

CHAPTER II

REVIEW OF RELATED LITERATURE

Several theories and key concepts have been proposed to better understand these terms used in the context of this study.

2.1 Communicative Language Teaching (CLT)

CLT is an approach to teaching languages that emphasizes the importance of being able to communicate with others as the primary goal of learning a language (Celce-Murcia et al., 2014). Communicative competence is one of the important concepts being brought up in CLT. Communicative competence refers to the ability to communicate in a language (Celce-Murcia & Heinle, 2001).

2.1.1 Communicative competence

The model of communicative competence has changed over time. Celce-Murcia's (2007) model used in this study comprises socio-cultural, discourse, linguistic, formulaic, interactional, and strategic competence.

1) Sociocultural Competence

Socio-cultural competence is the pragmatic ability to communicate effectively within a social and cultural environment. This involves an understanding of how languages vary in relation to socio-cultural norms.

2) Discourse Competence

Discourse competence is concerned with the interconnection of a sequence of utterances, written words, and possibly phrases that together make a text a meaningful whole.

3) Linguistic Competence

Linguistic competence entails the acquisition of four distinct categories of knowledge: phonological, lexical, morphological, and syntactic.

4) Formulaic Competence

Formulaic competence refers to the ability to use the prefabricated and fixed chunks of language that speakers frequently employ in daily conversations.

5) Interactional Competence

Interactional includes three sub-components: actional, conversational, and non-verbal/paralinguistic competence.

a.) Actional competence

Action competence is the ability to carry out commonly occurring speech acts and sets of speech acts that are associated with interactions such as information sharing, interpersonal communication, the expression of opinions and feelings, the resolution of problems (such as blaming and regretting), and the planning of future events (hopes, goals, promises, predictions, etc.) in a target language.

b.) Conversational competence

Conversational competence is rooted in the conversational turn-taking system, including how to open and close conversations, establish and change topics, get, hold, and relinquish the floor, interrupt, and collaborate backchannel.

c.) Non-verbal/paralinguistic competence

The non-verbal competence includes kinesics (body language), proxemics (use of space by interlocutors), haptic behavior (touching), and non-linguistic utterances with interactional import.

6) Strategic Competence

Strategic competence refers to certain habits or thought processes that students employ to aid in the acquisition of a second language.

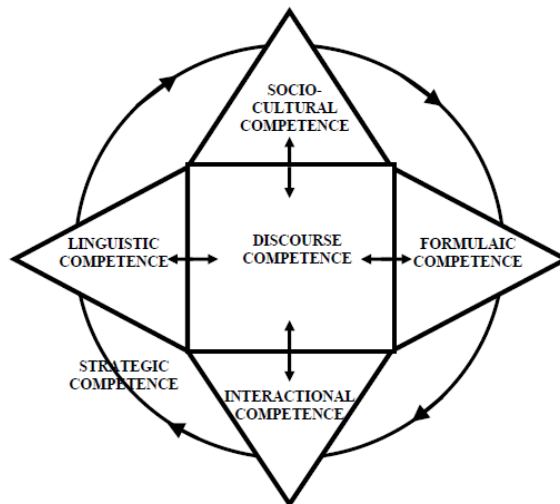


Figure 1 Celce-Murcia's (2007) Communicative Competence Model

2.1.2 Teacher and students' roles in CLT

Brown (2001) sets out a few characteristics of communicative language teaching, which include student and teacher roles.

1) Teacher's roles

Rather than being an all-knowing source of knowledge, the role of the teacher is to serve as a facilitator and guide for students. In the classroom, the teacher acts as an empathetic coach who values the students' linguistic development. Students are encouraged to use language to generate meaning by conversing with each other and with the teacher in a natural way.

2) Students' roles

Students are in charge of their learning. However, teacher-centered activities are not sacrificed in favor of student-centered, cooperative, and collaborative learning.

2.2 Conversation rules and structures

Benseler and Schulz (1981) use the term 'conversation' to refer to the meaningful spoken exchange of ideas, information, or feelings. Although conversation skills can take various forms, speakers, and settings, all conversation follows certain patterns (Dörnyei & Thurrell, 1994). Every conversation should have the following patterns or structures:

1) Openings

Openings in a part of conversation consist of different sequences of greetings and introductions and might also include questions, comments, social lines, and complaints.

2) Turn-taking

Turn-taking includes rules and signals to determine who talks, when, and how long and avoid people talking together simultaneously.

3) Interrupting

Interrupting includes a set of phrases that are often used to sort out some problem of understanding. While a certain amount of interruption is tolerated, many interruptions in the wrong context could be considered offensive.

4) Topic-shift

Topic-shift is a bunch of expressions that signal changes in topics being discussed in a conversation. This shift consists of bringing new topics to the table and returning to previous ones.

5) Adjacency pairs

These include pairs of expressions (such as questions, invitations, requests, apologies, and compliments) and their appropriate responses.

6) Closings

Closings include a series of closing statements used to create the ground for the ending of a conversation.

2.2.1 Conversation partners

A conversation, by its very definition, must involve two or more persons. The word "exchange" indicates that conversation is at least a two-way process. It is not a monologue, a speech, an oral report, or a recitation. There must be a sender and a receiver in order for ideas, information, or feelings to be communicated. But if one person does all the sending and the receiver makes no meaningful verbal response, there is no exchange, thus no conversation (Benseler & Schulz, 1981).

Conversational agents, chatbots, and dialogue systems for foreign language training have been developed as stand-alone conversation partners (Höhn, 2019). Conversational systems of different complexity and communication modalities (text, voice, video) have been employed to help students to practice conversation. Even simple chatbots not explicitly designed for communication with second language students have been tested as conversation practice helpers with a concluding recommendation to use them for advanced or keen students. In order to make chatbots more useful for a broader language learner audience, researchers and developers introduced additional functionality such as spelling-error correction and knowledge of the learner's native language, which should facilitate communication for beginners.

2.2.2 Conversational strategies

There is a general convention prescribing things such as how conversations should be open or closed or even strategies that help clarify

what the other speaker means. These strategies are called conversational strategies. According to Dörnyei and Thurrell (1994), conversational strategies can be defined as: 'an invaluable means of dealing with communication trouble spots, such as not knowing a particular word or misunderstanding the other speaker.'

Because the traditional textbook responses are invariably short and direct, ESL students who have memorized "classic" responses to certain English questions often have difficulty maintaining a conversation with native English speakers. Such students need instruction and practice in developing and sustaining everyday conversations (Benseler & Schulz, 1981).

Dörnyei and Thurrell (1994) highlight several categories of conversational strategies as follows:

1) Message adjustment or avoidance

This entails adjusting messages to the speaker's level of ability by gently modifying or lowering the message, deviating from the point, or even omitting the message entirely.

2) Paraphrase

Paraphrasing in conversation is used to describe or illustrate unknown objects and actions with words that have already been known.

3) Approximation

Approximating is when an alternative word is used to represent the meaning of the target word as precisely as possible, for example, using ship instead of sailing boat, vegetable instead of turnip, or buses instead of public transportation.

4) Appeal for help

Appeal for help is done by asking inquiries to the communication partner, such as 'What's the term for...?' or 'How do you say...?' to retrieve the word that needs to be elicited.

5) Asking for repetition

Asking for repetition is usually done when speakers fail to hear or follow certain parts of the conversation. This can be done by asking questions like 'Pardon?' or 'Sorry, what was the last word?'

6) Asking for clarification

Clarification can be asked when something is unclear, using questions such as, 'What do you mean?' or 'What are you saying/trying to say?'

7) Interpretive summary

This involves rewording the other speaker's statement to ensure that message comes across correctly, such as 'You mean ...?' 'If I've understood correctly,' or 'So, are you saying that...?'

8) Checking other's understanding

This includes checking if the other speaker understands what has been said by asking questions such as, 'Okay?' 'Is that clear?' or 'Are you with me?' or whether or not the other speaker is listening to what has been said, for instance, 'Are you listening?' 'Did you hear what I said?' or 'Are you still there?'

9) Use of fillers/hesitation devices

When in difficulty, fillers/hesitation devices are used to fill pauses, stall, and give more time to think. This includes phrases like 'Well,' 'Now let me see,' or 'The thing is....'

2.3 Modern conversational agents (CAs)

The term conversational agents (CAS) is often used interchangeably with 'chatbots' or any other terms, such as 'chatterbots,' 'dialog systems,' 'companions,' 'virtual assistant,' 'artificial conversation entities,' 'interactive agents,' 'smart bots' and 'digital assistant' (Adamopoulou & Moussiades, 2020; Feine et al., 2019). Some researchers also define chatbots as one category of conversational agents (CAs) (Radziwill & Benton, 2017). This distinguishes chatbots from other types of conversational agents like embodied conversational agents (ECA), i.e., a type of conversational agents (CAs) manifested in animals, avatars, humans, or humanoid robots.

With this somewhat confusing terminology, researchers have some common grounds with a few minor details that might be quite distinguishing. Dale (2016) uses the term 'chatbots' to refer to any software application that engages in a dialog with a human using natural language. This states that chatbots or

conversational agents (CAs) comprise various computer programs that provide dialog interactions between the users and the systems using the natural language. Another definition is proposed by McTear (2017), describing chatbots as software systems that produce simulated conversations in which the human user inputs some text and the chatbot responds. This definition emphasizes the particular definition of chatbots that they simulate the conversation in the forms of text inputs and responses and might not resemble real human facial expressions or provide any expressive features (that might be found in ECAs).

Radziwill and Benton (2017) closely describe chatbots as software systems that receive natural language input to engage in goal-directed behavior, while embodied conversational agents serve similar purposes only they mimic interactions with real people. Radziwill and Benton (2017) stress that chatbots and ECAs are quite different in terms of how they enhance the experience of real human interactions. Regardless, these two terms share some common features when it comes to functionality. A further definition, which seems to elaborate the features of chatbots, has been proposed by Hussain et al. (2019), who describe chatbots as 'a computer program, designed to interact with users using natural language or text in a way that the user thinks he is having a dialogue with a human.'

Accordingly, as definitions mentioned above, it is safe to say that both chatbots and embodied conversational agents (CAs) allow the users to engage in natural language conversation. Therefore, throughout this paper, the term 'conversational agents' is used in its broadest sense to describe software systems or

programs that are developed to engage in natural language conversations with humans.

2.3.1 The development of conversational agents (CAs)

The technology of conversational agents (CAs) has been around since the 1960s, starting with the creation of the first of its kind, ELIZA. Joseph Weizenbaum developed ELIZA at the Massachusetts Institute of Technology (MIT). Early conversational agents, such as ELIZA, relied on keyword matching and minimal context identification and lacked the ability to maintain a conversation (Hussain et al., 2019). Over the past few years, this technology has become way more sophisticated with machine learning. Machine learning approaches are integrated to make these agents more adaptive to different input styles and new tasks (Radziwill & Benton, 2017). Conversational agents (CAs) have become more developed in these several aspects, including:

- 1) Real-time automatic recognition of any speaker's natural language performance in any context,
- 2) Understanding the meaning of the utterances,
- 3) The presentation of contextually meaningful replies, and
- 4) Continuous maintenance of a conversational dialogue with a speaker

(Ekman, 2021)

It is worth noting that the main distinction between chatbots and humans is the sense of empathy, as chatbots are less capable of

conversational comprehension than humans. However, progress is being made, and chatbots are becoming more aware of their interlocutor's emotions (Adamopoulou & Moussiades, 2020).

This development of conversational agents has led to numerous applications of this technology in many instances. Chatbots are helpful in a variety of fields, including education, business and e-commerce, fitness, and entertainment (Adamopoulou & Moussiades, 2020; Shawar & Atwell, 2010)

2.3.2 Natural Language Processing (NLP)

As recognized by the definitions earlier, 'natural language' is a significant component of chatbots. Khurana et al. (2017, cited in Adamopoulou & Moussiades, 2020) state chatbots use Natural Language Processing (NLP) and sentiment analysis to communicate in human language by text or oral speech with humans or other chatbots. The use of Natural Language Processing (NLP) in chatbots is essential to help them to be more accurate and efficient. To respond appropriately to a user's utterance, a conversational agent must interpret the utterance, determine the actions that should be taken in response to the utterance, and perform the actions, which may include replying with text, presenting information, and performing system actions such as writing information to a database (Lester et al., 2004)

2.3.3 Classifications of chatbots

Hussain et al. (2019) argue that there are two broad chatbot categories, including task-oriented and non-task-oriented chatbots. Task-oriented chatbots are designed for a particular task and are set up to have short conversations, usually within a closed domain. Unlike task-oriented chatbots, non-task-oriented chatbots can simulate a conversation with a person and seem to perform chit-chat for entertainment purposes in open domains.

Hussain et al. (2019) also state that chatbots could be classified into various categories based on several criteria, including mode of interaction, knowledge domain, usage, and design techniques (response generation method). Similarly, Adamopoulou and Moussiades (2020) categorized chatbots into some classes, including the knowledge domain, communication relationships, goals, design techniques, the extent of human interventions, permissions, and communication channels.

This study classifies chatbots based on several criteria, drawing from these classification systems (Adamopoulou & Moussiades, 2020; Hussain et al., 2019). Chatbots may be classified in the knowledge domain into domain-specific or open-domain. Chatbots that operate in more than one domain are cross or open-domain chatbots. In contrast, domain-specific chatbots can respond only to questions concerning a particular knowledge domain.

Chatbots can also be classified based on the mode of interactions into text-based or voice/speech-based. Chatbots can be divided based on how the users interact with them. Some chatbots are designed to accept text-based interactions, while others allow speech-based interactions.

Each chatbot has a different set of goals, but mainly chatbots are classified in terms of the goals into informative, chat-based/conversational, and task-based chatbots. Informative chatbots are the ones that allow the users to communicate to get specific information stored in a fixed source. Chat-based/Conversational chatbots hold a natural conversation with the user like a real person would do. Finally, Task-based chatbots handle different functions, such as room booking, and are excellent at requesting information and responding to the user appropriately.

Finally, chatbots can be categorized by their communicational competence. Chatbots that offer booking services in restaurants, airlines, or search in FAQ without being a friendly companion belong to interpersonal chatbots. Intrapersonal chatbots are close companions that live in the user's domain and understand his needs. Finally, inter-agent chatbots provide communication with other chatbots.

2.3.4 Previous studies on chatbots for language learning

The use of conversational agents in language learning has been addressed many times in literature. The previous work of research has reported various results. Some earlier studies have focused on the provision of keyword-based chatbots. Several lines of evidence suggest that the

dialogs between the human and the computer in these chatbots are mostly very short because the user finds the responses from the computer are mostly repeated and irrelevant to the topics and context, and the program does not understand the language at all (Jia, 2003).

In contrast to Jia (2003), Ellis et al. (2005) argue that chatbots are helpful for language students in supporting the metacognitive goals of self-assessment and reflection. He also states that the systems are good for giving students formative feedback. Similarly, Kerry et al. (2009) found that conversational agent systems have been proposed to offer conversation practice for language students. The study suggests that chatbots allow users to repeat the same materials as often as they want. They also state that chatbots give students the opportunity to use varying language structures and vocabulary.

Alongside these benefits, as stated, chatbots trained on a corpus have been proposed to allow conversation practice on specific domains. The study also reveals that students gain more confidence in their ability to answer correctly. Kerry et al. (2009), like Ellis et al. (2005), maintains that chatbots allow students to engage in reflection and get better at self-assessment.

In a study that set out to assess the accuracy and felicity of the chatbots' answers at the grammatical level, Coniam (2014) found that chatbots are generally able to provide grammatically acceptable answers,

with three chatbots returning acceptability figures in the 90% range. However, the study also stated that if the meaning is taken into account, chatbots often provide meaningless, nonsensical answers, and the accuracy rate for the joint categories of grammar and meaning falls below 60%. Höhn (2019) argues that the trouble sources in meaning negotiation sequences are normal expressions in the foreign language that are not completely clear to the learner and need an explanation.

Therefore, as suggested, chatbots need to cope with these troubles by giving corrective feedback in the forms of conversational recast (a reformulation of a non-native speaker's utterance in order to resolve a communication problem), repetition (repetition of a problematic expression marked with interrogative intonation), clarification request (signals a misunderstanding or a communication problem by a phrase like "I don't understand"), explicit correction (a clear identification of an error with a reformulation of the learner's expression and an explicit presentation of the correct form), didactic recast (a reformulation of the learner's utterance in the absence of a communication problem), metalinguistic clue (a metalinguistic statement aimed at eliciting a self-correction), elicitation (enforces a self-correction, and may often take the form of a content question), and paralinguistic signal a non-verbal elicitation of the correct form. Corrective feedback is acknowledged as an important tool in language instruction to help the learner notice the produced deviations and give the learner a chance to improve (Höhn, 2019).

In addition to this, the study suggests that speech recognition techniques have become more mature in recent years and can be successfully used for conversations with students. The study also states that chat interaction has advantages for language students because the students can re-read the chat history, have more time for production and comprehension, and even use other tools to deal with troubles in production or comprehension, which is not possible in oral conversation.

Adamopoulou and Moussiades (2020) state that the crucial difference between chatbots and humans is the perception of empathy, as chatbots are less capable of conversational understanding than humans are. However, progress is being made, and chatbots are gradually becoming more fully aware of their interlocutor's feelings.

Petrović and Jovanović (2020) have given a broader perspective to language learning in their survey of conversational agents for learning foreign languages, which explicitly suggests that these technologies are capable of helping language students gain and maintain language proficiency at any time, in any place. It is stated that chatbots are becoming part of this paradigm shift as a cost-effective means to deliver such services. Chatbots also encourage positive working habits concerning language, such as repetition and follow-up exercises outside the classroom. In the same vein, Borsley (1990), in his book *Language Machines*, predicted that computers would be used for language students to give flexibility when it

comes to choosing students' pace of learning, method, vocabulary, and interests.

Similarly, he also states that the technology can also be used to assist teaching in the classroom without ever replacing the teachers. Teachers may be able to concentrate on productive tasks, while language practice takes place between individuals and their computers (Borsley, 1990).

Drawing on another beneficial application of chatbots in language learning, as stated by Petrović and Jovanović (2020), the main benefits are ease of use and accessibility. The text or voice-based interfaces on chatbots make them more intuitive and available in any place and at any time. The survey also reveals that these dialog systems encourage the motivation and engagement of their users.

2.4 Theoretical framework

As mentioned in the previous chapter, this study sets out to understand EFL students' perspectives on using chatbots in fulfilling students' communicative competence. Conversational competence is essential to establishing interactional and overall communicative competence in students. Without having the knowledge of how a conversation would perform in the real world, students might face a few problems when they interact with other speakers in a conversation, which sometimes results in a conversation breakdown. Once the knowledge of conversation rules, structures, and strategies is acquired, students would likely be more fluent and be able to manage and maintain how the conversation is performed

as something bad might happen. Other important components of communicative competence include socio-cultural, discourse, linguistic, formulaic, interactional, and strategic competence.

To acquire this competence, students should engage in actual conversation practice. However, many obstacles come along the way of this learning process. First, students may not have many opportunities to practice their conversation skills as their time in the classroom is very limited. Second, students might not understand the conversation turn-taking system because of this infrequent conversation practice or the lack of a conversation partner. Third, students may face psychological problems such as anxiety that might hinder their learning progress (Öztürk & Gürbüz, 2014). Textbook formulaic expressions, which are useful for retaining fluency, are often short and direct (Benseler & Schulz, 1981). In conclusion, there is a need to find a new alternative platform to improve conversational competence.

Modern conversational agents (CAs), such as chatbots, might be an alternative option to solve these problems. These dialog systems might bring many benefits to students. First, they facilitate the conversation practice that those students need conveniently within a safe environment. Second, chatbots are designed to mimic natural human interactions, allowing them to understand the conversation turn-taking system. Third, conversational agents provide many formulaic expressions that are useful for students to respond to and maintain a conversation. Chatbots could also be used as a complementary platform for students to practice without ever replacing the teachers.

Taken together, modern conversational agents (CAs) have tremendous potential for assisting students with their conversation practice. As a result, the study incorporates student perspectives in order to comprehend concerns about the use of chatbots in the fulfillment of communicative competence. The theoretical framework is represented in this flowchart to illustrate this better:

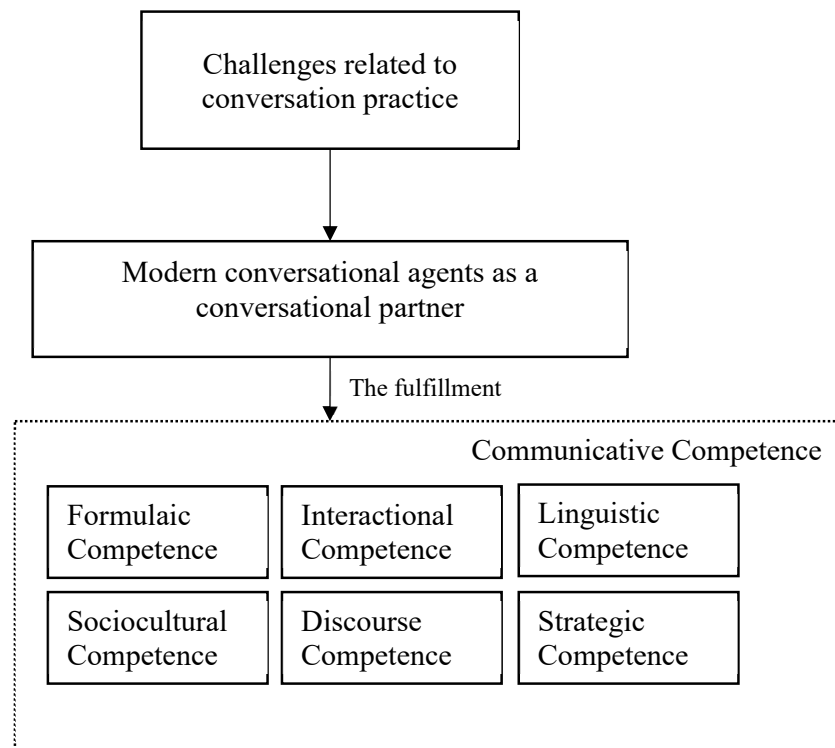


Figure 2 Flowchart of the Theoretical Framework