Chinese college students to learn and use polite and authentic expressions in restaurant contexts. The developed system used the speech recognition, the speech synthesis, the corpus (which contains authentic utterances of the customer-waiter interaction), and the finite state machine to model realistic conversations. The developed system contains two learning modes: the “full sentence” mode, which displays a set of optional (polite or impolite) utterances for learners to speak aloud, and the “task” mode, which displays a sequence of tasks for learners to complete. The system also chooses tasks randomly to simulate the variations in real conversations. At the end of the conversation, the system will give explicit feedback according to learners’ performance. In addition, the system also has a “hint” function to act as the “scaffolding” component to facilitate effective learning.

We evaluated the CALL system regarding its usability and its perceived learning effectiveness for teaching the use of polite languages and the use of authentic expressions in restaurant contexts. We invited 8 Chinese students (4 old students and 4 new students) to test our system, and after finish using it, participants were asked to fill the System Usability Scale (SUS) questionnaires and conduct closed structured interviews. The results from the questionnaire shows that our CALL system is generally usable ($71.875 > 68$) although it is a little bit hard to learn. The results from the interviews shows that all participants felt that they had learned something after using the CALL system. New students reported that they had learned how to use polite expressions in restaurant contexts, while old students reported that they had learned some other authentic expressions for customer-waiter interactions. All participants would like to re-use the system repetitively to reinforce their memory, and they were also willing to use the system if more scenarios were being implemented.

Secondly, our communicative CALL prototype is only a simple realisation of communications. The conversation model we implemented is only a rule-based, hard coded finite state machine; therefore, it cannot handle infinite amount of speech inputs. This is disadvantage for the “task mode” of the CALL system, because the initial intention of the “task mode” is to let learners to synthesis what they know and use these knowledges to communicate. Ideally, the system should not restrict on the forms of input utterances. For future work, we can explore more advanced algorithms and on discourse modelling. For example, by using frame-based models (i.e. extracting intentions from speech acts based on the keywords), or by using the advanced deep learning neural networks, e.g. recurrent neural networks (Yao et. al, 2015). Moreover, the “politeness” feedback function is simplistic. Since we can capture what the learner said in real-time, and we can also identify whether it is a polite expression or not, we could record the pragmatic mistakes that the learner made during the practice and show him explicitly on what pragmatic mistakes he has committed at the end of the practice.

Thirdly, in the evaluation, although all participants chose the polite forms correctly at the end of the practice, and they reported that they have learned something in the interview (new students – the use of polite expressions in restaurant contexts, old students – other authentic speech acts), we could have transcribed and annotated participants’ interactions with the system, and see what they have actually learned and when was the learning taken place. We also could have set up a pre-test and a post-test (e.g. role plays) to see the participants’ actual learning gain. However, these are beyond the scope of this dissertation as the project mainly focused on the user research and the design of the CALL system.

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Appendix

Consent form for the interview

Consent form for participants - interview

Project title: An easier way to learn a language? User centred design of computer assisted language learning systems for pragmatics

Experimenter(s): Liquan Chai, Dr Maria Wolters, Affiliation: University of Edinburgh

Project description

The aim of this research project is to design a language learning tool for individual English-as-foreign-language learners who come to an English-speaking country to help them to enhance their oral communicative competence.

This interview intend to get deep understanding of:

1. Understand the oral English skills of Chinese students who go abroad.
2. Understand how students learn communicative competence, pragmatics and politeness.
3. Understand how students apply politeness expressions in the restaurant context.

Before you decide if you wish to take part, it is important for you to understand how this research is being done, risks and benefits and how your data is used. Please take time to read this consent form carefully and ask the experimenter(s) questions if you have anything that you are unclear of.

Risks and benefits

This research study has been self-certified using the Ethics standards of the School of Informatics, University of Edinburgh. There is no known risk involved in this study.

Data and protection

This study does not collect your personal information except the email address. Your email address will only be used for researchers who would like to invite you to participate in follow-up studies of this project. Your email address will be protected during the project and destroyed at the end of the project.

Your responses during the interview will be audio taped for analysis. The responses will be collected anonymously and will only be analysed for academic purposes. They will be stored on University computers and on password protected laptops with encrypted drives. If you give us information during the interview that could be used to identify you, we will anonymise it in the transcripts. While quotes from your comments may be used for publication, it will

not possible to identify your identity from any publications. You may ask the researcher to send you a copy of the transcript.

Quotation agreement

The interview will be audio taped and a transcript might be produced for analysis. It will be analysed by Liquan Chai and his academic colleagues who collaborate as part of this project only. The transcript will be kept anonymised during and after the project, and the actual recording will be kept during the project and destroyed once the project finishes. Any summary or direct quotations from the interview will be anonymised so that you cannot be identified. Any variation of the conditions above will only occur with your further explicit approval.

Time involvement

Your participation in this study will take approximately 40 minutes.

Subject rights

If you have read this form and decided to participate in this interview, please understand your participation is voluntary and you have the right to withdraw your consent and discontinue participation at any time without penalty. You have the right to refuse to answer any questions. Your individual privacy will be protected in all publications resulting from the study. You have right to ask for your data to be removed from the study.

By signing the form, you agree that:

1. I am voluntarily taking part in this project. I understand that I don't have to take part, and I can stop the interview at any time.
2. The interview will be audio taped and transcribed for analysis, and I understand that the transcribed responses will be used anonymously for academic purposes, and the audio responses will be protected during the project and destroyed at the end of the project.
3. Your quotations or summary of the transcriptions might be used in academic publication anonymously.
4. I agree to be contacted in the future by researchers who would like to invite me to participate in follow-up studies of this project by email.
5. I have read the understand the consent form, and I am free to contact the researcher with any questions I may have in the future.

Name: _____ Email: _____

Signature: _____ Date: _____

Contact information for _____

If you have any further questions about this study or the project, you can email: Liquan Chai s1226443@sms.ed.ac.uk and/or Dr Maria Wolters maria.wolters@ed.ac.uk for further information.

Interview protocol for students

Project title: An easier way to learn a language? User centred design of computer assisted language learning systems for pragmatics

Interview protocol for Chinese student (> 1 year)/ Chinese student (new)

Interviewee number:

Post comments of the interview (e.g. reflection on questions, themes):

Introductory section

Primary goal: brief introduction of the research project, and the purpose of the interview, how their data is used, and the length of the interview

A: Background of the project

Pragmatic competence, the ability to deliver and interpret meanings in social contexts, is an essential element for advanced English communications. Pragmatics is beyond the scope of vocabulary and grammatical knowledge. For example, if a EFL student ask, “Could you open the light”, to a native English speaker (which the student means “Could you turn on the light”), the native speaker may fail to interpret it correctly, even if the sentence is grammatically correct. As for another example, if a native speaker asks, “would you want a snack?”, to a Chinese EFL speaker, the Chinese student might refuse to take the snack to express their politeness. However, this act might interpret as rude to the native English speaker.

Research has documented many empirical studies that focused on enhancing pragmatic competence. However, pragmatics competence is often being ignored by teachers and students in China. Although in recent years students’ perceptions of pragmatic competence are changing, teachers, on the other hand, feel it is hard to provide effective instructions to teach pragmatics in the classroom. As a result, many Chinese college students fail to communicate naturally in the English environment (i.e. pragmatic failures).

The aim of the project is to explore an alternative approach to teach pragmatics. We will build a computer assistant language learning (CALL) system (i.e. dialogue system) for students to enhance their oral pragmatic competence beyond classroom. The system will simulate conversation and feedback in the form of speech and text (e.g. metapragmatic awareness and conventional uses).

B: Purpose of the interview

You have been selected to speak with us today because you have been identified as someone who are a Chinese student who have studied in UK for at least one year/Chinese student who have just arrived in UK/Chinese TESOL student who previously have EFL teaching experience/native speaker of English/native speaker of English and working (or have worked) as a waiter. Our research project focuses on improving the oral communicative competence of EFL students. Our study does not aim to evaluate your English proficiency. Rather, we are trying to learn more about EFL teaching and learning of oral communication and applying polite languages appropriately in the restaurant context.

C: Data collection

What you say to us is important to us, so we'd like to take notes. To make sure our notes correctly represent what you say, we would also like to take a sound recording. Of course, the notes and the tape will be recorded anonymously and kept confidentially. The recording will be deleted once the text-transcription produced. The text transcription will only be shared with relevant professionals.

D: Interview length

We have planned this interview to last no longer than one hour. If time is about to run short, it may be necessary to interrupt to so that we can cover all necessary topics.

E: Any other questions about the interview?

F: Consent form signup

Demographics

Primary goal: Invite interviewee to briefly tell me about him/herself, especially about his/her English learning background.

How old are you?

How long have you been in UK?

Where did you study your bachelor/other-master degrees?

What is your current and undergraduate degree titles?

Have you lived in an English-speaking country for more than 180 days?

How long have you been learning English?

What is your IELTS score? (speaking?)

Oral communicative skills of Chinese students

Primary goal:

1. Discover situations of communication failure (especially for pragmatic failures) encountered by Chinese students who go abroad, what they felt difficult to convey
发现中国学生在出国时遇到的交流困难（交流困难-传达意思很困难）（特别是语用困难）

Q1 At the time you first come to UK, how did you felt when you interact with the natives?

Q1 在你刚来到英国时，你在与当地人互动时的感受如何？

- Can you give me an example? [communicative incompetence]
- 能给我举个例子吗？[沟通能力不足或语用能力不足]
- What difficulties did you encountered? [communicative incompetence]
- 交流时，你遇到了哪些困难？[沟通能力不足或语用能力不足]
- How did you solve it?
- 你是怎么解决的？

Q2 Is there any difference compare with how you practice speaking in China? [communicative competence in China]

Q2 在英语环境下的交流，和你在中国练习口语时相比，有什么不同吗？[口语交流能力不足]

- Do you feel anxious when talking to a native person? In what situation? [conversational anxiety]
- 在和和母语者交谈时，你会感到紧张吗？在什么情况下会感到紧张？[会话焦虑]
- Have you ever encountered situations where you know the syntax and vocabulary, but still feel hard to understand the native's intention? [pragmatic incompetence]
- 你有没有遇到过，在和母语者交流时，你明明知道他所说的词汇和句法，却仍然很难理解他的意思的情况？[语用能力不足、语用失误的例子]
- Can you give me an example?
- 能举个例子吗？
 - How did you feel? How did you solve in the end?

- 你有什么感受？最后你是怎么解决的？
- Have you ever encountered situations where you know the syntax and vocabulary, but still misunderstand the native's intention? [pragmatic incompetence]
- 你有没有遇到过，在和母语者交流时，你明明用的词汇和句法是正确的，母语者却仍然很难理解你的意思的情况？[语用能力不足、语用失误的例子]
- Can you give me an example?
- 能举个例子吗？
 - How did you feel? How did you solve in the end?
 - 你有什么感受？最后你是怎么解决的？

Communicative skills acquisition

Primary goal:

1. Discover how students learn speaking skills, and how they feel about the effectiveness of teaching and individual learning methods
找出出国之前中国学生是怎么学习口语的，以及学习的效果
2. Identify the difficulties of learning speaking skills
在出国之前，中国学生在学习口语的过程中，遇到了什么困难
3. Discover motivations of enhancing speaking skills
出国之前，中国学生学习口语的动机是什么

Q1 Before you go abroad, how did you learn to speak? [warm up question]

Q1 在你出国之前，你是怎么学习口语的？[热身话题]

- Why do you want to enhance your speaking skills? (e.g. exam, communications?) [internal motivation before going abroad]
- 你为什么想提高口语能力？[出国前学习口语的动机]
- How did the teacher motivate you to practice speaking? [external stimuli to improve speaking before going abroad]
- 英语老师是怎么激励你练习口语的？[出国前学习口语的外部激励]
- How did the teacher teach speaking and how did you practice? (E.g. role play) [teaching methods]

- 老师是怎么教口语的？你是怎么练习的（比如，角色扮演）？ [中国教师口语教学方法]

- Anything you felt difficult or uncomfortable when you practicing speaking? [difficulties of learning speaking skills]

- 在练习口语时，你有感到不自在或者练习中遇到过那些困难？

- Do you think these methods effective? [perceived effectiveness of teaching methods]

- 你觉得老师的教学方法，你的练习方法有多有效？ [中国教师教学方法的有效性]

- If not effective, why? [difficulties of enhancing speaking skills]

- 如果没有效，问题出现在哪里？ [中国教师教学的困难]

- What form of feedback was given? Do you think it is effective? [feedback for improving speaking skills]

- 老师会给你什么反馈来（形式，内容）帮助你提高？你认为有效吗？ [中国教师教学反馈的形式和内容，以及反馈的有效性]

Q2 (Only for new students) After you go abroad, how did teacher in the language centre teaches you and how you practice speaking? [teaching and learning methods]

Q2 在你出国之后，语言班的老师们怎么教你口语的？你是怎么练习的？ [英国教师教学方法]

- How did the teacher motivate you to practice speaking? [external stimuli to improve speaking before going abroad]

- 这边的老师会怎么激励你练习口语？ [出国后学习口语的外部激励]

- How did the teacher teach speaking and how did you practice? (E.g. role play) [teaching and learning methods]

- 这边的老师怎么教口语的？ [英国教师口语教学方法]

- Anything you felt difficult or uncomfortable when you practicing speaking? [difficulties of learning speaking skills]

- 在练习口语时，你有感到不自在或者练习中遇到过那些困难？ [英国教师口语教学方法]

- Do you think these methods effective? [perceived effectiveness of teaching and learning methods]

- 你觉得老师的教学方法，你的练习方法有多有效？ [英国教师教学方法的有效性]

- If not effective, why? [difficulties of enhancing speaking skills]

- 如果没有效，问题出现在哪里？ [英国教师教学的困难]

- What form of feedback was given? Do you think it is effective? [feedback for improving speaking skills]

- 这边的老师会给你什么反馈来（形式，内容）帮助你提高？你认为有效吗？ [英国教师教学反馈的形式和内容，以及反馈的有效性]

Q3 (Only for old students) How did you practice your communication skills in UK? [learning methods]

Q3 （只针对老学生）在英国的这段学习时间里，你是怎么练习口语的？ [在英国的生活中的口语学习方法]

- How do you practice speaking skills? Do you practice speaking deliberately? Why?

- 你会刻意的练习口语吗？为什么（不）？ [在英国的生活中是否进行口语练习]

- As an individual learner, what difficulties prevent you enhancing speaking skills? [difficulties of learning speaking skills as an individual learner]

- 在你自己练习口语时，你遇到了哪些困难？ [在英国的生活中进行口语练习的困难]

- What motivates/stimulates you to enhance your speaking skills?

- 是什么激励你去提高口语能力的呢？ [在英国的生活中提高口语的动机]

Politeness expressions in the English environment

Primary goal:

1. Discover how politeness expressions were being taught or learned, and how students applied these expressions in UK

了解中国学生是怎么学习到礼貌用语的，以及他们在英国如何运用礼貌用语的

Q1 In your opinion, how important to be polite? [awareness of politeness]

Q1 在你看来，礼貌待人有多重要？ [中国学生的礼貌意识]

Q2 Have you ever express politeness to a stranger? Any examples? [warm up question]

Q2 你有没有向陌生人表达过礼貌？可以举个例子吗？ [热身话题]

- How do you express politeness? [application of politeness expressions]
- 你是怎么表达礼貌的？[礼貌表达的运用]
- What expressions you used? Why? (e.g. direct translation of Chinese, conventional expression been taught)
- 你用了什么英语表达？[礼貌表达的运用]
- Where did you learn these expressions? [acquiring pragmatic competence]
- 你从哪里学习到这些表达的？[提升语用能力的方法]

Communication in restaurant context

Primary goal:

1. Identify speech acts that commonly used in the restaurant context and how student express politeness in the restaurant context

找出用餐情境下的常用的言语行为

Identify scenarios where waiter's speech acts confused customers/students

了解中国学生在用餐情景下的交流困难（特别是语用困难）

2. Discover how politeness expressions were being taught or learned, and how students applied these expressions in UK

了解中国学生在英国餐厅的情境下是怎么运用礼貌用语的

Q1 Have you go to any restaurant here? [warm up question]

Q1 你去过这里的餐厅吗？[热身话题]

- How did you interact with the waiters? What activities involved? [identify common speech acts in restaurant context]

- 你是怎么和服务员交流的？涉及哪些活动？[餐厅情景下的常见言语行为]

Q2 How important to treat waiter politely? Why? [awareness of politeness in restaurant]

Q2 你觉得礼貌的对待服务员有多重要？为什么？[在餐厅环境下中国学生的礼貌意识]

- How did you express politeness to waiters? [application of politeness expressions in restaurant] (to be verified by waiters)

- 你是怎么向服务业表达礼貌的？用了什么礼貌用语？[礼貌用语在餐馆中的运用]

- Where did you learn these expressions? [acquiring politeness]
- 你是怎么学会使用这些礼貌用语的？[礼貌用语的学习]

Q3 How did you interact with the waiters in back in China? [cultural difference that affect behaviour]

Q3 在国内，你是怎么和服务员交流的？[文化差异]

- Are there any differences between you behave in China and UK restaurant?
- 你在中国和在英国用餐时，行为上会有不同吗？[文化差异]

Q4 In your past dining experiences, are there any circumstances that you felt awkward when you interact with the waiter? [pragmatic failures in restaurant context]

Q4 在你过去的用餐体验中，你有没有与服务员交流时感到过尴尬的情形？[在用餐情景下的语用失误]

- What expression he/she used? When?
- 在什么情况下，他说了什么？
- What is your interpretation of the speech?
- 你是怎么理解的？
- What was your first response?
- 你的第一反应是什么，当时是怎么回答他的？
- How did you solve the problem? What was the waiter's true intention?
- 服务员的真是意图是是什么？你是怎么理解到的？

Q5 If you dining in restaurant and the waiter is too busy to take your order, what do you say to let the waiter to pay attention on you? [pragmatic failures in complex situations]

Q5 如果你在餐厅用餐，服务员太忙，没有办法为你点餐，你会怎么说（用英语）让服务员注意到你呢？[在用餐情景下，非常规情况下的语用失误]

(If student's answered in English)

（如果学生做出了回答）

- Why (you use that expression)?
- 为什么？

- Where did you learn this expression? [acquisition of politeness expressions]

- 你从哪里学习到这个表达的？

(If student felt difficult to say anything in English):

(如果学生觉得回答很难)

- Where you find difficult?

- 你觉得哪方面出现了困难？

- Why? Is this a language or cultural problem (e.g. do not know how to act in an unfamiliar environment/lots of other natives are watching), or both? [pragmatic difficulties]

- 为什么？你觉得这是一个语言还是文化上的问题，或者两者都有？[语用失误的原因]

Q6 If you find a fly in your dish, what will you do? [pragmatic difficulties in complex situations]

Q6 如果你发现上的菜里面有苍蝇，你会怎么做？[在用餐情景下，非常规情况下的语用失误]

- If there same thing happened in China, what will you do? [pragmatic difficulties or cultural differences]

- 如果相同是事情在中国的餐厅发生，你会怎么做？[语用失误是文化差异的问题，还是语言的问题]

Interview protocol for TESOL students

Project title: An easier way to learn a language? User centred design of computer assisted language learning systems for pragmatics

Interview protocol for TESOL student

Interviewee number:

Post comments of the interview (e.g. reflection on questions, themes):

Introductory section

Primary goal: brief introduction of the research project, and the purpose of the interview, how their data is used, and the length of the interview

A: Background of the project

Pragmatic competence, the ability to deliver and interpret meanings in social contexts, is an essential element for advanced English communications. Pragmatics is beyond the scope of vocabulary and grammatical knowledge. For example, if a EFL student ask, “Could you open the light”, to a native English speaker (which the student means “Could you turn on the light”), the native speaker may fail to interpret it correctly, even if the sentence is grammatically correct. As for another example, if a native speaker asks, “would you want a snack?”, to a Chinese EFL speaker, the Chinese student might refuse to take the snack to express their politeness. However, this act might interpret as rude to the native English speaker.

Research has documented many empirical studies that focused on enhancing pragmatic competence. However, pragmatics competence is often being ignored by teachers and students in China. Although in recent years students’ perceptions of pragmatic competence are changing, teachers, on the other hand, feel it is hard to provide effective instructions to teach pragmatics in the classroom. As a result, many Chinese college students fail to communicate naturally in the English environment (i.e. pragmatic failures).

The aim of the project is to explore an alternative approach to teach pragmatics. We will build a computer assistant language learning (CALL) system (i.e. dialogue system) for students to enhance their oral pragmatic competence beyond classroom. The system will simulate conversation and feedback in the form of speech and text (e.g. metapragmatic awareness and conventional uses).

B: Purpose of the interview

You have been selected to speak with us today because you have been identified as someone who are a Chinese student who have studied in UK for at least one year/Chinese student who have just arrived in UK/Chinese TESOL student who previously have EFL teaching experience/native speaker of English/native speaker of English and working (or have worked) as a waiter. Our research project focuses on improving the oral communicative competence of EFL students. Our study does not aim to evaluate your English proficiency. Rather, we are trying to learn more about EFL teaching and learning of oral communication and applying polite languages appropriately in the restaurant context.

C: Data collection

What you say to us is important to us, so we'd like to take notes. To make sure our notes correctly represent what you say, we would also like to take a sound recording. Of course, the notes and the tape will be recorded anonymously and kept confidentially. The recording will be deleted once the transcription produced. The anonymous transcription will only be shared with relevant academics of this project.

D: Interview length

We have planned this interview to last no longer than one hour. If time is about to run short, it may be necessary to interrupt to so that we can cover all necessary topics.

E: Any other questions about the interview?

F: Consent form signup

Demographics

Primary goal: Invite interviewee to briefly tell me about him/herself, especially about his/her English teaching and learning background.

How old are you?

How long have you been in UK?

Where did you study your bachelor/other-master degrees?

What is your undergraduate degree title?

Have you lived in an English-speaking country for more than 180 days?

How long have you been learning English?

How long have you been teaching English?

Which specific group you focus on?

What is your IELTS score? (speaking?)

Oral EFL teaching in China

Primary goal:

1. Understand the current situation of oral English teaching in China, difficulties for teaching oral English and which aspects should be improved.

Q1 At the time you first come to UK, how did you felt when you interact with the natives?

Q1 在你刚来到英国时，你在与当地人互动时的感受如何？

- Can you give me an example? [communicative incompetence]
- 能给我举个例子吗？
- What difficulties did you encountered? [communicative incompetence]
- 交流时，你遇到了哪些困难？
- How did you solve it? [non-verbal communications]
- 你是怎么解决的？

Q2: Is there any difference compare with how you practice speaking in China? [communicative competence in China]

Q2 在英语环境下的交流，和你在中国练习口语时相比，有什么不同吗？

- Do you feel anxious when talking to a native person? [conversational anxiety]
- 在和和母语者交谈时，你会感到紧张吗？在什么情况下会感到紧张？
- Have you ever encountered situations where you know the syntax and vocabulary, but still felt hard to understand the native's intention? [pragmatic incompetence]
- 你有没有遇到过，在和母语者交流时，你明明知道他所说的词汇和句法，却仍然很难理解他的意思的情况？
- Can you give me an example?
- 能举个例子吗？
 - How did you feel? How did you solve in the end?
 - 你有什么感受？最后你是怎么解决的？
- Have you ever encountered situations where you know the syntax and vocabulary, but still misunderstand the native's intention? [pragmatic incompetence]

- 你有没有遇到过，在和母语者交流时，你明明用的词汇和句法是正确的，母语者却仍然很难理解你的意思的情况？

- Can you give me an example?

- 能举个例子吗？

- How did you feel? How did you solve in the end?

- 你有什么感受？最后你是怎么解决的？

Q3 How did teachers teach speaking skills in China (high school/college/IELTS)? [teaching method of speaking]

Q3 中国老师是怎么帮助学生提高口语（教口语）的（高中/大学/雅思）？

- What were their goals of teaching?

- 中国教师的口语教学目标有哪些？

- What textbooks/materials they use?

- 他们用什么教科书/学习材料？

- How did they teach speaking in classroom? [teaching effectiveness]

- 在课上，他们是如何帮助学生提高（教口语）的？用了什么教学方法？

- Why do you think he / she did in that way [difficulties to teach speaking in classroom]

- 你觉得为什么他们会用这个（这些）方法？

- How speaking is assessed?

- 口语能力是如何评估的？

- Why do you think he / she did in that way [difficulties to teach speaking in classroom]

- 为什么他会用这个方法去评估？

- What form of feedback were given to students? [feedback in speaking]

- 他们会给学生形式的反馈来帮助学生提高口语能力？

- feedback on what? (vocabulary, grammar, pronunciation, conventional phrases, functions of different speech act)

- 反馈什么内容（词汇，句法，发音，场景惯用语，会话中传达的意图）？

- Is the feedback given during the conversation (explicit instructional feedback – conventional language use, implicit responsive feedback – metapragmatic awareness, or a mixture of two) or at the end of the conversation? In what language? [code switching]

- 反馈是在对话期间给出（明确指出？反应模拟？二者混合），还是在对话结束后再给出？用什么语言指出来？

- Why do you think he / she did in that way? [difficulties to teach speaking in classroom]

- 你认为他给出这样反馈的原因是什么？

Q4 (if he/she had teaching experience before they studied TESOL) As a teacher, how did you used to teach speaking?

Q4 (如果他在上 TESOL 项目之前有过教学经历) 作为一个教师，你是怎么帮助学生提高（教口语）的？

- What were your teaching goals?

- 你的口语教学目标是什么？

- What materials/textbooks used? [teaching materials]

- 你曾经用的什么教科书/教学材料？

- What method(s) you employed in the classroom? [teaching methods]

- 你曾经在课堂是怎么教口语的？用了什么教学方法？

- How students feel? [teaching effectiveness]

- 学生（对你的教学方法）是什么反应？

- Any difficulties you have encountered? [difficulties to teach speaking in classroom]

- 你在教学中遇到了什么问题？

- How speaking is assessed?

- 口语能力是如何评估的？

- What form of feedback were given to students?

- 你给了学生什么形式的反馈（来帮助学生提高口语能力）？

- feedback on what? (vocabulary, grammar, pronunciation, conventional phrases, functions of different speech act) [awareness of teaching pragmatics]

- 反馈什么内容（词汇，句法，发音，场景惯用语，会话中传达的意图）？

- Is the feedback given during the conversation (explicit instructional feedback – conventional language use, implicit responsive feedback – metapragmatic awareness, or a mixture of two) or at the end of the conversation? In what language? Why provide feedback that way? [code switching] [difficulties to teach speaking in classroom]

- 反馈是在对话期间给出（明确指出？反应模拟？二者混合），还是在对话结束后再给出？用什么语言指出来？为什么？

Q5 (if he/she planned to be a teacher after the TESOL program) How will you teach speaking [approaches to teach speaking], and why? [which aspects should be improved]

- What will be your teaching goals?

- 你的口语教学目标是什么？

- What materials/textbooks will you use? [teaching materials]

- 你会用什么教科书/教学材料？

- How will you instruct students? What teaching methods will you use? Why? [teaching methods]

- 你会怎么教口语？你会使用什么教学方法？为什么？

- Any concerns? [difficulties to teach speaking]

- 实施时可能遇到什么问题？

- How speaking will be assessed?

- 口语能力是如何评估的？

- What form of feedback will be given to students? [feedback in speaking]

- 你会给学生什么形式的反馈（来帮助提高学生提高口语能力）？

- feedback on what? (vocabulary, grammar, pronunciation, conventional phrases, functions of different speech act) [awareness of teaching pragmatics]

- 反馈什么内容（词汇，句法，发音，场景惯用语，会话中传达的意图）？

- Will the feedback be given during the conversation (explicit instructional feedback – conventional language use, implicit responsive feedback – metapragmatic awareness, or a mixture of two) or at the end of the conversation? In what language? Why will you do that way? [difficulties to teach speaking in classroom]

- 反馈会在对话期间给出（明确指出？反应模拟？二者混合），还是会在对话结束后再给出？用什么语言指出来？为什么你会这么做？

Teacher and teaching pragmatics (and politeness)

Primary goal:

1. Understand teacher's perceptions of pragmatics, his or her awareness of teaching pragmatics of daily activities
2. teacher's approaches to teach pragmatics and politeness, and difficulties to teach pragmatics and politeness

Q1 What contributes to a natural conversation? [perceptions of pragmatics]

Q1 你觉得哪些因素构成了一个流利的对话？

Speaking skills – the abilities to communicate effectively

Pragmatics competence - accurate and appropriate use of language in an act of communication

- As a teacher, which aspect(s) of speaking skills should the teacher emphasis? Why? (e.g. pronunciation, grammar, vocabulary, fluency, comprehension, communication techniques)
- 对于一个教师来说，在教学中需要强调哪一（几）方面的能力，从而让学生能够无障碍的和母语者沟通？为什么？（例如：发音，词汇，句法，流利，理解能力，沟通技巧）

Q2 If you are asked to design a short lesson about introducing politeness expressions in the restaurant contexts, how will you prepare the lesson? [awareness of teaching politeness]

Q2 如果让你去设计一节关于用餐的礼貌用语（口语）的课程，你会怎么准备？

- What will be your teaching goals? E.g. conventional use of polite expressions and speech acts and their intentions in the context
- 你的教学目标是什么？例如：习惯性礼貌用语及其在上下文中的意图
- What materials/textbooks will you use? What are the inputs and outputs [teaching materials]
- 你会用什么教科书/教学材料？语言的输入和输出分别是什么？
- How will you instruct students? What teaching methods will you use? Why? [teaching methods]
- 你会怎么指导学生？你会使用什么教学方法？为什么？
 - What you might find difficult to implement? (e.g. effectiveness of role play – embarrassment, simplistic conversation, uninformative feedback, how to solve conversational anxiety, intercultural difference during the conversation)
 - 你在课程实施的过程中可能会遇到什么困难？（例如：对话尴尬，过于简单的会话模拟，无意义的反馈，怎么解决会话焦虑，以及真实情境下跨文化的差异问题）
- How will the course assess students?

- 如何评估这节课学生的学习效果？
- What form of feedback were given to students? [feedback in speaking]
- 你会给学生什么形式的反馈？
 - feedback on what? (vocabulary, grammar, pronunciation, conventional phrases, functions of different speech act) [awareness of teaching pragmatics]
 - 反馈什么内容（词汇，句法，发音，场景惯用语，会话中传达的意图）？
 - Will the feedback be given during the conversation (explicit instructional feedback – conventional language use, implicit responsive feedback – metapragmatic awareness, or a mixture of two) or at the end of the conversation? In what language? Why will you do that way? or at the end of the conversation? Why will you do that way? [difficulties to teach speaking in classroom]
 - 反馈会在对话期间给出（明确指出？反应模拟？二者混合），还是会在对话结束后再给出？用什么语言指出来？为什么你会这么做？

Individual pragmatics learning (and politeness)

Primary goal:

1. Teacher's suggestions for individual pragmatics learning, especially on politeness

Q1 Do you think speaking can be learned outside the classroom? How effective it is? [individual learning difficulties]

Q1 你认为英语口语可以在课堂外习得吗？有多有效？

- Can you give me an example?
- 能举个例子吗？
- In the case of restaurant conversations, how EFL learners act so he/she can naturally communicate with the waiter?
- 在用餐的情境下，英语学习者们应该如何学习和练习，以便他/她能够自然地与服务人员沟通？
 - What learning difficulties they might encounter? [difficulties of learning pragmatics individually] (e.g. - If something uncommon happened, e.g. waiter delivered a dish that has a fly in it. How can the individual express the dissatisfaction in a polite way?)
 - 在学习和练习过程中，他们可能遇到什么样的难题？（例如：小概率事件，食物有苍蝇）

Interview protocol for waiters

Project title: An easier way to learn a language? User centred design of computer assisted language learning systems for pragmatics

Interview protocol for waiter

Interviewee number:

Post comments of the interview (e.g. reflection on questions, themes):

Introductory section

Primary goal: brief introduction of the research project, and the purpose of the interview, how their data is used, and the length of the interview

A: Background of the project

Pragmatic competence, the ability to deliver and interpret meanings in social contexts, is an essential element for advanced English communications. Pragmatics is beyond the scope of vocabulary and grammatical knowledge. For example, if a EFL student ask, “Could you open the light”, to a native English speaker (which the student means “Could you turn on the light”), the native speaker may fail to interpret it correctly, even if the sentence is grammatically correct. As for another example, if a native speaker asks, “would you want a snack?”, to a Chinese EFL speaker, the Chinese student might refuse to take the snack to express their politeness. However, this act might interpret as rude to the native English speaker.

Research has documented many empirical studies that focused on enhancing pragmatic competence. However, pragmatics competence is often being ignored by teachers and students in China. Although in recent years students’ perceptions of pragmatic competence are changing, teachers, on the other hand, feel it is hard to provide effective instructions to teach pragmatics in the classroom. As a result, many Chinese college students fail to communicate naturally in the English environment (i.e. pragmatic failures).

The aim of the project is to explore an alternative approach to teach pragmatics. We will build a computer assistant language learning (CALL) system (i.e. dialogue system) for students to enhance their oral pragmatic competence beyond classroom. The system will simulate conversation and feedback in the form of speech and text (e.g. metapragmatic awareness and conventional uses).

B: Purpose of the interview

You have been selected to speak with us today because you have been identified as someone who are a Chinese student who have studied in UK for at least one year/Chinese student who have just arrived in UK/Chinese TESOL student who previously have EFL teaching experience/native speaker of English/native speaker of English and working (or have worked) as a waiter. Our research project focuses on improving the oral communicative competence of EFL students. Our study does not aim to evaluate your English proficiency. Rather, we are trying to learn more about EFL teaching and learning of oral communication and applying polite languages appropriately in the restaurant context.

C: Data collection

What you say to us is important to us, so we'd like to take notes. To make sure our notes correctly represent what you say, we would also like to take a sound recording. Of course, the notes and the tape will be recorded anonymously and kept confidentially. The recording will be deleted once the transcription produced. The anonymous transcription will only be shared with relevant academics of this project.

D: Interview length

We have planned this interview to last no longer than one hour. If time is about to run short, it may be necessary to interrupt to so that we can cover all necessary topics.

E: Any other questions about the interview?

F: Consent form signup

Demographics

Primary goal: Invite interviewee to briefly tell me about him/herself, especially about his/her serving experience.

How old are you?

How long have you lived in UK?

Where did you study your bachelor/other-master degrees?

How long have you work as a waiter?

Customer's behaviour in the restaurant

Primary goal:

1. Identify how customer behave in the restaurant and what interactions involved

Q1 How do you interact with the customer? What activities involved? (Start from entering the restaurant and end at exiting the restaurant) [identify common speech acts in restaurant context]

- What do you say when customer is entering the restaurant?
- What expressions to use?
- How do you take the order? Why?
- How you act when customer need for help?
- What do you say when customer wants to pay the bill?

Politeness and restaurant service

Primary goal:

1. Understand the significance for customers to behave politely in the restaurant

Q1 How important do you think customers treat you politely? [significance of politeness]

- How do you feel when the customer treats you politely?
- Can you give me an example?
- What if the customer behaves impolitely? How you will treat them?
- Can you give me an example?

Q2 In your opinion, what the polite customer should looks like? [examples of polite speech acts]

- What speech act they use in the restaurant? When? Any examples?

Attitude towards Chinese customers

Primary goal:

1. Understand waiters' attitudes towards Chinese customers, and their behaviours in the restaurant

Q1 What do you think of Chinese customers? [intercultural differences]

- How do you feel about their behaviour in general?
- Are there any inappropriate behaviour/behaviours that you feel uncomfortable with? [inappropriate use of speech acts]
- Any specific examples?
- What is your response? (and the exact expression you use?) [authentic input and output]

Speech acts in the restaurant

Primary goal:

1. Identify impolite or overpolite speech acts that commonly made by Chinese customers [socio-pragmatics failure]
2. Identify the common expressions that are strange or never used by native speakers, and possible corrections [pragma-linguistic]

Q1 Excluding facial expressions and body languages, is there any speech (literal terms), which commonly spoken by Chinese, makes you feel impolite/uncomfortable? [politeness failure]

- Can you give me an example?
- What was your response of that speech act?
- If you were the customer, what will you say?
- Any other examples?

Q2 Excluding facial expressions and body languages, is there any speech (literal terms), which commonly spoken by Chinese, makes you feel overpolite? [politeness failure]

- Can you give me an example?

- What was your response?
- If you were the customer, what will you say?
- Any other examples?

Q3 Are there any other speech that you feel weird or annoyed that commonly spoken by Chinese people? [politeness failure]

Q4 In your past serving experience, is there any speech expression (e.g. use of phrases, use of words) that commonly used by Chinese customers that makes you feel strange? [pragmatic failure]

- Is there speech that never -used by native speakers but commonly used by Chinese customers in the restaurant?
- What are they?

Interview protocol for native speakers

Project title: An easier way to learn a language? User centred design of computer assisted language learning systems for pragmatics

Interview protocol for native speaker

Interviewee number:

Post comments of the interview (e.g. reflection on questions, themes):

Introductory section

Primary goal: brief introduction of the research project, and the purpose of the interview, how their data is used, and the length of the interview

A: Background of the project

Pragmatic competence, the ability to deliver and interpret meanings in social contexts, is an essential element for advanced English communications. Pragmatics is beyond the scope of vocabulary and grammatical knowledge. For example, if a EFL student ask, “Could you open the light”, to a native English speaker (which the student means “Could you turn on the light”), the native speaker may fail to interpret it correctly, even if the sentence is grammatically correct. As for another example, if a native speaker asks, “would you want a snack?”, to a Chinese EFL speaker, the Chinese student might refuse to take the snack to express their politeness. However, this act might interpret as rude to the native English speaker.

Research has documented many empirical studies that focused on enhancing pragmatic competence. However, pragmatics competence is often being ignored by teachers and students in China. Although in recent years students’ perceptions of pragmatic competence are changing, teachers, on the other hand, feel it is hard to provide effective instructions to teach pragmatics in the classroom. As a result, many Chinese college students fail to communicate naturally in the English environment (i.e. pragmatic failures).

The aim of the project is to explore an alternative approach to teach pragmatics. We will build a computer assistant language learning (CALL) system (i.e. dialogue system) for students to enhance their oral pragmatic competence beyond classroom. The system will simulate conversation and feedback in the form of speech and text (e.g. metapragmatic awareness and conventional uses).

B: Purpose of the interview

You have been selected to speak with us today because you have been identified as someone who are a Chinese student who have studied in UK for at least one year/Chinese student who have just arrived in UK/Chinese TESOL student who previously have EFL teaching experience/native speaker of English/native speaker of English and working (or have worked) as a waiter. Our research project focuses on improving the oral communicative competence of EFL students. Our study does not aim to evaluate your English proficiency. Rather, we are trying to learn more about EFL teaching and learning of oral communication and applying polite languages appropriately in the restaurant context.

C: Data collection

What you say to us is important to us, so we'd like to take notes. To make sure our notes correctly represent what you say, we would also like to take a sound recording. Of course, the notes and the tape will be recorded anonymously and kept confidentially. The recording will be deleted once the transcription produced. The anonymous transcription will only be shared with relevant academics of this project.

D: Interview length

We have planned this interview to last no longer than one hour. If time is about to run short, it may be necessary to interrupt to so that we can cover all necessary topics.

E: Any other questions about the interview?

F: Consent form signup

Demographics

Primary goal: Invite interviewee to briefly tell me about him/herself, especially about his/her dining experience.

How old are you?

How long have you lived in UK?

Where did you study your bachelor/other-master degrees?

How often do you eat in a sit-down restaurant (i.e. casual dining restaurant)? (e.g. weekly?)

Behaviours in the restaurant

Primary goals:

1. How native speakers behave, what speech act to use and cultural conventions involved in the restaurant context

Q1 How do you interact with the waiters? What activities involved? (Start from entering the restaurant and end at exiting the restaurant) [speech acts involved in restaurant context]

- What do you say when you are entering the restaurant?
- What expressions to use? Why? (e.g. convention in UK)
- How do you decide what to eat?
 - What if the menu is hard to understand?
- What about you are ready to order?
- How you will act when you want to pay the bill?
- Any situations where you need ask for help? What do you say?

Q2 As a Chinese, any suggestions about social/cultural conventions that I should pay attention in the restaurant? [intercultural factors]

- Why?
- What expressions that should use in restaurants, but often being ignored by Chinese people?
- Why do you think Chinese people ignore them? [cultural difference in service sector]

Politeness strategy and polite expressions in the restaurant

Primary goals:

1. Understand How native speakers express their politeness in the restaurant context, and differences of the use of speech acts compare with Chinese customers

Q1 In your opinion, how important to be polite in the restaurant? [significance of politeness]

- Why?
- What are your concerns if you behave impolitely?

Q2 If you go to the restaurant, how do you behave politely?

- What specific expressions you will use?
- Any other strategies? [application of politeness strategy]

**Q3 According to your observation, how did Chinese customers behave in the restaurant?
[intercultural difference]**

- Do you think Chinese customers are polite? Why?
- Can you give me an example?

Q4 Activity - Showing expressions gathered from students' interviews – how appropriate the politeness expressions were used?

- What expression is appropriate?
- What expression is not appropriate? Why?
- How do you correct it?

Uncommon scenarios in the restaurant

Primary goals:

1. If things go wrong (e.g. waiter made a mistake, i.e. if complex/extreme condition happens), how do native speaker express their dissatisfaction

Q1 If the waiter/restaurant did something wrong (e.g. too busy to take your order, find a fly in your dish), how will you express your dissatisfaction? [polite strategies for uncommon scenarios]

- What exact expressions you will use? Why? [corrective feedback]

Codebook for student's interview

| Name of codes | Description | Files (Interviewees) | References (related responses) |
|---|--|-------------------------|-----------------------------------|
| Communication difficulties | Linguistic and performance difficulties for the speaker to participate in conversations | 6 | 11 |
| Pragmatic failures | Speaker's inability to understand "what is meant by what is said" | 0 | 0 |
| Pragmalinguistic failures | Speaker does not know or misused the term to express his intention in the way that native speakers do not | 6 | 12 |
| Sociopragmatic failures | Speaker mis-interpreted the social condition of the context and used the term in the way that the learner thinks is appropriate but not in reality | 5 | 12 |
| Learning and application of politeness expressions | How the student learned polite languages, and how the student uses them in different context | 0 | 0 |
| Application of politeness expressions in restaurant context | How the student uses polite languages in different context | 0 | 0 |
| Attitude towards waiters | The student's intention on how to treat waiters in the restaurant context | 7 | 8 |
| Speech act used | The directives, expressives, and commissive used in the conversation | 6 | 12 |
| Difficulties to be polite | The difficulties that the student encountered from them being polite | 4 | 6 |

| Name of codes | Description | Files (Interviewees) | References (related responses) |
|--|---|-------------------------|-----------------------------------|
| Learning politeness expressions | How the student acquires politeness expressions | 1 | 1 |
| Attitude to behave polite | The student's awareness of being polite | 7 | 9 |
| Learning method (politeness expressions) | Methods that the student used to learn politeness expressions | 5 | 8 |
| Oral teaching and learning | How teachers teach speaking and how the student learn speaking | 0 | 0 |
| Effectiveness of teaching | How effective is the teaching method? Does it work? | 6 | 22 |
| Individual oral learning | How the student learns and practices speaking by himself or herself | 7 | 25 |
| Learning difficulties | What learning difficulties the student encountered when learning | 7 | 24 |
| Learning motivation | Why the student wants to learn and practice speaking | 5 | 10 |
| Oral teaching | How teachers teach speaking? What methodology they used? | 6 | 19 |

Codebook for TESOL student's interview

| Name of codes | Description | Files (Interviewees) | References (related responses) |
|---|--|-------------------------|-----------------------------------|
| Communication difficulties | Linguistic and performance difficulties for the speaker to participate in conversations | 3 | 4 |
| Pragmatic failures | Speaker's inability to understand "what is meant by what is said" | 0 | 0 |
| Pragmalinguistic failures | Speaker does not know or misused the term to express his intention in the way that native speakers do not | 3 | 6 |
| Sociopragmatic failures | Speaker mis-interpreted the social condition of the context and used the term in the way that the learner thinks is appropriate but not in reality | 2 | 4 |
| Current situation of oral teaching in China | How English teacher in China instruct students to speak | 0 | 0 |
| Materials used in class | What materials that teachers used to instruct students to speak | 1 | 1 |
| Student's attitude towards speaking | The student's feeling about learning and practicing speaking | 3 | 8 |
| Teacher's assessment of speaking skills | How student's oral ability is assessed | 3 | 4 |
| Teacher's attitude towards speaking | Teacher's feeling about teaching speaking | 3 | 16 |
| Teacher's feedback | What feedback is given to the student to enhance his or her oral competence | 3 | 4 |

| Name of codes | Description | Files (Interviewees) | References (related responses) |
|---|---|-------------------------|-----------------------------------|
| Teacher's teaching method in class | What methodology that teachers used to enhance student's oral competence | 3 | 12 |
| Effectiveness of teaching method in class | How effective is the teaching method? Does it work? | 3 | 6 |
| Teaching difficulties for teachers | Difficulties for teachers to implement these teaching methods | 3 | 12 |
| Individual learning method for communication | How students can enhance their communicative competence by themselves | 3 | 8 |
| Effectiveness of individuals learning | How effective if students learn speaking without any instructions | 3 | 4 |
| Learning difficulties for individuals | What kind of difficulties that students will encounter if they practice speaking without any instructions | 1 | 1 |
| Teacher's attitude towards individual's learning speaking | Teacher's opinions about learning and practicing speaking individually | 3 | 3 |
| Proposed teaching methods for pragmatics | The proposed teaching method for teaching pragmatics | 3 | 6 |
| Assessment of the proposed method | How student's pragmatic competence will be assessed | 2 | 2 |
| Potential feedback | What kind of feedback will be given | 3 | 3 |
| Potential material used | What kind of materials will be used, and in what format | 3 | 3 |

| Name of codes | Description | Files (Interviewees) | References (related responses) |
|--|--|-------------------------|-----------------------------------|
| Potential teaching difficulties for pragmatics | What are the implementation difficulties if the proposed teaching method is used | 2 | 5 |

Codebook for waiter's interview

| Name of codes | Description | Files (Interviewees) | References (related responses) |
|---|--|-------------------------|-----------------------------------|
| Attitudes towards Chinese customers | The waiter's opinion towards Chinese customers | 2 | 5 |
| Behaviours of Chinese customers and waiter's feelings | How Chinese customers behave in the restaurant context and how the waiter felt about them | 2 | 17 |
| Impolite behaviours | The impolite behaviours that Chinese customers exhibited in the restaurant context | 2 | 4 |
| Body language (impolite Chinese) | The non-verbal actions that the waiter interpreted as impolite | 1 | 1 |
| Speech act (impolite Chinese) | The speech acts (i.e. the utterances that have performative functions) that the waiter interpreted as impolite | 2 | 6 |
| Other strange or inappropriate actions | Other actions or speech acts that not necessary interpreted as impolite, but awkward | 0 | 0 |

| Name of codes | Description | Files (Interviewees) | References (related responses) |
|--|--|-------------------------|-----------------------------------|
| Intercultural factors on politeness | The polite or impolite behaviours that Chinese customers exhibited due to cultural factors | 2 | 3 |
| Other cultural differences | Other behaviours that Chinese customers exhibited due to cultural factors | 0 | 0 |
| Waiter and customer interaction | How the waiter interacts with customers | 0 | 0 |
| Behaviours of customers | The behaviours of the customer when he or she interacts with the waiter | 0 | 0 |
| Impolite behaviours (to waiter) | The impolite behaviours that customer exhibited in the restaurant context | 2 | 2 |
| Body language (impolite customer)) | The non-verbal actions that the waiter interpreted as impolite | 0 | 0 |
| Speech act (impolite customer) | The speech acts (i.e. the utterances that have performative functions) that the waiter interpreted as impolite | 0 | 0 |
| Negative polite behaviours (to waiter) | The behaviours that try to save waiter's "negative face" (i.e. the respect of waiter's desire to be independent) | 1 | 4 |
| Body language (neg polite) | The non-verbal actions that try to save waiter's "negative face" (i.e. the respect of waiter's desire to be independent) | 1 | 2 |

| Name of codes | Description | Files (Interviewees) | References (related responses) |
|--|---|-------------------------|-----------------------------------|
| Speech act (neg polite) | The speech acts that try to save waiter's "negative face" (i.e. the respect of waiter's desire to be independent) | 1 | 3 |
| Positive polite behaviours (to waiter) | The behaviours that try to save waiter's "positive face" (i.e. the customer's approval of the waiter's self-esteem) | 2 | 7 |
| Body language (pos polite) | The non-verbal actions that try to save waiter's "positive face" (i.e. the customer's approval of the waiter's self-esteem) | 1 | 1 |
| Speech act (pos polite) | The speech acts that try to save waiter's "positive face" (i.e. the customer's approval of the waiter's self-esteem) | 2 | 2 |
| Behaviours of waiters (to customer) | The behaviours of the waiter when he or she interacts with the customer | 2 | 7 |
| Body language (waiter) | The non-verbal actions that the waiter use when interact with customers | 0 | 0 |
| Speech act (waiter) | The speech acts that the waiter use when interact with customers | 2 | 14 |
| Customer's attitude towards waiters | Customers' opinion about waiter's job | 1 | 1 |
| Waiter's attitude towards customers | The waiter's opinion towards customers | 2 | 13 |
| Waiter's feelings | The waiter's feelings towards impolite customers | 2 | 7 |

| Name of codes | Description | Files (Interviewees) | References (related responses) |
|---------------------|-------------|-------------------------|-----------------------------------|
| (impolite customer) | | | |

Codebook for native speaker's interview

| Name of codes | Description | Files (Interviewees) | References (related responses) |
|--|--|-------------------------|-----------------------------------|
| Attitudes towards Chinese customers | The native speaker's opinion towards Chinese customers | 2 | 7 |
| Intercultural factors on politeness | The polite or impolite behaviours that Chinese customers exhibited due to cultural factors | 1 | 4 |
| Other cultural differences | Other behaviours that Chinese customers exhibited due to cultural factors | 2 | 3 |
| Difficulties encountered in the restaurant context | The difficulties that the native speaker's have in the restaurant context | 2 | 4 |
| Native customers and waiters interaction | How the customer interacts with waiters | 2 | 5 |
| Attitudes towards waiters | The native speaker's opinion towards waiters | 2 | 3 |
| Impolite behaviours (to waiter) | The impolite behaviours that customer exhibited in the restaurant context | 1 | 1 |

| Name of codes | Description | Files (Interviewees) | References (related responses) |
|--|---|-------------------------|-----------------------------------|
| Negative politeness behaviours (to waiter) | The behaviours that try to save waiter's "negative face" (i.e. the respect of waiter's desire to be independent) | 1 | 2 |
| Polite body language | The non-verbal actions that try to save waiter's "negative face" (i.e. the respect of waiter's desire to be independent) | 1 | 1 |
| Polite speech act | The speech acts that try to save waiter's "negative face" (i.e. the respect of waiter's desire to be independent) | 2 | 6 |
| Positive politeness behaviours (to waiter) | The behaviours that try to save waiter's "positive face" (i.e. the customer's approval of the waiter's self-esteem) | 1 | 3 |
| Polite speech act | The speech acts that try to save waiter's "positive face" (i.e. the customer's approval of the waiter's self-esteem) | 1 | 3 |
| Uncommon situations in restaurant context | The uncommon scenarios that native speaker might encounter in the restaurant context (e.g. fly in the dish, food taste bad) | 2 | 6 |
| Dissatisfaction actions | How native speaker express his or her dissatisfaction in this kind of scenarios | 2 | 5 |

Consent form for the field experiment

Field experiment - consent form for participants

Project title: An easier way to learn a language? User centred design of computer assisted language learning systems for pragmatics

Experimenter(s): Liquan Chai, Maria Wolters, Affiliation: University of Edinburgh

Project description

The aim of this research project is to design a language learning tool for individual English-as-foreign-language learners who come to an English-speaking country to help them to enhance their oral communicative competence.

This retrospective verbal experiment intends to collect authentic speech materials of the interaction between Chinese customers and waiters. The collected speech will be used to develop a virtual learning environment for non-native speakers to practice their speaking skills. This experiment will not aim to evaluate your English proficiency.

During the experiment, the speech acts of the Chinese customer and the waiter will be audio taped. Start from the customer entering the restaurant and end when the customer leaves the restaurant. The entire process will be record anonymously.

Before you decide if you wish to take part, it is important for you to understand how this research is being done, risks and benefits and how your data is used. Please take time to read this consent form carefully and ask the experimenter(s) questions if you have anything that you are unclear of.

Risks and benefits

This research study has been self-certified using the Ethics standards of the School of Informatics, University of Edinburgh. There is no known risk involved in this study.

Data and protection

This experiment does not collect your personal information except the email address. Your email address will only be used for researchers who would like to invite you to participate in follow-up studies of this project. Your email address will be protected during the project and destroyed at the end of the project.

Your speech during the experiment will be audio taped for analysis. The speech will be collected anonymously, and will only be analysed for academic purposes. The speech will be stored on University computers and on password protected laptops with encrypted drives. We will identify speech that could be used to identify you and anonymise them. While your speech may be used for publication, it will not possible to identify your identity from any publications.

How speech will be analysed

The collected speech will be listened by native English speakers to see if they have pragmatic problems. The recording will be kept confidentiality throughout the project, and will show to native speakers anonymously. The process will be supervised by Liquan Chai. When the project ends, the recording will be destroyed. Any variation of the conditions above will only occur with your further explicit approval.

Time involvement

Your participation in this experiment will take approximately 60 minutes.

Subject rights

If you have read this form and decided to participate in this experiment, please understand your participation is voluntary and you have the right to withdraw your consent and discontinue participation at any time without penalty. Your individual privacy will be protected in all publications resulting from the study. You have right to ask for your data to be removed from the study.

By signing the form, you are agreed that:

6. I am voluntarily taking part in this project. I understand that I don't have to take part, and I can stop the experiment at any time.
7. The experiment will be audio taped and will be analysed by native English speakers, and I understand that the transcribed responses will be used anonymously for academic purposes, and the audio responses will be protected during the project, and destroyed at the end of the project.
8. Your quotations or summary of the transcriptions might be used in academic publication anonymously.
9. I agree to be contacted in the future by researchers who would like to invite me to participate in follow-up studies of this project by email.
10. I have read the understand the consent form, and I am free to contact the researcher with any questions I may have in the future.

Name: _____ Email: _____
Signature: _____ Date: _____

Contact information

If you have any further questions about this study or the project, you can email: Liquan Chai s1226443@sms.ed.ac.uk and/or Maria Wolters maria.wolters@ed.ac.uk for further information.

Codebook for the field experiment

| Name | Description | Files | References |
|---|--|-------|------------|
| Other pragmatic failure | The inappropriate behaviours that the student made which unrelated to politeness issues | 4 | 45 |
| Avoid scenarios | The student tried to or avoided the scenarios that they are unfamiliar with | 4 | 8 |
| Cognitive load (complex scenarios) | Although the student knows the appropriate use of language, he or she did not perform it, due to the cognitive load he or she had (e.g. the student had to decide what to eat as well as build up the sentence that he or she wants to say) | 3 | 5 |
| Language problem | The language problems that prevents the student to use appropriate languages | 4 | 32 |
| Difficult to understand native expressions | The student cannot understand waiter's authentic expressions; therefore, the student used the inappropriate language. | 3 | 12 |
| Don't know what to say (direct translation) | The student did not know the appropriate language to say in that scenario; therefore, the student decided to convey his or her intention by direct translation | 3 | 19 |
| Politeness issues | The inappropriate behaviours that the student made which related to politeness issues | 4 | 40 |
| Cognitive load and forget to be polite | Although the student knows the polite language to use in the scenario, he or she did not perform it, due to the cognitive load he or she had (e.g. the waiter asked the student an unexpected question, e.g. "Do you want any sauce?", the student might just say "ketchup" and forget to add "thank you", because the | 4 | 21 |

| Name | Description | Files | References |
|--|--|-------|------------|
| | student was working out the mentioning of waiter's sentence) | | |
| Complex scenarios | The student encountered scenarios that he or she unfamiliar with; therefore, the student used the impolite language | 3 | 6 |
| Language difficulty (listening and speaking) | The student did not know the polite language to say in that scenario; therefore, he or she decided to convey his or her intention by direct translation The student cannot understand waiter's authentic expressions; therefore, the student used the impolite language | 2 | 8 |
| Cultural difference | Due to different cultural conventions, the student thought it is polite to behave in that way, but it is not in reality | 4 | 19 |

Presentations for the participatory (Co-design) design session

Co-design session

How to interact with waiters in the causal restaurant?

The aim of the co-design session

- Design a dialogue system for enhancing communicative competence in restaurant context.
- Findings:
 - Cultural difference – call the waiter (obvious one)
 - Chinese students are unfamiliar with the dining process in UK:
 - They don't know what to say in unfamiliar context
 - If waiter asks a question they unexpected, they might feel anxious and forget to say things that they already learned
- Aim:
 - Outline the restaurant process
 - Identify scenarios that Chinese student unfamiliar with, and analyse these scenarios

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 - Cultural difference – call the waiter (obvious one)
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 - Identify scenarios that Chinese student unfamiliar with, and analyse these scenarios



Mental models

Restaurant scripts

Write down the dining process in causal restaurant

- For Chinese students:
 - What scenarios involved in restaurant in China?
- For native speakers:
 - What scenarios involved in restaurant in UK/US?
- Write the down all possible scenarios that you could think of.



Role play - the dining process

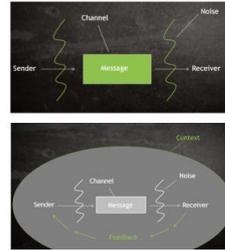
- Perform the dining process in UK based on the scenarios you have written (native speakers)
- When playing, questions for Chinese students:
 - What scenarios (i.e. when, where, and what to do) occur frequently in both China and UK restaurants? (Label familiar)
 - In these scenarios, What utterances the native speakers use?
 - Is this exactly what you will say in Chinese? Have you used these expressions before? (Label yes - I have used, Label no - never used this utterance before)
- After performing:
 - For native speakers:
 - Is there any scenarios which you have not written down?
 - For Chinese students:
 - What scenarios that are really unfamiliar to you? (Label unfamiliar)?

Rank the scenarios

- What scenarios I should teach?
- Reposition the scenarios – rank the importance by necessity and difficulty
- Place basic and essential scenarios near the middle
- Place advanced and optional scenarios for dining on far edge
- In between: not that important for dining, but it might be difficult for non-native speakers to learn

Models of human communications

- Linear model (Shannon & Weaver, 1949)
- Interactional model (Schramm, 1954)



Analyse the scenarios

- For scenarios that Chinese student labelled “no” or “unfamiliar”:
 - Native speakers, could you explain (and write down) the following:
 - Speech utterance you used/will use
 - Intent of that utterance
 - Expectations from the speaker
 - Response (utterance) that the hearer should use

- Thank you for participating this co-design session

Background of the project - Pragmatic failures

- Failure to achieve the desired communicative effect in communication due to the infelicitous style, incompatible expressions, and improper habit.
- Pragmalinguistic failure - occurs when second language speakers used a utterance which is never used by native speakers to express the same meaning.
 - E.g. “Could you help me to open the light?”
- Sociopragmatic failure – occurs when the speaker does not give concern to the identity and social status of the listener during the conversation.
 - E.g. “Would you want a chocolate?” “No, thanks”

Corpus of the communicative CALL system

The enter restaurant scenario

```
enter_restaurant_corpus x
1 task_id: start
2 recognise:
3 server_speech:
4 server_intent:
5 task:
6 suggested_speech:
7 unsuggested_speech:
8 Img_url:
9
10 task_id: 1
11 recognise:
12 server_speech: <speake><break time='2s'>/>Hello, the host is busy, could you wait just a minute, okay?<
/speake>
13 server_intent: 服务员很忙, 她想让你稍微等一会, 她会稍后安排。
14 task: 你需要两个人的位置, 你会怎么说?
15 suggested_speech: Yes, take your time.
16 unsuggested_speech: Excuse me, a table for two please.
17 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
18
19 task_id: 2
20 recognise: Yes, take your time. |(Excuse) me, a table for two please.
21 server_speech: <speake><break time='5s'>/>Hello.</speake>
22 server_intent: 服务员向你走过来, 她准备给你安排一个位置。
23 task: 快告诉服务员你需要两个人的位置吧。
24 suggested_speech: May I have a table for 2?
25 unsuggested_speech: Sorry, I want a table for 2.
26 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
27
28 task_id: 3
29 recognise: May I have a table for 2? |Sorry, I (want) a table for 2.
30 server_speech: <speake><break time='2s'>/>Where would you like to sit? Sit here or by window?</speake>
31 server_intent: 服务员问你想要坐在哪里, 靠门口还是靠窗?
32 task: 你觉得靠窗的位置更好, 快告诉她吧。
33 suggested_speech: I'd like to sit near window
34 unsuggested_speech: By window.
35 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
36
37 task_id: 4
38 recognise: I'd like to sit near window. |(By) window.
39 server_speech: <speake><break time='2s'>/>Okay, follow me please.</speake>
40 server_intent: 服务员把你领到用餐的位置上。
41 task: 这时候你该说什么?
42 suggested_speech: Thank you.
43 unsuggested_speech: Okay.
44 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
45
46 task_id: end
47 recognise: Thank you. |(Okay).
48 server_speech: <speake><break time='2s'>/>This is the end of the practice. Here is your feedback.<
/speake>
49 server_intent:
50 task:
51 suggested_speech:
52 unsuggested_speech:
53 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
54
55 task_id: 5
56 recognise:
57 server_speech: <speake><break time='10s'>/></speake>
58 server_intent:
59 task: 你已经预订好一个两个人的位置了, 告诉正在招待的服务员吧。
60 suggested_speech: Excuse me, I have booked a table for 2, under the name of Zhang.
61 unsuggested_speech: I have made a reservation. My name is Zhang.
62 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
63
64 task_id: 6
65 recognise: Excuse me, I have booked a table for 2, under the name of Zhang. |I have made a (
reservation). My name is Zhang.
66 server_speech: <speake><break time='2s'>/>Let me check the reservation<break time='2s'>/>okay, I have
the table ready for you, follow me.</speake>
67 server_intent: 服务员把你领到用餐的位置上。
68 task: 这时候你该说什么?
69 suggested_speech: Thank you.
70 unsuggested_speech: Okay.
71 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
```

The get seated scenario

```
get_seated_corpus x
1 task_id: start
2 recognise:
3 server_speech:
4 server_intent:
5 task:
6 suggested_speech:
7 unsuggested_speech:
8 Img_url:
9
10 task_id: 1
11 recognise:
12 server_speech: <speech><break time='2s'>Hi, how're you doing? Can I get you some drink?</speech>
13 server_intent: 服务员在和你打招呼, 并且询问你需不需要喝些什么。一般来说, 在英国, 酒水是先点的。
14 task: 你不是很渴, 所以礼貌的回绝她吧。
15 suggested_speech: Thank you, I'm good.
16 unsuggested_speech: No, where is the menu?
17 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
18
19 task_id: 2
20 recognise:
21 server_speech: <speech><break time='2s'>Hi, how're you doing? Can I get you some drink?</speech>
22 server_intent: 服务员在和你打招呼, 并且询问你需不需要喝些什么。一般来说, 在英国, 酒水是先点的。
23 task: 你想喝点水, 快告诉服务员吧。
24 suggested_speech: It's going well. Can I have some tap water?
25 unsuggested_speech: I want some water.
26 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
27
28 task_id: 3
29 recognise:
30 server_speech: <speech><break time='2s'>Hi, how're you doing? Can I get you some drink?</speech>
31 server_intent: 服务员在和你打招呼, 并且询问你需不需要喝些什么。一般来说, 在英国, 酒水是先点的。
32 task: 你想喝点饮料, 但是你不确定餐厅有什么, 快问问服务员吧。
33 suggested_speech: I'm good. What drinks do you have? Can I have the drink list?
34 unsuggested_speech: I want to drink something, what do you have?
35 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
36
37 task_id: 4
38 recognise: Thank you, I'm good.|No, where is the (menu)?
39 server_speech: <speech><break time='2s'>Alright, have a look at the menu. I will be back in a minute.
</speech>
40 server_intent: 服务员确认了你 not 口渴, 她会给你一些时间去查看餐单, 过一段时间以后, 她会回来的。
41 task: 这时候, 你该说什么?
42 suggested_speech: Cheers.
43 unsuggested_speech: Okay, when will you be back?
44 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
45
46 task_id: end
47 recognise: Cheers.|(Okay, when will you be back?)Cheers.|Okay, that's (fine).
48 server_speech: <speech><break time='2s'>This is the end of the practice. Here is your feedback.<
/speech>
49 server_intent:
50 task:
51 suggested_speech:
52 unsuggested_speech:
53 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
54
55 task_id: 5
56 recognise: It's going well. Can I have some tap water?|I (want) some water.|Excuse me, can I have a
cup of coke with no ice?|Hello, I (want) a cup of coke and no ice please.
57 server_speech: <speech><break time='2s'>Yes, of course. Just a minute.</speech>
58 server_intent: 服务员积极的回应了你的要求。
59 task: 你扫了一眼, 你还要再想想, 告诉服务员你需更多的时间吧。
60 suggested_speech: Cheers.
61 unsuggested_speech: Okay, that's fine.
62 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
63
64 task_id: 6
65 recognise: I'm good. Can I have the drink list?|I (want) to drink something, what do you have?
66 server_speech: <speech><break time='2s'>Yes, sure. I will be back in a minute.<break time='4s'>Here
you go.<break time='2s'></speech>
67 server_intent: 服务员积极的回应了你的要求, 并且拿来了酒水单。
68 task: 你扫了一眼, 你还要再想想, 告诉服务员你需更多的时间吧。
69 suggested_speech: Can I have a little bit more time? Just wondering what to drink.
70 unsuggested_speech: I need more time.
71 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
72
73 task_id: 7
74 recognise: Can I have a little bit more time? Just wondering what to drink.|I (need) more time.
75 server_speech: <speech><break time='8s'></speech>
76 server_intent:
77 task: 你决定好要一杯不加冰的可乐, 告诉服务员吧。
78 suggested_speech: Excuse me, can I have a cup of coke with no ice?
79 unsuggested_speech: Hello, I want a cup of coke and no ice please.
80 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
```

The make order scenario

```
make_order_corpus x
1 task_id: start
2 recognise:
3 server_speech:
4 server_intent:
5 task:
6 suggested_speech:
7 unsuggested_speech:
8 Img_url:
9
10 task_id: 1
11 recognise:
12 server_speech: <speack><break time='2s'>Are you ready to order?</speack>
13 server_intent: 在英国，一般来说，服务员会在合适的时机主动地走过来问你需不需要点餐。
14 task: 你决定先点一个沙拉做前菜。
15 suggested_speech: Yes, can I have a salad for the starter?
16 unsuggested_speech: I want a salad.
17 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
18
19 task_id: 2
20 recognise:
21 server_speech: <speack><break time='2s'>Are you ready to order?</speack>
22 server_intent: 在英国，一般来说，服务员会在合适的时机主动地走过来问你需不需要点餐。
23 task: 在阅读完菜单以后，你觉得眼花缭乱，试着问下服务员有什么推荐吧。
24 suggested_speech: What do you like on the menu?
25 unsuggested_speech: Hey, any specials?
26 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
27
28 task_id: 3
29 recognise:
30 server_speech: <speack><break time='6s'></speack>
31 server_intent: 在英国，一般来说，服务员会在合适的时机主动地走过来问你需不需要点餐，但也有例外，因为有的时候服务员很忙。
32 task: 叫服务员过来吧，告诉她你想点餐了。
33 suggested_speech: Excuse me, can I make the order.
34 unsuggested_speech: Hello, I want to order.
35 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
36
37 task_id: 4
38 recognise: Excuse me, can I make the order. [Hello, I (want) to order.
39 server_speech: <speack><break time='2s'>Are you ready to order?</speack>
40 server_intent: 服务员过来了，并且拿出纸和笔，准备记下你点了什么。
41 task: 你决定先点一个沙拉做前菜。
42 suggested_speech: Yes, can I have a salad for the starter?
43 unsuggested_speech: And I want a salad.
44 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
45
46 task_id: 5
47 recognise: Yes, can I have a salad for the starter? [I (want) a salad. [Yes, can I have a salad for
the starter? [And I (want) a salad.
48 server_speech: <speack><break time='2s'>What dressing would you like on your salad?</speack>
49 server_intent: 服务员想知道你的沙拉准备配什么酱。
50 task: 你不确定餐厅有什么酱，问问服务员吧。
51 suggested_speech: What dressing do you have?
52 unsuggested_speech: Tell me what you've got.
53 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
54
55 task_id: 6
56 recognise: What dressing do you have? [Tell me what you've (got).
57 server_speech: <speack><break time='2s'>We have ranch, honey mustard, thousand island, what would
you like?</speack>
58 server_intent: 服务员介绍了餐厅常用的沙拉酱，ranch (牧场酱/蛋黄酱)，honey
mustard (蜂蜜芥末酱)，thousand island (千岛酱)。
59 task: 你觉得千岛酱不错，快告诉服务员吧。
60 suggested_speech: Can you make it with thousand island?
61 unsuggested_speech: I want thousand island, please.
62 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
63
64 task_id: 7
65 recognise: Can you make it with thousand island? [I (want) thousand island, please.
66 server_speech: <speack><break time='2s'>What would you like for your main?</speack>
67 server_intent: 服务员想知道你的主菜吃什么。
68 task: 告诉他你想要意大利肉酱面。
69 suggested_speech: Can I have the spaghetti bolognese?
70 unsuggested_speech: I want spaghetti bolognese.
71 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
72
73 task_id: 8
74 recognise: Can I have the spaghetti bolognese? [I (want) spaghetti bolognese. [Yes everything, please.
[I (don't) like tomato. [I'd like it medium well. [I (want) it 70 percent done.
75 server_speech: <speack><break time='2s'>No problem. That will be 15 minutes. Is that all for you?<
/speack>
76 server_intent: 服务员想和确认一下，然后准备下单了。
77 task: 向服务员确认一下你点的餐吧。
78 suggested_speech: Yes, that's all, thank you.
79 unsuggested_speech: That's fine.
80 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
```

```

81 task_id: end
82 recognise: Yes, that's all, thank you.|That's (fine).
83 server_speech: <speaK><break time='2s'>This is the end of the practice. Here is your feedback.<
84 /speaK>
85 server_intent:
86 task:
87 suggested_speech:
88 unsuggested_speech:
89 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
90
91 task_id: 9
92 recognise: What do you like on the menu?|Hey, any (specials)?
93 server_speech: <speaK><break time='2s'>I would say the best one is the warrior burger. It has BBQ
94 beef brisket, smoky cheese, garlic, and salad on the top.</speaK>
95 server_intent: 服务员向你介绍了这个餐厅的特色菜。
96 task: 你觉得还不错, 告诉服务员就点这个吧。 / 你不太喜欢吃汉堡, 问问服务员有没有其他推荐吧。
97 suggested_speech: Yes, I think that works for me. / Is there anything else you recommend aside from
98 burgers?
99 unsuggested_speech: Yes, I want this one. / I don't like burgers.
100 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
101
102 task_id: 10
103 recognise: Yes, I think that works for me.|Yes, I (want) this one.
104 server_speech: <speaK><break time='2s'>Do you want lettuce, tomato, onion, everything on the
105 burger?</speaK>
106 server_intent: 在英国, 对于汉堡来说, 里面的配菜是可以选择的。
107 task: 你觉得很不错, 告诉服务员吧。 / 你不太喜欢吃西红柿(tomato), 告诉服务员吧。
108 suggested_speech: Yes everything, please. / Can I have just lettuce and onion?
109 unsuggested_speech: I want everything on it. / I don't like tomato.
110 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
111
112 task_id: 11
113 recognise: Is there anything else you recommend aside from burgers?|I (don't) like burgers.
114 server_speech: <speaK><break time='2s'>Well, our steak is also very popular, would like that
115 instead?</speaK>
116 server_intent: 服务员又向你推荐了他们店的牛排。
117 task: 你很喜欢吃牛排, 快告诉服务员吧。
118 suggested_speech: Yes, that sounds good.
119 unsuggested_speech: Fine, I want the steak.
120 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
121
122 task_id: 12
123 recognise: Yes, that sounds good.|Fine, I want the steak.
124 server_speech: <speaK><break time='2s'>How would you like your steak?</speaK>
125 server_intent: 服务员想知道你要几成熟的牛排。一分熟(rare), 三分熟(medium rare), 五分熟(medium)
126 , 七分熟(medium well), 全熟(well done)。
127 task: 告诉服务员你想要七成熟的牛排。
128 suggested_speech: I'd like it medium well.
129 unsuggested_speech: I want it 70 percent done.
130 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg

```

The during meal scenario

```
during_meal_corpus *
1 task_id: start
2 recognise:
3 server_speech:
4 server_intent:
5 task:
6 suggested_speech:
7 unsuggested_speech:
8 Img_url:
9
10 task_id: 1
11 recognise:
12 server_speech: <speack><break time='2s'>How is the food? Do you want anything else?</speack>
13 server_intent: 服务员在问他上的菜是不是符合和你的口味, 并且问你需不需要任何其他的帮助。
14 task: 你想要一些酱料, 快告诉服务员吧。
15 suggested_speech: It is delicious. Thank you. Also, can I have some extra sauce?
16 unsuggested_speech: I want some sauce, what do you have?
17 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
18
19 task_id: 2
20 recognise: It is delicious. Thank you. Also, can I have some extra sauce?|I (want) some sauce, what
do you have?
21 server_speech: <speack><break time='2s'>Of course, we've got ketchup, mustard, mayo, what do you
prefer?</speack>
22 server_intent: 服务员给你介绍了餐厅所有的酱料, 问你喜欢哪一个。
23 task: 你很喜欢蘸番茄酱, 快告诉服务员吧。
24 suggested_speech: Can I have some ketchup?
25 unsuggested_speech: I want some ketchup, please.
26 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
27
28 task_id: 3
29 recognise: Can I have some ketchup?|I (want) some ketchup, please.
30 server_speech: <speack><break time='2s'>Sure, I will bring it for you.</speack>
31 server_intent: 服务员积极的回应了你的要求, 并且准备动身去拿番茄酱。
32 task: 这时候你该说什么?
33 suggested_speech: Thank you.
34 unsuggested_speech: That's okay.
35 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
36
37 task_id: end
38 recognise: Thank you.|That's (okay).
39 server_speech: <speack><break time='2s'>This is the end of the practice. Here is your feedback.<
/speack>
40 server_intent:
41 task:
42 suggested_speech:
43 unsuggested_speech:
44 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
45
46 task_id: 4
47 recognise:
48 server_speech: <speack><break time='2s'>How is the food? Do you want anything else?</speack>
49 server_intent: 服务员在问他上的菜是不是符合和你的口味, 并且问你需不需要任何其他的帮助。
50 task: 你觉得有点渴, 想要点水, 快告诉服务员你的需求吧。
51 suggested_speech: Can I have some more water?
52 unsuggested_speech: I want some more water, please?
53 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
54
55 task_id: 5
56 recognise: Can I have some more water?|I (want) some more water, please?
57 server_speech: <speack><break time='2s'>Yes, of course. I will bring it to you.</speack>
58 server_intent: 服务员积极的回应了你的要求, 并且准备动身去给你加水。
59 task: 这时候你该说什么?
60 suggested_speech: Thank you.
61 unsuggested_speech: That's okay.
62 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
63
64 task_id: 6
65 recognise:
66 server_speech: <speack><break time='2s'>How is the food? Do you want anything else?</speack>
67 server_intent: 服务员在问他上的菜是不是符合和你的口味, 并且问你需不需要任何其他的帮助。
68 task: 你觉得这个食物很难吃, 你决定向服务员反映这个事情。
69 suggested_speech: I'm sorry, I think it is overcooked.
70 unsuggested_speech: I think the food tastes bad.
71 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
72
```

```

72
73 task_id: 7
74 recognise: I'm sorry, I think it is overcooked. | I think the food tastes (bad).
75 server_speech: <speech><break time='2s' /> I'm sorry, can we replace the dish for you? </speech>
76 server_intent: 服务员主动的提出了解决方案。
77 task: 这时候你该说什么?
78 suggested_speech: Thank you.
79 unsuggested_speech: That's okay.
80 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
81
82 task_id: 8
83 recognise:
84 server_speech: <speech><break time='10s' /> </speech>
85 server_intent:
86 task: 你已经等了20分钟了, 但是服务员还没有上菜, 你决定向服务员反映这个事情。
87 suggested_speech: Excuse me, I have been waited for 20 minutes, I'm just checking if everything
88 alright?
89 unsuggested_speech: Excuse me, when will my dish come?
90 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
91
92 task_id: 9
93 recognise: Excuse me, I have been waited for 20 minutes, I'm just checking if everything
94 alright? | Excuse me, when will my dish (come)?
95 server_speech: <speech><break time='2s' /> I'm sorry. I will go and have a check. </speech>
96 server_intent: 服务员表达了抱歉。
97 task: 你会说什么?
98 suggested_speech: Thank you.
99 unsuggested_speech: That's okay.
100 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg

```

The finish meal scenario

```

finish_meal_corpus
1 task_id: start
2 recognise:
3 server_speech:
4 server_intent:
5 task:
6 suggested_speech:
7 unsuggested_speech:
8 Img_url:
9
10 task_id: 1
11 recognise:
12 server_speech: <speech><break time='2s' /> Is everybody finished? Would you like anything else? </speech>
13 server_intent:
14 在英国, 服务员看见你用完主菜后, 会主动过来收走你的盘子, 并且问你需不需要加水或者要甜点。
15 task: 你觉得已经很饱了, 是时候告诉服务员你想结账了。
16 suggested_speech: No, I'm full. Can I have the bill please?
17 unsuggested_speech: I want to check out.
18 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
19
20 task_id: 2
21 recognise:
22 server_speech: <speech><break time='2s' /> Is everybody finished? Would you like anything else? </speech>
23 server_intent:
24 在英国, 服务员看见你用完主菜后, 会主动过来收走你的盘子, 并且问你需不需要加水或者要甜点。
25 task: 你想点甜点, 告诉服务员你的想法吧。
26 suggested_speech: Yes, I'd like to see the dessert menu.
27 unsuggested_speech: dessert, please?
28 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
29
30 task_id: 3
31 recognise:
32 server_speech: <speech><break time='10s' /> </speech>
33 server_intent:
34 task: 虽然你没有吃完你的食物, 但是你觉得已经很饱了, 告诉服务员你想把食物打包带走的想法吧。
35 suggested_speech: Excuse me, can you box it up for me please?
36 unsuggested_speech: Hello, I want to pack it up.
37 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
38
39 task_id: 4
40 recognise: No, I'm full. Can I have the bill please? | I (want) to check out. | Can I have the bill
41 please? | I (want) to check out.
42 server_speech: <speech><break time='2s' /> Sure, I will bring the bill to you. <break time='5s' /> Here
43 you go. </speech>
44 server_intent:
45 服务员确认了你的想法, 去拿了账单, 放到桌子上并离开了。在英国, 服务员会给你一些时间去核对账单。
46 task: 在核对完账单后, 你想用卡支付, 叫服务员过来并且告诉她吧。 /
47 在核对完账单后, 你想用现金支付, 快告诉她吧。
48 suggested_speech: Excuse me, can I pay it by card? / That's forty five pounds.
49 unsuggested_speech: I want to swipe the card to pay. / Here you are.
50 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg

```

```

46 task_id: 5
47 recognise: Excuse me, can I pay it by card?|I (want) to swipe the card to pay.
48 server_speech: <speaK><break time='2s'>Sure, I will bring the card machine, two seconds<break
49 time='3s'>Can I have the card?<break time='5s'>Thank you.</speak>
49 server_intent: 在英国, 服务员会把刷卡机拿过来让你支付, 一般来说你并不需要到前台结账。
50 task: 你结完账, 对服务员说声谢谢还有再见吧。
51 suggested_speech: Thank you, have a nice day.
52 unsuggested_speech: Thank you, goodbye.
53 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
54
55 task_id: 6
56 recognise: That's forty five pounds. |(Here) you are.
57 server_speech: <speaK><break time='2s'>Here is your change.</speak>
58 server_intent: 在英国, 服务员不会向你耍小费, 如果你觉得服务满意的话, 最好以现金的形式给服务员小费,
59 以确保服务员能拿到小费。
59 task: 你对服务员的服务很满意, 你决定给一些小费。
60 suggested_speech: Keep the change.
61 unsuggested_speech: Here is your tips.
62 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
63
64 task_id: end
65 recognise: Thank you, have a nice day. |Thank you, (goodbye). |Keep the change. |Here is your (tips).
66 server_speech: <speaK><break time='2s'>This is the end of the practice. Here is your feedback.<
67 /speak>
67 server_intent:
68 task:
69 suggested_speech:
70 unsuggested_speech:
71 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
72
73 task_id: 7
74 recognise: Yes, I'd like to see the dessert menu. |(Do) you have some dessert?
75 server_speech: <speaK><break time='2s'>Here you go.<break time='10s'> Are you ready to order any
76 dessert?</speak>
76 server_intent: 服务员给你一些时间去决定吃什么甜点, 然后她会过来下单。
77 task: 你觉得香草冰激凌会很好吃, 告诉服务员吧。
78 suggested_speech: Can I have one scoop of vanilla ice cream?
79 unsuggested_speech: I want one vanilla ice cream, please.
80 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
81
82 task_id: 8
83 recognise: Can I have one scoop of vanilla ice cream?|I (want) one vanilla ice cream, please.
84 server_speech: <speaK><break time='2s'>Of course.<break time='10s'>That's your vanilla ice cream<
85 /speak>
85 server_intent: 服务员回应了你的要求, 过了一会儿, 把甜点送了上来。
86 task: 这时候你该说什么?
87 suggested_speech: Thank you.
88 unsuggested_speech: Alright.
89 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
90
91 task_id: 9
92 recognise: Thank you. |(Alright).
93 server_speech: <speaK><break time='5s'>Is everybody finished? Is there anything else I can do for
94 you</speak>
94 server_intent: 吃完甜点以后, 服务员会主动过来收走的餐具, 并且问你需不需要其他帮助。
95 task: 是时候告诉服务员你想结账了。
96 suggested_speech: Can I have the bill please?
97 unsuggested_speech: I want to check out.
98 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
99
100 task_id: 10
101 recognise: Excuse me, can you box it up for me please?|Hello, I (want) to pack it up.
102 server_speech: <speaK><break time='2s'>No problem. I will box it just now.<break time='5s'> Here
103 you are. Is there anything else I can do for you?</speak>
103 server_intent: 服务员回应了你的要求, 过了一会儿, 把餐盒送了过来, 并且问你需不需要其他帮助。
104 task: 是时候告诉服务员你想结账了。
105 suggested_speech: Can I have the bill please?
106 unsuggested_speech: I want to check out.
107 Img_url: https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/waiter.jpg
108

```

Finite state machines of the communicative CALL system

The enter restaurant scenario

```
enter_restaurant_task_diagram x
1 start: 1, 5
2 1: 2
3 2: 3
4 3: 4
5 4: end
6 5: 6
7 6: end
```

The get seated scenario

```
get_seated_task_diagram x
1 start: 1, 2, 3
2 1: 4
3 4: end
4 2: 5
5 5: end
6 3: 6
7 6: 7
8 7: 5
```

The make order scenario

```
make_order_task_diagram x
1 start: 1, 2, 3
2 1: 5
3 3: 4
4 4: 5
5 5: 6
6 6: 7
7 7: 8
8 8: end
9 2: 9
10 9: 10, 11
11 10: 8
12 11: 12
13 12: 8
```

The during meal scenario

```
during_meal_task_diagram x
1 |start: 1, 4, 6, 8
2 1: 2
3 2: 3
4 3: end
5 4: 5
6 5: end
7 6: 7
8 7: end
9 8: 9
10 9: end
```

The finish meal scenario

```
finish_meal_task_diagram x
1 |start: 1, 2, 3
2 1: 4
3 3: 10
4 4: 5, 6
5 5: end
6 6: end
7 2: 7
8 7: 8
9 8: 9
10 9: 4
11 10: 4
```

Example of the code of the communicative CALL system

```
finish_meal.py x
1
2 # coding: utf-8
3
4 # In[1]:
5
6
7 # flask ask
8 import logging
9 from flask import Flask
10 from flask_ask import Ask, statement, question, context
11
12 # aws services
13 import boto3
14 from boto3.dynamodb.conditions import Key, Attr
15 from botocore.exceptions import ClientError
16
17 # funcatinal
18 import random
19
20
21 # In[ ]:
22
23
24 # mode of the program
25
26 import argparse
27 parser = argparse.ArgumentParser(description="decide the mode of the program, either be 'full' or 'task'")
28 parser.add_argument("--mode", "-m", help="mode can be 'full' or 'task'")
29 parser.add_argument("--difficulty", "-d", help="difficulty can be 'esay' or 'hard'")
30 args = parser.parse_args()
31
32
33 # In[2]:
34
35
36 ###
37 # framework set up
38 ###
39
40 # add debug logs
41 logging.getLogger("flask_ask").setLevel(logging.DEBUG)
42
43 # initialise flask-ask
44 app = Flask(__name__)
45 ask = Ask(app, "/")
46
47 ###
48 # database set up
49 ###
50
51 # you have to set up the aws CLI access keys
52 dynamodb = boto3.resource("dynamodb", region_name="eu-west-2", endpoint_url="https://dynamodb.eu-west-2.amazonaws.com")
53 table = dynamodb.Table("Finish_meal") # the key is device_id
54
55
```

```
59 ###
60 # database utils
61 ###
62
63 # get data from dynamodb, key error - no item found
64 def get_item(key): # key - device id
65     key_dict = {"device_id": key}
66     try:
67         response = table.get_item(Key=key_dict)
68     except ClientError as e:
69         print(e.response["Error"]["Message"])
70     else:
71         item = response["Item"]
72         return item
73
```

```

73
74 # put/update data to dynamodb
75 def update_item(key, difficulty, program_mode, task_diagram_filename, corpus_filename): # polite score
76     key_dict = {"device_id": key}
77     expression = "set difficulty = :b, program_mode = :d, task_diagram_filename = :e, corpus_filename = :f"
78     expression_values = {"b": difficulty, "d": program_mode, "e": task_diagram_filename, "f": corpus_filename}
79     try:
80         response = table.update_item(Key=key_dict, UpdateExpression=expression,
81                                     ExpressionAttributeValues=expression_values,
82                                     ReturnValues="UPDATED_NEW")
83     except ClientError as e:
84         print(e.response["Error"]["Message"])
85
86 # delete data from dynamodb
87 def delete_item(key):
88     key_dict = {"device_id": key}
89     try:
90         response = table.delete_item(Key=key_dict)
91     except ClientError as e:
92         print(e.response["Error"]["Message"])
93
94 # update a specific attribute of an item
95 def update_item_attribute(key, attribute_name, attribute_value):
96     key_dict = {"device_id": key}
97     expression = "set {} = :a".format(attribute_name)
98     expression_values = {"a": attribute_value}
99     try:
100         response = table.update_item(Key=key_dict, UpdateExpression=expression,
101                                     ExpressionAttributeValues=expression_values,
102                                     ReturnValues="UPDATED_NEW")
103     except ClientError as e:
104         print(e.response["Error"]["Message"])
105

```

```

110 class Conversation:
111     def __init__(self, task_diagram_filename, corpus_filename, difficulty, program_mode, device_id):
112         self.task_diagram = {}
113         self.load_task_diagram(task_diagram_filename)
114         self.data = {}
115         self.load_corpus(corpus_filename)
116
117         self.device_id = device_id
118         self.difficulty = difficulty
119         self.program_mode = program_mode
120
121         self.current_task_id = None
122         self.polite_score = None
123
124         # send them to database
125         update_item(self.device_id, self.difficulty, self.program_mode, task_diagram_filename, corpus_filename)
126
127     def set_current_task_id(self, database_current_task_id): # argument that can be reset
128         self.current_task_id = database_current_task_id
129
130     def set_polite_score(self, database_polite_score): # argument that can be reset
131         self.polite_score = database_polite_score
132         update_item_attribute(self.device_id, "polite_score", self.polite_score)
133
134     def calculate_polite_score(self, speech_word):
135         if self.current_task_id != "start" and self.current_task_id is not None:
136             import re
137             # get the impolite keywords
138             impolite_keywords = []
139             impolite_sentences = self.data[self.current_task_id]["recognise"].split("|")[1::2]
140             for sentence in impolite_sentences:
141                 if re.search(r"\([a-zA-Z0-9'\+\)\)", sentence):
142                     impolite_keywords.append(re.search(r"\([a-zA-Z0-9'\+\)\)", sentence).group(0).strip())
143             # compare the speech_word to the impolite keyword
144             if speech_word in impolite_keywords:
145                 self.polite_score = str(int(self.polite_score) - 1)
146             else:
147                 self.polite_score = str(int(self.polite_score) + 1)
148         else:
149             self.polite_score = "0"
150         # send the polite score to the database
151         update_item_attribute(self.device_id, "polite_score", self.polite_score)
152

```

```

152
153 def check_polite_score(self):
154     if int(self.polite_score) > 0:
155         return "polite"
156     else:
157         return "impolite"
158
159 def load_task_diagram(self, task_diagram_filename):
160     with open(task_diagram_filename) as f:
161         for line in f:
162             self.task_diagram[line.split(":")[0]] = list(map(lambda x: x.strip(), line.split(":")
163
164 def get_next_task_id(self, current_task_id): # get the task_id of the next task
165     if current_task_id != "end":
166         if self.difficulty == "easy":
167             return self.task_diagram[current_task_id][0]
168         else: # "hard"
169             return random.choice(self.task_diagram[current_task_id])
170     else:
171         return "end"
172
173 def load_corpus(self, corpus_filename):
174     with open(corpus_filename, encoding='UTF-8') as f:
175         raw_data = []
176         for line in f:
177             raw_data.append(line)
178     raw_data = list(map(lambda x: x.split(":")[-1].strip(), raw_data))
179
180     for i in range(0, len(raw_data), 9): # each conversational must have 8 lines
181         self.data[raw_data[i]] = {} # task_id as key
182         self.data[raw_data[i]]["recognise"] = raw_data[i+1]
183         self.data[raw_data[i]]["server_speech"] = raw_data[i+2]
184         self.data[raw_data[i]]["server_intent"] = raw_data[i+3]
185         self.data[raw_data[i]]["task"] = raw_data[i+4]
186         self.data[raw_data[i]]["suggested_speech"] = raw_data[i+5]
187         self.data[raw_data[i]]["unsuggested_speech"] = raw_data[i+6]
188         self.data[raw_data[i]]["img_url"] = "https:" + raw_data[i+7]
189         i += 9
190
191 def get_content(self): # get content of the current task
192     if self.program_mode == "full": # full mode
193         return self.data[self.current_task_id]
194     else: # task mode
195         return {k: v for k, v in self.data[self.current_task_id].items() if "unsuggested" not in
196
197
198 def move(self): # move to the next task
199     # Log the current task_id to the database
200     update_item_attribute(self.device_id, "past_task_id", self.current_task_id)
201     # move to the next task
202     self.current_task_id = self.get_next_task_id(self.current_task_id)
203     # send the current task_id to the database
204     update_item_attribute(self.device_id, "current_task_id", self.current_task_id)
205

```

```

211 ###
212 # main application
213 ###
214
215 @ask.launch
216 def start_task_intent(): # start, 1, 2, 3
217     # initialise a conversation
218     device_id = context.System.device.deviceId
219     conversation = Conversation("finish_meal_task_diagram", "finish_meal_corpus", args.difficulty, ar
220     conversation.set_current_task_id("start")
221     conversation.set_polite_score("0")
222
223     # move to the first task, 1, 2, 3
224     conversation.move()

```

```

226 # get render data
227 card_title = "task {}".format(conversation.current_task_id)
228 try: # full mode
229     card_content = conversation.get_content()["server_intent"]
230     card_content += "\n \n"
231     card_content += conversation.get_content()["task"]
232     card_content += "\n \n"
233     card_content += conversation.get_content()["suggested_speech"]
234     card_content += "\n \n"
235     card_content += conversation.get_content()["unsuggested_speech"]
236 except KeyError: # task mode
237     card_content = conversation.get_content()["server_intent"]
238     card_content += "\n \n"
239     card_content += conversation.get_content()["task"]
240
241 img_url = conversation.get_content()["img_url"]
242 speak_str = conversation.get_content()["server_speech"]
243
244 # update task to the next task
245 conversation.move()
246
247 # render
248 return question(speak_str).standard_card(title=card_title, text=card_content,
249                                         small_image_url=img_url, large_image_url=img_url)
250
251 @ask.intent('AMAZON.StopIntent')
252 def stop_intent(): # stop the conversation
253     # delete item from database
254     device_id = context.System.device.deviceId
255     delete_item(device_id)
256     return statement("Okay, good bye.")
257
258 @ask.intent("hint_intent")
259 def hint_intent():
260     # get the task_id from the database
261     device_id = context.System.device.deviceId
262     database_data = get_item(device_id)
263
264     # initialise a conversation
265     conversation = Conversation(database_data["task_diagram_filename"], database_data["corpus_filename"])
266     # set to past task_id
267     conversation.set_current_task_id(database_data["past_task_id"])
268
269     # get render data
270     card_title = "Hint for task {}".format(conversation.current_task_id)
271     card_content = "Try:"
272     card_content += "\n \n"
273     card_content += conversation.get_content()["suggested_speech"]
274
275     img_url = "https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/hint.png"
276     speak_str = "<speak><break time='2s' />{}</speak><br><speak><break time='2s' /></speak>".format(conversation.get_content()["suggested_speech"])
277
278     # rest to current task
279     conversation.set_current_task_id(database_data["current_task_id"])
280
281     # render
282     return question(speak_str).standard_card(title=card_title, text=card_content,
283                                         small_image_url=img_url, large_image_url=img_url)
284
285 @ask.intent("AMAZON.FallbackIntent")
286 def fallback_intent():
287     speak_str = "<speak><break time='2s' />{}</speak>".format("Sorry, I can't recognise it, can you re")
288     return question(speak_str)
289
290 @ask.intent("task_four_intent") # 4
291 def task_four_intent(speech_word):
292     # get the task_id from the database
293     device_id = context.System.device.deviceId
294     database_data = get_item(device_id)
295
296     # initialise a conversation
297     conversation = Conversation(database_data["task_diagram_filename"], database_data["corpus_filename"])
298     # set current task
299     conversation.set_current_task_id(database_data["current_task_id"])
300     # set current polite score and check/send the score to the database
301     conversation.set_polite_score(database_data["polite_score"])
302
303     # calculate new polite score and send to database
304     conversation.calculate_polite_score(speech_word)
305
306     # get render data
307     card_title = "task {}".format(conversation.current_task_id)
308     try: # full mode
309         card_content = conversation.get_content()["server_intent"]
310         card_content += "\n \n"
311         card_content += conversation.get_content()["task"]

```

```

306 # get render data
307 card_title = "task {}".format(conversation.current_task_id)
308 try: # full mode
309     card_content = conversation.get_content()["server_intent"]
310     card_content += "\n \n"
311     card_content += conversation.get_content()["task"]
312     card_content += "\n \n"
313     card_content += conversation.get_content()["suggested_speech"]
314     card_content += "\n \n"
315     card_content += conversation.get_content()["unsuggested_speech"]
316 except KeyError: # task mode
317     card_content = conversation.get_content()["server_intent"]
318     card_content += "\n \n"
319     card_content += conversation.get_content()["task"]
320
321 img_url = conversation.get_content()["img_url"]
322 speak_str = conversation.get_content()["server_speech"]
323
324 # update task to the next task
325 conversation.move()
326
327 # render
328 return question(speak_str).standard_card(title=card_title, text=card_content,
329                                          small_image_url=img_url, large_image_url=img_url)
330
331 @ask.intent("task_five_intent") # 5
332 def task_five_intent(speech_word):
333     # get the task_id from the database
334     device_id = context.System.device.deviceId
335     database_data = get_item(device_id)
336
337     # initialise a conversation
338     conversation = Conversation(database_data["task_diagram_filename"], database_data["corpus_filename"])
339     # set current task
340     conversation.set_current_task_id(database_data["current_task_id"])
341     # set current polite score and check/send the score to the database
342     conversation.set_polite_score(database_data["polite_score"])
343
344     # calculate new polite score and send to database
345     conversation.calculate_polite_score(speech_word)
346
347     # get render data
348     card_title = "task {}".format(conversation.current_task_id)
349     try: # full mode
350         card_content = conversation.get_content()["server_intent"]
351         card_content += "\n \n"
352         card_content += conversation.get_content()["task"]
353         card_content += "\n \n"
354         card_content += conversation.get_content()["suggested_speech"]
355         card_content += "\n \n"
356         card_content += conversation.get_content()["unsuggested_speech"]
357     except KeyError: # task mode
358         card_content = conversation.get_content()["server_intent"]
359         card_content += "\n \n"
360         card_content += conversation.get_content()["task"]
361
362     img_url = conversation.get_content()["img_url"]
363     speak_str = conversation.get_content()["server_speech"]
364
365     # update task to the next task
366     conversation.move()
367
368     # render
369     return question(speak_str).standard_card(title=card_title, text=card_content,
370                                             small_image_url=img_url, large_image_url=img_url)
371
372 @ask.intent("task_six_intent") # 6
373 def task_six_intent(speech_word):
374     # get the task_id from the database
375     device_id = context.System.device.deviceId
376     database_data = get_item(device_id)
377
378     # initialise a conversation
379     conversation = Conversation(database_data["task_diagram_filename"], database_data["corpus_filename"])
380     # set current task
381     conversation.set_current_task_id(database_data["current_task_id"])
382     # set current polite score and check/send the score to the database
383     conversation.set_polite_score(database_data["polite_score"])
384
385     # calculate new polite score and send to database
386     conversation.calculate_polite_score(speech_word)
387
388     # get render data
389     card_title = "task {}".format(conversation.current_task_id)
390     try: # full mode
391         card_content = conversation.get_content()["server_intent"]
392         card_content += "\n \n"
393         card_content += conversation.get_content()["task"]
394         card_content += "\n \n"
395         card_content += conversation.get_content()["suggested_speech"]
396         card_content += "\n \n"
397         card_content += conversation.get_content()["unsuggested_speech"]

```

```

397     card_content += conversation.get_content()["unsuggested_speech"]
398 except KeyError: # task mode
399     card_content = conversation.get_content()["server_intent"]
400     card_content += "\n \n"
401     card_content += conversation.get_content()["task"]
402
403 img_url = conversation.get_content()["img_url"]
404 speak_str = conversation.get_content()["server_speech"]
405
406 # update task to the next task
407 conversation.move()
408
409 # render
410 return question(speak_str).standard_card(title=card_title, text=card_content,
411                                         small_image_url=img_url, large_image_url=img_url)
412
413 @ask.intent("task_end_intent") # end
414 def end_task_intent(speech_word):
415     # get the task_id from the database
416     device_id = context.System.device.deviceId
417     database_data = get_item(device_id)
418
419     # initialise a conversation
420     conversation = Conversation(database_data["task_diagram_filename"], database_data["corpus_filename"])
421     # set current task
422     conversation.set_current_task_id(database_data["current_task_id"])
423     # set current polite score
424     conversation.set_polite_score(database_data["polite_score"])
425
426     # calculate new polite score and send to database
427     conversation.calculate_polite_score(speech_word)
428
429     # get render data
430     card_title = "task {}".format(conversation.current_task_id)
431     polite_score = conversation.polite_score
432     card_content = conversation.check_polite_score() + "! \n \n"
433
434     if conversation.check_polite_score() == "polite":
435         card_content += "The server enjoyed to serve you."
436         card_content += "\n \n"
437         card_content += "Enjoy your meal and have a nice day!"
438         img_url = "https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/postive_feedback.jpg"
439     else:
440         card_content += "The server tried his/her best to serve you, it's always good to show more."
441         card_content += "\n \n"
442         card_content += "Try to be more reciprocal and more conversational next time."
443         img_url = "https://s3.eu-west-2.amazonaws.com/echo.learn.image.bucket/negative_feedback.jpg"
444     speak_str = conversation.get_content()["server_speech"]
445
446     # update task to the next task
447     conversation.move()
448     # delete item from database
449     delete_item(device_id)
450
451     # render
452     return statement(speak_str).standard_card(title=card_title, text=card_content,
453                                             small_image_url=img_url, large_image_url=img_url)
454
455 @ask.intent("task_seven_intent") # 7
456 def task_seven_intent(speech_word):
457     # get the task_id from the database
458     device_id = context.System.device.deviceId
459     database_data = get_item(device_id)
460
461     # initialise a conversation
462     conversation = Conversation(database_data["task_diagram_filename"], database_data["corpus_filename"])
463     # set current task
464     conversation.set_current_task_id(database_data["current_task_id"])
465     # set current polite score and check/send the score to the database
466     conversation.set_polite_score(database_data["polite_score"])
467
468     # calculate new polite score and send to database
469     conversation.calculate_polite_score(speech_word)
470
471     # get render data
472     card_title = "task {}".format(conversation.current_task_id)
473     try: # full mode
474         card_content = conversation.get_content()["server_intent"]
475         card_content += "\n \n"
476         card_content += conversation.get_content()["task"]
477         card_content += "\n \n"
478         card_content += conversation.get_content()["suggested_speech"]
479         card_content += "\n \n"
480         card_content += conversation.get_content()["unsuggested_speech"]

```

```

480         card_content += conversation.get_content()["unsuggested_speech"]
481     except KeyError: # task mode
482         card_content = conversation.get_content()["server_intent"]
483         card_content += "\n \n"
484         card_content += conversation.get_content()["task"]
485
486     img_url = conversation.get_content()["img_url"]
487     speak_str = conversation.get_content()["server_speech"]
488
489     # update task to the next task
490     conversation.move()
491
492     # render
493     return question(speak_str).standard_card(title=card_title, text=card_content,
494                                             small_image_url=img_url, large_image_url=img_url)
495
496 @ask.intent("task_eight_intent") # 8
497 def task_eight_intent(speech_word):
498     # get the task_id from the database
499     device_id = context.System.device.deviceId
500     database_data = get_item(device_id)
501
502     # initialise a conversation
503     conversation = Conversation(database_data["task_diagram_filename"], database_data["corpus_filename"])
504     # set current task
505     conversation.set_current_task_id(database_data["current_task_id"])
506     # set current polite score and check/send the score to the database
507     conversation.set_polite_score(database_data["polite_score"])
508
509     # calculate new polite score and send to database
510     conversation.calculate_polite_score(speech_word)
511
512     # get render data
513     card_title = "task {}".format(conversation.current_task_id)
514     try: # full mode
515         card_content = conversation.get_content()["server_intent"]
516         card_content += "\n \n"
517         card_content += conversation.get_content()["task"]
518         card_content += "\n \n"
519         card_content += conversation.get_content()["suggested_speech"]
520         card_content += "\n \n"
521         card_content += conversation.get_content()["unsuggested_speech"]
522     except KeyError: # task mode
523         card_content = conversation.get_content()["server_intent"]
524         card_content += "\n \n"
525         card_content += conversation.get_content()["task"]
526
527     img_url = conversation.get_content()["img_url"]
528     speak_str = conversation.get_content()["server_speech"]
529
530     # update task to the next task
531     conversation.move()
532
533     # render
534     return question(speak_str).standard_card(title=card_title, text=card_content,
535                                             small_image_url=img_url, large_image_url=img_url)
536
537 @ask.intent("task_nine_intent") # 9
538 def task_nine_intent(speech_word):
539     # get the task_id from the database
540     device_id = context.System.device.deviceId
541     database_data = get_item(device_id)
542
543     # initialise a conversation
544     conversation = Conversation(database_data["task_diagram_filename"], database_data["corpus_filename"])
545     # set current task
546     conversation.set_current_task_id(database_data["current_task_id"])
547     # set current polite score and check/send the score to the database
548     conversation.set_polite_score(database_data["polite_score"])
549
550     # calculate new polite score and send to database
551     conversation.calculate_polite_score(speech_word)
552
553     # get render data
554     card_title = "task {}".format(conversation.current_task_id)
555     try: # full mode
556         card_content = conversation.get_content()["server_intent"]
557         card_content += "\n \n"
558         card_content += conversation.get_content()["task"]
559         card_content += "\n \n"
560         card_content += conversation.get_content()["suggested_speech"]
561         card_content += "\n \n"
562         card_content += conversation.get_content()["unsuggested_speech"]
563     except KeyError: # task mode
564         card_content = conversation.get_content()["server_intent"]
565         card_content += "\n \n"
566         card_content += conversation.get_content()["task"]
567
568     img_url = conversation.get_content()["img_url"]
569     speak_str = conversation.get_content()["server_speech"]
570
571

```

```

571     # update task to the next task
572     conversation.move()
573
574     # render
575     return question(speak_str).standard_card(title=card_title, text=card_content,
576                                               small_image_url=img_url, large_image_url=img_url)
577
578 @ask.intent("task_ten_intent") # 10
579 def task_ten_intent(speech_word):
580     # get the task_id from the database
581     device_id = context.System.device.deviceId
582     database_data = get_item(device_id)
583
584     # initialise a conversation
585     conversation = Conversation(database_data["task_diagram_filename"], database_data["corpus_filename"])
586     # set current task
587     conversation.set_current_task_id(database_data["current_task_id"])
588     # set current polite score and check/send the score to the database
589     conversation.set_polite_score(database_data["polite_score"])
590
591     # calculate new polite score and send to database
592     conversation.calculate_polite_score(speech_word)
593
594     # get render data
595     card_title = "task {}".format(conversation.current_task_id)
596     try: # full mode
597         card_content = conversation.get_content()["server_intent"]
598         card_content += "\n \n"
599         card_content += conversation.get_content()["task"]
600         card_content += "\n \n"
601         card_content += conversation.get_content()["suggested_speech"]
602         card_content += "\n \n"
603         card_content += conversation.get_content()["unsuggested_speech"]
604     except KeyError: # task mode
605         card_content = conversation.get_content()["server_intent"]
606         card_content += "\n \n"
607         card_content += conversation.get_content()["task"]
608
609     img_url = conversation.get_content()["img_url"]
610     speak_str = conversation.get_content()["server_speech"]
611
612     # update task to the next task
613     conversation.move()
614
615     # render
616     return question(speak_str).standard_card(title=card_title, text=card_content,
617                                               small_image_url=img_url, large_image_url=img_url)
618
619
620 # In[ ]:
621
622
623 if __name__ == '__main__':
624     if args.mode is not None:
625         if args.mode == "task":
626             args.mode = "task"
627         else:
628             args.mode = "full"
629         if args.difficulty == "easy":
630             args.difficulty = "easy"
631         else:
632             args.difficulty = "hard"
633
634         app.run(debug=True)
635     else:
636         print("please specify the mode before you run the program")
637
638

```

The System Usability Scale (SUS) questionnaire

© Digital Equipment Corporation, 1986.

1

1. I think that I would like to use this system frequently

Strongly disagree

Strongly agree

| | | | | |
|---|---|---|---|---|
| | | | | |
| 1 | 2 | 3 | 4 | 5 |

2. I found the system unnecessarily complex

| | | | | |
|---|---|---|---|---|
| | | | | |
| 1 | 2 | 3 | 4 | 5 |

3. I thought the system was easy to use

| | | | | |
|---|---|---|---|---|
| | | | | |
| 1 | 2 | 3 | 4 | 5 |

4. I think that I would need the support of a technical person to be able to use this system

| | | | | |
|---|---|---|---|---|
| | | | | |
| 1 | 2 | 3 | 4 | 5 |

5. I found the various functions in this system were well integrated

| | | | | |
|---|---|---|---|---|
| | | | | |
| 1 | 2 | 3 | 4 | 5 |

6. I thought there was too much inconsistency in this system

| | | | | |
|---|---|---|---|---|
| | | | | |
| 1 | 2 | 3 | 4 | 5 |

7. I would imagine that most people would learn to use this system very quickly

| | | | | |
|---|---|---|---|---|
| | | | | |
| 1 | 2 | 3 | 4 | 5 |

8. I found the system very cumbersome to use

| | | | | |
|---|---|---|---|---|
| | | | | |
| 1 | 2 | 3 | 4 | 5 |

9. I felt very confident using the system

| | | | | |
|---|---|---|---|---|
| | | | | |
| 1 | 2 | 3 | 4 | 5 |

10. I needed to learn a lot of things before I could get going with this system

| | | | | |
|---|---|---|---|---|
| | | | | |
| 1 | 2 | 3 | 4 | 5 |

Results for the System Usability Scale (SUS) questionnaire

SUS Scoring Sheet & Reliability Test
 SUS data (scored 1=Strongly disagree; 5=Strongly agree)
 Average score is 68

| Participants | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | SUS score (/100) | Grades |
|--------------|--------------------------|-------------|-------------------|---------|-------------------|---------|---------|-------------|----------|-----|------------------------|-------------|
| | I think that I found the | I found the | I thought I think | I found | I thought I found | I would | I found | I felt very | I needed | | | |
| 1 | 4 | 2 | 3 | 4 | 4 | 1 | 4 | 2 | 4 | 3 | 67.5 | D |
| 2 | 4 | 2 | 4 | 3 | 5 | 1 | 4 | 2 | 4 | 3 | 75 | C |
| 3 | 5 | 1 | 4 | 2 | 5 | 1 | 5 | 1 | 3 | 3 | 85 | B |
| 4 | 4 | 2 | 3 | 3 | 4 | 2 | 5 | 1 | 4 | 5 | 67.5 | D |
| 5 | 4 | 1 | 4 | 2 | 4 | 1 | 5 | 1 | 3 | 3 | 80 | B |
| 6 | 4 | 1 | 4 | 3 | 5 | 2 | 4 | 2 | 5 | 4 | 75 | C |
| 7 | 4 | 2 | 4 | 2 | 4 | 1 | 2 | 2 | 3 | 3 | 67.5 | D |
| 8 | 3 | 2 | 2 | 4 | 5 | 1 | 4 | 3 | 2 | 3 | 57.5 | F |
| | | | | | | | | | | | Average score | 71.875 |
| | | | | | | | | | | | Standard deviat | 8.634441003 |

Interview questions for the evaluation

| |
|---|
| Q1 Have you learned anything from the interaction process? In which aspect of English? |
| Q1 你在和系统交互的过程中有学到任何东西吗? 哪一方面呢? |
| Q2 What is the most memorable sentence/expression that you have learned? |
| Q2 你学到的印象最深的句子或者表达是什么? |
| Q3 Which mode is better? Full sentence mode or task only mode, or a combination? |
| Q3 那一个模式比较好? 显示句子的模式还是任务模式? 还是两者混合起来用? |
| Q4 Next time you go to the restaurant, are you aware of using these polite expressions? |
| 下一次你去餐厅的时候, 你是否知道去用你今天学到的礼貌用语? |
| Q5 Would you use it (the implemented system) again? |
| Q5 你会再次用它吗? |
| Q6 Would you want to see this being implemented for other situations as well? |
| Q6 你是否希望这个系统能帮助你学习其他场景的用语? |

Summary of results from the interview

Interviewee 1, 2, 5, 6 are old students

Interviewee **3, 4, 7, 8** are new students

| Questions | Shorted responses |
|-----------|---|
| 1 | <p>(interviewee 1) Yes. Use of politeness expressions.</p> <p>(interviewee 2) Yes. I learned a lot of authentic expressions.</p> <p>(interviewee 3) Yes. It helped me a lot with how to behave politely in the restaurant. The sentence comparison makes me aware that what I used to say is inappropriate.</p> <p>(interviewee 4) Yes. Polite language use, and authentic situational expressions. Sometimes direct translation does not convey the exact meaning. I found that I used a lot of wrong expression in the past, e.g. "checkout".</p> <p>(interviewee 5) Yes. Authentic expressions.</p> <p>(interviewee 6) Yes. Polite expressions and other authentic expressions</p> <p>(interviewee 7) Yes. Pronunciation, new words (e.g. dressing) and polite expression "Can I..."</p> <p>(interviewee 8) Yes. Polite and other authentic expressions.</p> |
| 2 | <p>(interviewee 1) Initiating talks when entering the restaurant "under the name of".</p> <p>(interviewee 2) The pronunciation of "spaghetti" and use "overcooked" to describe something taste bad.</p> <p>(interviewee 3) "box it up", I really do not know that before.</p> <p>(interviewee 4) "Cheer" means thank you.</p> |

| | |
|---|---|
| | <p>(interviewee 5) “what do you like on the menu?”, “what do you like on the menu?”, unlike other polite expressions, it is very friendly.</p> <p>(interviewee 6) “box it up”</p> <p>(interviewee 7) “what do you like on the menu?”, it sounds natural.</p> <p>(interviewee 8) “Can I...” for request and the word “dressing” to describe the sauce on the salad.</p> |
| 3 | <p>(interviewee 1) Task. It makes me think about the appropriate language use. If I do not know how to answer it, I can use hint, which makes me memorise it profoundly.</p> <p>(interviewee 2) Task. It makes me more memorable when the system points it out that I was using the wrong (non-native) expression, and then asked me to correct it by giving the correct one.</p> <p>(interviewee 3) Mix. The first one is less cognitive demanding and makes me to familiarise with the expressions. The second one enables me to memorise the expression, especially when I am using hint.</p> <p>(interviewee 4) Mix. I can familiarise the context and materials in the first turn and then memorise them in the second turn when I am practicing.</p> <p>(interviewee 5) Mix. In the first round, I can read the sentence; in the second round I organise the sentence based on my memory.</p> <p>(interviewee 6) Full. I think the task mode is effective but demanding, as I have to organise the words in my own. When I got it wrong, it makes me feel less confident, but in full mode, I can practice without too much effort.</p> <p>(interviewee 7) Task. The task gives me more freedom to try, if it does not work, then I will use hint, which this process can makes me memorise better.</p> <p>(interviewee 8) Full. It makes me aware of which one is appropriate. Also, sometimes I cannot understand the speaker’s utterance. The sentences helped me to guess the meaning of the utterance.</p> |
| 4 | <p>(interviewee 1) Yes, I will use “Can I have” instead of “I want”, but I probably will forget the exact wording.</p> <p>(interviewee 2) Sort of, but I already used these polite expressions in my daily life.</p> <p>(interviewee 3) Yes. I will not say “I want” to make the order again.</p> <p>(interviewee 4) Yes. I will use “excuse me” instead of “hello”.</p> <p>(interviewee 5) Yes. Especially on how to compliant politely, I can use the term “I’m sorry, but I think”.</p> <p>(interviewee 6) No, because I already learned these expressions from Youtube videos. The context-related words provided are much more helpful.</p> <p>(interviewee 7) Yes.</p> <p>(interviewee 8) Yes. I will be more confident in real situations, and use “Can I” instead of “I want”.</p> |
| 5 | <p>(interviewee 1) Yes. When I forget, I can use it to look up the sentence that I want to say quickly, because the conversations are short.</p> <p>(interviewee 2) Yes, to look up the sentence that I forget.</p> |

| | |
|---|---|
| | <p>(interviewee 3) Yes. I will probably refresh my memory when I need to use them in similar situations.</p> <p>(interviewee 4) Yes. To check if I still remember.</p> <p>(interviewee 5) Yes, because I think I might forget the exact sentence after a day or so.</p> <p>(interviewee 6) Yes, for short review when I need it.</p> <p>(interviewee 7) Yes, for checking words that I do not know.</p> <p>(interviewee 8) Yes, but I would prefer web or app interface. The pure voice-interaction interface is hard more me to learn how to use it.</p> |
| 6 | <p>(interviewee 1) Yes. That will be useful if it applied to more scenes, such as banking, travel and medical conditions.</p> <p>(interviewee 2) Yes, it is useful in the contexts that I am unfamiliar with (e.g. describing symptoms).</p> <p>(interviewee 3) Yes. I would like to see that. It is like a personal interactive tutor.</p> <p>(interviewee 4) Yes. It can help me to learn more situational languages.</p> <p>(interviewee 5) Yes. I would like to use it for daily events.</p> <p>(interviewee 6) Yes. I would like it to have more scenes and with more conversational variations, so that the interaction can be more authentic.</p> <p>(interviewee 7) Yes, because it is make me to familiarise the interaction process in different social contexts.</p> <p>(interviewee 8) Yes, as a guide for reviewing scenario-based words and sentences, and it saves me a lot of time to look up the dictionary.</p> |