



Investigation of Chinese undergraduate EFL Learners' Online Communication Strategies

Investigación de las estrategias de comunicación en línea de los estudiantes chinos de inglés como lengua extranjera

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ABSTRACT

With the outbreak of the Covid-19 pandemic, online learning has gained popularity throughout the world in recent years. How EFL learners communicate with their teachers and classmates online has sparked great interest with a view to enhancing their performance in online learning. This study aimed to explore the online communication strategies of Chinese undergraduate EFL learners and how they vary according to gender and English proficiency. The quantitative method was adopted in this study. The participants were 120 undergraduate EFL learners from a public university in China. The questionnaire on online communication strategies, consisting of 30 items, was developed. Cronbach alpha and factor analysis were conducted to evaluate the reliability and validity of the questionnaire. The descriptive statistics and independent T-tests were used for data analysis. The study reached the conclusion that the most commonly used online communication strategies are Reduction strategies, followed by Focus on Form, Social-cultural, Paralinguistic, Compensatory, and Interactional strategies. Male and female learners differed significantly in the use of reduction strategies, focus on form strategies, social-cultural strategies, and paralinguistic strategies. Furthermore, there is a significant difference in the use of all types of online communication strategies between good learners and poor learners, with good learners applying more online communication strategies than poor learners. The study indicates that teachers should raise students' awareness of online communication strategies that are conducive to online communication and learning. Training on online communication strategies should be provided with a view to enhancing students' communication competence as well as English proficiency.

KEYWORDS Online communication strategies; undergraduate EFL learners; gender; language proficiency; inventory of online communication strategies.

RESUMEN

Con el estallido de la pandemia de Covid-19, en los últimos años, el aprendizaje en línea ha ganado popularidad en todo el mundo. La forma en que los estudiantes de inglés como lengua extranjera se comunican con sus profesores y compañeros de clase en línea ha despertado un gran interés con propósito a mejorar su desempeño en el aprendizaje en línea. Este estudio tuvo como objetivo explorar las estrategias de comunicación en línea de los estudiantes chinos de licenciatura en

Inglés como Lengua Extranjera y cómo varían según el género y el dominio del inglés. Para este estudio, se adoptó el método cuantitativo. Los participantes son 120 estudiantes universitarios en Inglés como Lengua Extranjera de una universidad pública en China. Se desarrolló el cuestionario sobre estrategias de comunicación online, compuesto por 30 preguntas. Se aplicaron el análisis factorial y alfa de Cronbach para evaluar la confiabilidad y validez del cuestionario. Para el análisis de los datos se utilizó la estadística descriptiva y la prueba T independiente. El estudio llegó a la conclusión de que las estrategias de comunicación online más utilizadas son las de Reducción, seguidas de las de Enfoque en la Forma, Socioculturales, Paralingüísticas, Compensatorias e Interaccionales. Se concluyó igualmente, que existe una diferencia significativa entre estudiantes masculinos y femeninos en el uso de estrategias de reducción, estrategias de enfoque en la forma, estrategias socioculturales y estrategias paralingüísticas. Agregando además que, existe una diferencia significativa en el uso de todo tipo de estrategias de comunicación en línea, entre los estudiantes diligentes y no tan diligentes. Y de ello se deduce que, los estudiantes diligentes aplican más estrategias de comunicación en línea a diferencia de los no diligentes. El estudio indica que los profesores deberían concientizar a los estudiantes sobre las estrategias de comunicación en línea que favorecen la comunicación y el aprendizaje en línea. Se debe proporcionar capacitación sobre estrategias de comunicación en línea con objetivos a mejorar la competencia comunicativa de los estudiantes, así como su dominio del inglés.

PALABRAS CLAVE Estrategias de comunicación en línea; estudiantes universitarios de Inglés como Lengua Extranjera; género; dominio del idioma; inventario de estrategias de comunicación en línea.

1. INTRODUCTION

1.1. Online learning environment

With the advancement of technology and the emergence of the internet, distance education made its debut. It bears a history of almost two centuries (Albrahim, 2020), and this period manifests crucial changes in the way people acquire knowledge and the way they communicate while studying. Numerous forms of communication have been embraced by our society over the years. Among them, online learning has gained popularity since the 1980s. For an extended period, discussions have revolved around integrating technology into education, seeking avenues to incorporate various scientific advancements into the learning environment (Daniela, 2021). Reports indicated an enormous increase in online graduate and undergraduate programs in higher education institutions (Alam et al., 2022; Albrahim, 2020; Castro & Tumibay, 2021), with the rise of rapid movement from traditional face-to-face programs to fully online instruction at the graduate level (Sun et al., 2023). The ongoing crisis triggered by the Covid-19 pandemic has provided an additional impetus for technological advancements, particularly in guaranteeing access to education, a pivotal domain within society. Considering the unstable epidemiological situation around the world, online learning may be prevalent for a long time, and thus, a study of this particular form of education will continue to be relevant in the coming years (Danchikov et al., 2021).

Over recent years, China has issued sequentially several plans to encourage educational development and informatization, such as the “Thirteenth Five-year Plan for National Educational Development” (State Council of China, 2017) “Thirteenth Five-year Plan for Education Informatization” (Ministry of Education of China, 2016) and “Education Informatization 2.0 Action Plan” (Ministry of Education of China, 2018). The

goals of these plans involve: schools are to build a green, safe, and controllable personal space with comprehensive functions and distinctive features for all the teachers and students, facing all levels of education; to establish a sustainable development mechanism for education informatization; to realize full coverage of teachers with teaching apps, students with learning apps, and schools with digital campus apps; to build a comprehensive platform for “Internet + education”; to explore the new mode of talent cultivation and educational service under this “internet +” circumstance; as well as to accelerate the construction of a learning society where every person can learn at any place at any time. It can be seen that great emphasis has been put on the development of online learning or internet technology.

According to Social Constructivism, learners actively contribute to the construction of their knowledge (Schreiber & Valle, 2013), and learning primarily takes place within social and cultural contexts. Assisted by technology-based communications, online learning has moved from the instructional to the constructivist type of education. Many scholars have investigated smart pedagogy in online learning and concluded that many digital tools could enhance effective communication, which was crucial for optimal online learning performance (Daniela, 2021; Luque-Sánchez & Montejó-Gámez, 2023). Therefore, how teachers and students can achieve effective online communication to optimize their learning performance is vitally important. This is where online communication strategies come into play.

1.2. Online communication strategies

The term “communication strategies” (CS) was coined in 1972 by Selinker to describe the strategies or skills EFL learners used to solve problems in communication. Educational communication refers to communication that occurs in the classroom or educational settings, which can be further divided into two subcategories – Verbal (oral and written) and Non-verbal (facial expressions, vocal cues, eye contact, postures, head movement, and mannerisms). The online setting is unique in that it limits the application of non-verbal cues. For example, students may not be able to see each other or sometimes, even the teacher, leading to less eye contact and facial expressions. There is also less physicality, impeding education intimacy between teacher-students and students-students. Also, fewer face-to-face social interactions may hinder communication between the interlocutors (Aljohani & Hanna, 2021; Aziza, 2021). As a result, online communication demands students to apply different CS more proficiently to cope with problems in expressing their ideas for comprehension and acquisition of knowledge via online platforms.

Hung and Higgins (2016) explored how learners employ CS in both text-based and video-based synchronous computer-mediated communication (SCMC) settings and concluded that learners use different strategies in those two environments. They came up with an inventory of CS for SCMC, grouping CS according to their functions and classifying them into six categories: Interactional Strategies, Focus-on-form Strategies, Compensatory Strategies, Sociocultural Strategies, Paralinguistic Strategies and Reduction Strategies (Table 1, the description of each strategy is in Appendix 1). Meanwhile, online platforms offer various models or functions to supplement or enhance the negotiation of meaning, such as font, colour, audio, video, emoticons, images and so on. In the context of this study, how Chinese students use these functions for online communication is still unknown.

TABLE 1. Hung & Higgins's (2016) Classification of Communication Strategies in SCMC

COMMUNICATION STRATEGIES	SUBCATEGORIES
Interactional strategies (To repair or manage conversational discourse)	<ul style="list-style-type: none"> • Request for clarification • Confirmation check • Comprehension check • Direct request for help • Indirect request for help • Input elicitation strategies • Feigning understanding • Inferential strategies • Framing • Verbal strategy markers • Omission • Time-gaining strategies ...
Compensatory strategies (To solve language problems of expression through manipulating available language knowledge)	<ul style="list-style-type: none"> • Circumlocution • Approximation • Use of all-purpose words • Literal translation • Self-rephrasing ...
Reduction strategies (To tackle language problems of expression by changing the intended message)	<ul style="list-style-type: none"> • Message abandonment • Message replacement
Focus on form strategies (To attend to target-like forms)	<ul style="list-style-type: none"> • Self-correction • Meta-talk • Own accuracy check ...
Sociocultural strategies (To sustain a collaborative and friendly interaction)	<ul style="list-style-type: none"> • Social formula • Code-switching
Paralinguistic strategies (To solve problems of expression or facilitate language problems and to compensate for the modality restrictions)	<ul style="list-style-type: none"> • Mime • Use of text or symbols to display the effects of intonation • Use of emoticons • Punctuation • Substitution

1.3. Research problem and need for the study

It is a general consensus that the primary aim of language learning is to cultivate learners' communicative competence (Ahmed & Pawar, 2018b), one of whose key ingredient is strategic competence (Canale & Swain, 1980). Li (2019) announced that new problems were present in teacher-student communication and interaction when classes moved from offline physical space to online virtual space. Bui et al. (2021) investigated the benefits and drawbacks of online EFL learning and reported EFL students' difficulties in interaction and concentration. Guo and Asmawi (2023) also conducted a study on communication between teachers and students during online learning and found that students suffered from isolation and misunderstanding

owing to a lack of nonverbal cues and communication skills or strategies, leading to communication problems. Therefore, a good command of online CS can be of great value to these students and improve their quality of online communication.

Research on the use of these strategies has been extensively conducted in face-to-face communication (Ahmad et al., 2022; Ahmed & Pawar, 2018a; Radmehr, 2020; Zhao & Intaraprasert, 2013). However, only a few studies have investigated online CS where there is an apparent lack of nonverbal cues or social interactions that may hinder communication with the interlocutors (Aljohani & Hanna, 2021; Aziza, 2021; Hung & Higgins, 2016; Parcon & Reyes, 2021; Shih, 2014; Smith, 2003). According to Social Information Processing (SIP) Theory, learners with computer-mediated communication rely more on interactive strategies than in face-to-face settings, and they tend to adjust their CS for effective interaction. Thus, it is assumed that the usage of CS in online settings is different from those in face-to-face settings. Exploring effective CS for foreign language learning in online settings is essential to enhance and optimize the performance and quality of online learning.

Previous research on online CS was conducted qualitatively and with fewer participants, focusing on an in-depth analysis of types and reasons for the choice of online CS, and thus, their conclusions varied. For instance, Smith (2003) investigated the link between CS and task types in SCMC, concluding that learners employed diverse CS with an emphasis on discourse, pragmatic, and paralinguistic strategies. The findings revealed that learners whose English proficiency is at an intermediate-low level used more substitution, framing, fillers, and politeness strategies. Non- and para-linguistic cues such as gesture, gaze, and intonation were reported to be absent in CMC, which led to a heavy use of substitution strategy.

Aziza (2021) explored the gender effects on online CS with a qualitative study. The participants were four male and four female Grade Eight students from the English department. Data were collected through online conversations and interviews. Results indicated that fillers, hesitation devices, and gambits were the most frequently used strategies for both genders, while circumlocution was the least. Female students demonstrated a higher frequency of using CS compared to their male counterparts.

Parcon and Reyes (2021) investigated oral CS in online classroom discussions. Recorded classroom discussions and semi-structured interviews were conducted for data collection. They claimed that students used 18 oral CS based on Dornyei and Scott's (1997) classification in online classroom discussions. They also attributed the learners' choice of CS to the following factors: lack of confidence, shortage of linguistic knowledge, speaking anxiety, failure to comprehend ideas, and other external factors.

Gender and language proficiency have been influential yet controversial factors in the choice of CS. Some research indicated that females use more communication strategies than males (Wang, 2008; Zhao & Intaraprasert, 2013), while some studies concluded that male learners apply more strategies than female students (Mahardika et al., 2014; Yaman & Özcan, 2015). Others found no significant difference in the strategies used (Lai, 2010; Kaivanpanah et al., 2012). Likewise, some studies reported significant variance in learners' choice of CS based on their language proficiency (Alawi, 2016; Aziz et al., 2018), while some studies found no relation to their language proficiency (Uztosun & Erten, 2014; Yaman & Özcan, 2015).

It is thus, evident from the above discussion that previous studies focused on a qualitative aspect using different tasks with fewer participants and resulted in inconsistent findings with regard to the areas of study.

Therefore, this study aims to fill the gaps by exploring the CS students often use in online learning from a quantitative aspect and how they vary in gender and language proficiency.

1.4. Research questions

RQ 1: What is the status quo of the use of online communication strategies among Chinese undergraduate EFL learners?

RQ 2: Is there any significant difference in the Chinese undergraduate EFL learners' use of online communication strategies in terms of gender?

RQ 3: Is there any significant difference in the Chinese undergraduate EFL learners' use of online communication strategies in terms of English proficiency?

2. MATERIAL AND METHOD

2.1. Participants

This study adopts a quantitative design to fulfill the research goals and objectives. The random sampling method is adopted with 120 undergraduate students randomly selected from those taking online English courses in a public university. The students were between 18 - 22 years old. The population was from various programs: Architecture, Electronic Communication and Rail Transit. They had online English courses for around 6-8 hours per week from Sept. 2021-Feb.2023. Table 2 manifests their demographic information. English proficiency is measured by the score of the latest final exam. Scores above 80 are good, 60-80 are average, and below 60 are poor.

TABLE 2. Participant demographic information

		NUMBER OF THE STUDENTS	PERCENTAGE OF THE STUDENTS
Gender	Male	56	46.67%
	Female	64	53.33%
Age Group	18-23	120	
English Proficiency	Good > 80	9	7.5%
	Average 60-80	101	84.17%
	Poor < 60	10	8.33%
Language of Instruction	English	120	

2.2. Instrument

A survey instrument was designed based on Hung and Higgins's (2016) Communication Strategy Inventory for SCMC to get the reported frequency of the usage of different online CS. This inventory was relatively newly developed, and was originally targeted at Asian students and SMC, which were of similar background to

those in this study. There are 30 items in total - 8 items for interactional strategies, 3 for reduction strategies, 4 for compensatory strategies, 7 for paralinguistic strategies, 4 for focus on form strategies, and 4 for sociocultural strategies. A Likert-type scale was used for all items on the instrument. Respondents were asked to rate each item against a five-point scale. The proposed responses for the questionnaire are: 1 = Almost never; 2 = Rarely; 3 = Sometimes; 4 = Quite often; 5 = Most of the time.

2.2.1. Reliability of the instrument

Cronbach's alpha was tested to analyze the instrument reliability using SPSS20. The results (Table 3) showed that the whole standardized Cronbach's alpha was 0.970, while the standardized Cronbach's alpha for each construct (Interactional, Compensatory, Reduction, Focus on form strategies, Sociocultural strategies, Paralinguistic) were 0.927, 0.876, 0.836, 0.857, 0.865, 0.918 respectively. All the Cronbach's Alpha were above 0.8, indicating a very high inner consistency of the instrument and that the survey was highly reliable.

TABLE 3. Cronbach's Alpha for the questionnaire

	CRONBACH'S ALPHA	STANDARDIZED CRONBACH'S ALPHA	NUMBER OF ITEMS
Whole	0.970	0.970	30
Interactional strategies	0.926	0.927	8
Compensatory strategies	0.876	0.876	4
Reduction strategies	0.836	0.836	3
Focus on form strategies	0.856	0.857	4
Sociocultural strategies	0.864	0.865	4
Paralinguistic strategies	0.916	0.918	7

2.2.2. Content validity and face validity of the instrument

Content validity is the extent to which the questionnaire accurately and adequately represents the specific content domain it is intended to measure. Face validity is the clarity, difficulty, relevance, and sensitivity of a test to its intended audience (Allen et al., 2023). The survey items were written based on Hung and Higgins's (2016) Inventory of communication strategies and descriptions in the mode of SCMC, with reference to Nakatani's (2006) Oral Communication Strategy Inventory (OCSI). Considering the online environment, which tends to be absent of physical cues such as facial expression, hand gestures or eye contact, factors related to paralinguistic and social-cultural strategies had been modified accordingly based on a thorough review of relevant literature, and comments and feedback from relevant experts and observations by the researchers. Albrahim (2020), Thompson (2020), and other scholars offered some insights into CS in an online learning environment. Table 4 showed a detailed explanation of related strategies and their sources.

TABLE 4. Online communication strategies and their sources

COMMUNICATION STRATEGIES	DESCRIPTION	RESOURCES
Interactional Strategies		
Comprehension Check	I make comprehension checks to ensure the interlocutor understands what I want to say in online learning.	Hung & Higgins, 2016; Nakatani, 2006
Indirect Request for Help	I pause or hesitate to elicit help from the interlocutor in online learning.	Hung & Higgins, 2016
Inferential Strategies	I ask questions or give comments to previous content to see if I understand correctly in online learning.	Hung & Higgins, 2016
Inferential Strategies	I ask questions or give comments to previous content to elicit new information in online learning.	Hung & Higgins, 2016
Framing	I use “first, second, or let’s begin” to mark the beginning or transition of the topic in online learning.	Hung & Higgins, 2016
Verbal Strategy Markers	I Use verbal marking phrases such as “you know” or “kind of” to indicate the use of strategy or less accurate form in the target language in online learning.	Hung & Higgins, 2016
Time-gaining Strategies	I Use fillers such as “umm..., I think...” or repeating interlocutor’s words to fill pauses in order to maintain conversation at times of thinking in online learning.	Hung & Higgins, 2016
Verbal Strategies	I change my way of saying things according to the context in online learning.	Observation
Compensatory Strategies		
Circumlocution	I give examples or descriptions of the target object or action because I don’t know the exact words in online learning.	Hung & Higgins, 2016
Approximation	I use a single substitute term with which the target term shares semantic features in online learning. (eg. I use “fruit” to replace a specific type of fruit “Pomegranate”.)	Hung & Higgins, 2016
Use of All- purpose Words	I use “thing, this, that, stuff, do...” to replace specific words that I don’t know how to say in online learning.	Hung & Higgins, 2016
Replacement	I use images or emojis to replace words that I don’t know how to say in online learning.	Observation
Reduction Strategies		
Message abandonment	I leave a message unfinished because of language deficiency in online learning.	Hung & Higgins, 2016; Nakatani, 2006
Message replacement	I reduce the message and use simple expressions in online learning.	Nakatani, 2006
	I replace the original message with another message because of feeling incapable of executing my original intent in online learning.	Hung & Higgins, 2016;

Focus on form Strategies		
Self-correction	I correct myself when I notice that I have made a mistake in online learning.	Hung & Higgins, 2016; Nakatani, 2006
Own Accuracy Check	I rise my intonation to check if my expression is correct in online learning.	Hung & Higgins, 2016;
	I pay attention to grammar and word order during conversation in online learning.	Nakatani, 2006
	I notice myself using an expression that fits a rule that I have learned in online learning.	Nakatani, 2006
Social-cultural Strategies		
Social Formula	I use fixed patterns for greetings, apologies, and leave-takings, etc., such as “sorry to interrupt you” and “nice to meet you” in online learning.	Hung & Higgins, 2016;
Code-switching	I use first-language words in the target language speech for purposes such as to show familiarity or to negotiate, such as “litchi (荔枝)” and “typhoon (台风)”.	Hung & Higgins, 2016;
Cultural awareness	I respect and consider cultural differences during online communication.	Albrahim, 2020
	I tried to seek out information on an unfamiliar culture before initiating cross-cultural communication.	Thompson, 2020
Paralinguistic Strategies		
Mime	I use gestures and body movements to express a message in online learning.	Hung & Higgins, 2016;
Use of Emoticons	I use emoticons or keyboard symbols to display facial expressions and emotional states in online learning.	Hung & Higgins, 2016;
Punctuation	I use punctuation extensively such as using a question mark to indicate a rising intonation or using it alone to show a confused state, using exclamation to express surprise, or using ellipsis points to indicate the intention to shift turns or topics or to mean “no comment” in online learning.	Hung & Higgins, 2016;
Rhythm and Intonation	I pay attention to my rhythm and intonation when talking online.	Nakatani, 2006
Font, Colors, and Effects	I emphasize the important points using font, colors, and effects in online lessons.	Albrahim, 2020
Images, Pictures, and Graphs	I use images, pictures, and graphs effectively to express my points in online learning.	Observation
Music and Sound Effects	I use music, sound effects, and other resources to emphasize my point in online learning.	Observation

The items were proofread by two professors in this field. They discussed the degree to which each item was representative of a construct’s concept and reached a consensus. The content validity was established. The Chinese version was also provided when distributing the survey. The translation was done by the researchers and verified by two Chinese professors in English translation and one American teacher who studied Chinese

for five years. The questionnaire was distributed to six students to test its face validity. A focus group interview was conducted with the students to collect information about whether the items were understandable, relevant and easy to answer. Items were rephrased based on their feedback to improve the face validity.

2.2.3. Construct validity

Structural equation modeling (SEM) is highly useful in assessing intricate theoretical connections among numerous variables, particularly in the realms of social science and second language (L2) studies (Hair & Alamer, 2022). There are two primary methods for structural equation modeling (SEM): covariance-based structural equation modeling (CB-SEM) and partial least squares structural equation modeling (PLS-SEM), which is also known as composite-based structural equation modeling. CB-SEM demands stricter assumptions, such as multivariate normality, and larger sample sizes when employing the maximum likelihood (ML) estimator. In contrast, the PLS estimator operates without assuming data normality by default (Hair & Alamer, 2022). The main reasons for the popularity of PLS-SEM are its capability to estimate very complex models and its relaxed data requirements. PLS-SEM is also effective in providing solutions with smaller sample sizes compared to CB-SEM due to its iterative process. In PLS-SEM, the optimization alternates between refining the measurement model and the structural model until the primary goal of enhancing prediction, rather than model fit, is met (Hair & Alamer, 2022). For CB-SEM, it is recommended to have 300 and above participants to be adequate for factor analysis (Taherdoost et al., 2014), but PLS-SEM can be applied with fewer samples. In addition, Hair et al. (2019) stated, “Researchers should select PLS-SEM when the analysis is concerned with testing a theoretical framework from a prediction perspective; when the structural model is complex and includes many constructs, indicators and/or model relationships” (p. 5). PLS-SEM can be used for confirmatory composite analysis, which is a combination of exploratory and confirmatory analysis to assess the model (Hair et al., 2020). The main analysis is based on total variance, which is an extension of principal components analysis. Considering the above merits, this study used PLS-SEM method.

According to Hair and Alamer (2022), several steps need to be taken to assess the construct validity. First, estimate the loadings and their p-value. Table 6 showed the factor loadings for each item calculated using SmartPLS 4.

TABLE 6. Factor Loading for Each Item

	IS	ComS	RS	FS	SoCS	ParaS
IS9	0.737					
IS12	0.754					
IS15	0.753					
IS16	0.833					
IS17	0.815					
IS18	0.763					
IS19	0.808					
IS20	0.788					

	IS	ComS	RS	FS	SoCS	ParaS
IS12	0.83					
ComS22		0.812				
ComS23		0.794				
ComS24		0.861				
ComS28		0.728				
RS30			0.674			
RS31			0.815			
RS32			0.880			
FS34				0.759		
FS35				0.767		
FS36				0.733		
FS37				0.835		
SoCS39					0.839	
SoCS40					0.790	
SoCS42					0.745	
SoCS43					0.770	
ParaS44						0.732
ParaS45						0.818
ParaS46						0.793
ParaS47						0.787
ParaS48						0.803
ParaS49						0.763
ParaS50						0.796

Note: P < 0.01

Factor loading reveals the intensity and direction of the association between each variable and the latent factor(s) identified during factor analysis. It indicates how effectively an item captures the essence of the underlying construct (Vinzi et al., 2010). Hair and Alamer (2022) suggested that a factor loading value exceeding 0.5 is considered acceptable, and when it reaches 0.7, or higher, it is regarded as good for a single indicator. Additionally, it is important to assess the significance of the factor loading estimates. As shown in Table 6, all items except 1 were above 0.7 and the 1 item was between 0.5-0.7, and they were statistically significant at .01.

Second, estimate indicator reliability. Indicator reliability can be gauged by squaring the individual indicator loadings. A value of .50 is deemed satisfactory, suggesting that at least 50% of the variance in a single indicator can be explained by the associated latent variable. This means the factor loading for each item should be above 0.707. In the above table, only one item was below 0.707, but considering the composite reliability and theoretical structure, it was kept for future analysis.

Third, examine construct internal consistency reliability. This is evaluated through Cronbach’s alpha (see Table 3) and Composite Reliability (CR) (see Table 7). The commonly accepted cut-off value for both measures is .70 (Hair et al., 2017). However, if the reliability estimate surpasses .95, it suggests that individual items might be redundantly measuring the same aspect of the construct.

Fourth, obtain the average variance extracted (AVE). It assesses the degree to which items within a particular construct exhibit positive correlations and share a significant amount of variance. The rule of thumb dictates that values equal to or greater than .50 indicate convergent validity of the construct. Mathematically, a value of .50 implies that the mean values of the items’ factor loadings are .708 or higher, signifying a sufficiently meaningful relationship between the variances of the items and their assumed construct. Table 7 showed the composite reliability and the AVE values.

TABLE 7. Construct Validity of Questionnaire on Online Communication Strategies

CONSTRUCTS	COMPOSITE RELIABILITY (rho_a)	COMPOSITE RELIABILITY (rho_c)	AVERAGE VARIANCE EXTRACTED (AVE)
IS	0.927	0.926	0.612
ComS	0.880	0.877	0.640
RS	0.847	0.835	0.631
FoFS	0.859	0.857	0.600
SoCS	0.868	0.866	0.619
ParaS	0.919	0.918	0.616

From the table above, it can be seen that the average variance extracted for all factors is above 0.5, and the composite reliability is above 0.7, which show that the questionnaire has good construct validity (Hair & Alamer, 2022).

2.3. Data Collection and Analysis

The survey link was sent to relevant students via WeChat with a participant information sheet stating the purpose of the study and their consent was obtained online. There was a statement, “By clicking ‘I agree’ below, you are indicating that you are at least 18 years old, have read and understood this consent form, and agree to participate in this research study.” in the online survey. Those who agreed proceeded to the survey questions. The participants were informed that their participation was completely voluntary. The study was conducted in accordance with the University Research Ethics Guidelines and is approved by the University Research Ethics Committee. It took two weeks to get 123 responses; upon eliminating invalid answers, there were 120 valid responses. Data analysis was carried out using SPSS 20. Descriptive statistics were displayed. The normality of the data was tested, and independent sample T-test was used.

3. RESULTS

In order to answer RQ1: What is the status quo of the use of online communication strategies among undergraduate EFL learners, descriptive statistics were presented in the following Table 8.

TABLE 8. Descriptive Statistics of Online Communication Strategies of Undergraduate Students

DESCRIPTIVE STATISTICS					
	N	Minimum	Maximum	Mean	Std. deviation
IS	120	1.00	5.00	2.8927	.82061
ComS	120	1.00	5.00	3.0542	.88651
RS	120	1.00	5.00	3.2167	.84532
FS	120	1.00	5.00	3.1979	.83067
SoCS	120	1.00	5.00	3.1958	.84340
PS	120	1.00	5.00	3.1821	.84098
N valid	120				

It can be seen from the table that learners used Reduction strategies most frequently, with the highest mean score (3.2167), followed by Focus on Form (mean score 3.1979), Social-cultural (3.1958), Paralinguistic (3.1821), Compensatory (3.0542) and Interactional strategies (2.8927).

In order to answer RQ 2: Is there any significant difference in the Chinese undergraduate EFL learners' use of online communication strategies in terms of gender, Independent Sample T-test was conducted to compare the CS of male and female students. Prior to T-test, the Normality of the data was first tested. Table 9 showed the results and the descriptive statistics of the use of online communication strategies of male and female students.

TABLE 9. The Descriptive Statistics and the Normality of the Data

	Gender	N	Mean	Std. Error Mean	Skewness		Kurtosis	
			Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
IS	Male	56	2.7991	.11310	.273	.319	-.422	.628
	Female	64	2.9746	.09938	.219	.229	.748	.590
ComS	Male	56	2.9643	.13202	.176	.319	-.219	.628
	Female	64	3.1328	.09834	-.040	.299	.597	.590
RS	Male	56	3.0179	.11441	.185	.319	.607	.628
	Female	64	3.3906	.10031	.158	.299	-.270	.590
FS	Male	56	3.0313	.12205	.344	.319	-.077	.628
	Female	64	3.3438	.09090	.170	.299	.109	.590
SoCS	Male	56	3.0179	.12018	.108	.319	.221	.628
	Female	64	3.3516	.09559	-.189	.299	.358	.590
ParaS	Male	56	2.9694	.11951	.516	.319	.166	.628
	Female	64	3.3683	.09373	.223	.299	.446	.590

According to George and Mallery (2010), the values for skewness and kurtosis between +2 and -2 were considered acceptable to prove normal distribution. Meanwhile, Hair et al. (2010) proposed that if skewness was between +2 and -2 and kurtosis was between +7 and -7, it can be interpreted that the data was normally distributed. It can be seen from Table 9 that the Skewness and Kurtosis of each category of strategies were between +1 and -1, which suits the standards aforementioned. Thus it is safe to say that the data to be analyzed is normally distributed. Table 10 displayed the results of the independent T-test.

TABLE 10. Independent Sample T-Test

	T value	P value	Mean Difference	Std. Error Difference
IS	-1.171	.244	-.17550	.14992
ComS	-1.039	.301	-.16853	.16216
RS	-2.461	.015	-.37277	.15149
FS	-2.085	.039	-.31250	.14990
SoCS	-2.197	.030	-.33371	.15190
PS	-2.658	.009	-.39892	.15011

From Table 9, it could be drawn that female students used online CS slightly more frequently than male students, and Table 10 displayed that the P value of reduction strategies, focus on form strategies, social-cultural strategies, and paralinguistic strategies were 0.015, 0.039, 0.030, and 0.009, respectively (< 0.05), manifesting that male and female students varied significantly in using all these four strategies.

To answer RQ 3: Is there any significant difference in the Chinese undergraduate EFL learners' use of online communication strategies in terms of English proficiency, another independent Sample T-test was conducted. Prior to T-test, the Normality of the data was first tested. Table 11 showed the results and descriptive statistics of the use of online communication strategies of good and poor students.

TABLE 11. The Descriptive Statistics and the Normality of the Data

	Gender	N	Mean	Std. Error Mean	Skewness		Kurtosis	
			Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
IS	Good	9	3.7639	.28901	.173	.717	-1.462	1.400
	Poor	10	2.0500	.20000	.138	.687	-.148	1.334
ComS	Good	9	3.3611	.37986	.200	.717	-.252	1.400
	Poor	10	2.2500	.27386	-.180	.687	-1.102	1.334
RS	Good	9	3.5185	.23643	1.152	.717	1.354	1.400
	Poor	10	2.3333	.26294	-.698	.687	-.709	1.334
FS	Good	9	3.7778	.30174	.515	.717	-1.664	1.400
	Poor	10	2.3750	.21810	-.575	.687	.173	1.334
SoCS	Good	9	3.9722	.29001	.142	.717	-1.682	1.400
	Poor	10	2.5500	.26562	-.150	.687	.392	1.334
ParaS	Good	9	3.9365	.33001	-.394	.717	-1.082	1.400
	Poor	10	2.5857	.26807	-.047	.687	1.037	1.334

It can be seen that the Skewness and Kurtosis of each category of strategies were between +2 and -2, which can be considered acceptable to prove normal distribution (George & Mallery, 2010). Table 12 displayed the results of the independent T-test.

TABLE 12. Independent Sample T-Test

	T value	P value	Mean Difference	Std. Error Difference
IS	4.960	.000	1.71389	.34553
ComS	2.408	.028	1.11111	.46134
RS	3.322	.004	1.18519	.35672
FS	3.824	.001	1.40278	.36684
SoCS	3.624	.002	1.42222	.39250
PS	3.204	.005	1.35079	.42153

From Table 11, it can be drawn that students with high English proficiency used more online CS than students with low English proficiency. According to Table 12, there is a significant difference in the use of all types of online CS: Interactional ($p=0.000 < 0.05$); Compensatory ($p=0.028 < 0.05$); Reduction ($p=0.004 < 0.05$); Focus on Form ($p=0.001 < 0.05$), Social-cultural strategies ($p=0.002 < 0.05$); and Paralinguistic strategies ($p=0.005 < 0.05$).

4. DISCUSSION

As shown in Table 8, students reported using Reduction strategies most frequently, followed by Focus on Form, Social-cultural, Paralinguistic, Compensatory, and Interactional strategies. The result can be attributed to several reasons: first, the students were non-English majors, and the university in this study was at a lower rank in the country. Therefore, the English proficiency of the students as a whole was wanting. Reduction strategies entail message abandonment and message replacement, which require little effort for explanation or interaction. Thus, it is understandable that students with lower English proficiency are in favor of using these strategies. This result echoes Alawi (2016) and Aziz et al. (2018), who concluded that learners with low proficiency tended to use more reduction strategies while learners who were more proficient in English tended to use more compensatory and interactional strategies. Alawi (2016) posited that learners' insufficient linguistic competence and proficiency often result in the frequent use of reduction strategies due to hesitancy and a tendency to give up easily (Santoso & Mandarani, 2021). Radmehr (2020) also reported that second-language learners might refrain from discussing topics for which they lack the necessary vocabulary or other language skills. Additionally, language learners may initially attempt to engage in conversation on a particular topic but abandon the effort midway upon realizing they lack the necessary language resources to finish their message. Second, Chinese English teachers also prefer focus-on-form instruction in both grammar and vocabulary teaching (Sun & Zhang, 2021). Teachers put great effort in grammar and vocabulary instruction, especially in middle and high school English courses. Thus, it is natural that students focus more on accuracy when they produce English output. This is in line with Santoso and

Mandarani (2021) and Idrus (2016) that learners used a lot of accuracy-oriented strategies to ensure the correctness of their oral English. Third, students have good cultural awareness (Guo & Asmawi, 2023; Zhou, 2022), and they are more proficient with fixed expression patterns, which they acquired at an early stage, such as nice to meet you, excuse me, and sorry to interrupt you. Besides, Chinese students are more respectful, and respect cultural difference, and social courtesy, which result in more frequent use of sociocultural strategies. Fourth, the online environment offers many functions to facilitate communication, including emojis, emoticons, fonts, colors, music, and so on. Students are willing to and familiar with the usage of these functions. This is consistent with Omar et al. (2012) and Shih (2014), who reported that students used paralinguistic strategies in online discussions. According to the New London Group, there are five modes for teaching multiliteracies: linguistic, visual, aural, spatial, and gestural. Apart from the linguistic mode, which emphasize language, other modes are related to paralinguistic strategies. The effective usage of these modes or paralinguistic strategies are beneficial to online communication, which in turn improves online learning performance. Besides, these paralinguistic strategies are also practical in presentations, which is a common task for university students. Last, compensatory and interactional strategies require more effort and language competence from the learners since they encompass strategies such as circumlocution, approximation, paraphrasing, inferential strategies, and request for clarification. It calls for a large quantity of vocabulary and interactions, which might be difficult for learners with limited English proficiency.

The above shows that learners resort to online CS when encountering difficulties in online EFL communication. They commonly use reduction strategies, indicating a lack of motivation in conducting English conversation and implying the learners' low English proficiency. Therefore, teachers should encourage students to use the target language to express themselves, and they can provide explicit training on online CS so that the students can better use these strategies to achieve their communication goals in an online environment.

Gender has been a popular variable in comparing CS, although the research results are often inconsistent. This study indicates that there is a significant difference in terms of gender in the use of online CS of undergraduate EFL students. The results echo Yaman and Özcan (2015), Zhao and Intaraprasert (2013), and Aziza (2021), who concluded that significant differences were found in the use of CS in terms of gender and females used more strategies than their male counterparts. This can be interpreted from the following aspects: men and women assume different social responsibilities and bear different social pressures. They chose different strategies resulting from the division of labor and power in society (Kaivanpanah et al., 2012). Females are more open to expressing themselves and more willing to use paralinguistic strategies to express their attitudes and feelings. Males seem more conservative, preferring simple talk, and tend to shy away from expressing themselves in an online environment (Aziza, 2021).

Language proficiency is believed to be a crucial indicator affecting the choice of CS (Alawi, 2016). This study showed that students with high English proficiency used more online CS than students with low English proficiency. There is a significant difference in the use of all types of online CS. The results are in line with previous studies which concluded that the learners' choice of strategies varied according to their English proficiency. Students with higher proficiency tended to use more CS (An & Wang, 2022; Panggabean & Wardhono, 2017). This may be due to students' motivation. Good students may be more motivated to

grasp opportunities to express themselves in English, resulting in more frequent use of CS. It also demonstrates that these students are inclined to employ more interactional and compensatory strategies, whereas those with lower English proficiency are apt to use more reduction strategies. This echoes Huang (2010), cited in Panggabean and Wardhono (2017), that students with higher language proficiency were inclined to utilize linguistic knowledge to express themselves and could choose suitable and effective strategies for communication. On the other hand, those with lower language proficiency tended to depend on knowledge or conceptual-based strategies and employed reduction strategies more frequently. In addition, high-proficiency learners try to get the message across through compensatory and interactional strategies, which are more effective in meaning negotiation and improving linguistic competence. Low-proficiency learners tend to use more reduction strategies, which are less effective in negotiations. Therefore, teachers should guide learners to employ more compensatory strategies rather than reduction strategies with the purpose of promoting learners' online English communication.

5. CONCLUSION

This study aims to explore the online communication strategies used by Chinese undergraduate students in an EFL context. The findings revealed that they used Reduction strategies most frequently, followed by Focus on Form, Social-cultural, Paralinguistic, Compensatory and Interactional strategies. There is a significant difference in the usage of online communication strategies by undergraduate students in terms of gender and language proficiency. Female students employed more of these strategies than their male counterparts, and good learners too applied more online communication strategies than poor learners.

This study offers a reliable and valid tool to assess online communication strategies in an EFL learning context. Second, it provided systematic and comprehensive online communication strategies conducive to effective communication online. It can be seen that various online communication strategies are at the learners' disposal to overcome difficulties in online communication. A good choice in the use of communication strategies among language learners can greatly assist in fostering the development of communicative skills (Garcés & Olivera, 2014). The research indicates that the application of communication strategies enabled students to achieve their communication goals despite having limited linguistic resources. This research may contribute to the instruction of communication strategies in language learning, specifically in teaching EFL. Teachers are advised to introduce communication strategies to their students, teaching and encouraging them to use these strategies appropriately. EFL learners are anticipated to apply communication strategies meaningfully and should also exhibit high motivation to initiate oral communication, enhance participation in interactions, address communication challenges, and effectively achieve communicative goals by conveying accurate messages.

5.1. Limitations and future lines of research

There are certain limitations in this study. Firstly, the sample is not large enough; therefore, future research can use a larger sample to test the validity and reliability of the instrument. Second, this study only used the survey method, so there is a lack of thorough perception of students in terms of their use of online

communication strategies. Thus, future research may use a mixed-mode approach (both survey and interview). Third, future research should focus more on how to develop online communication strategies through various activities or policy implementations.

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7. REFERENCES

- Ahmed, S., & Pawar, S. V. (2018a). A study of communication strategies employed by Radfan College EFL students in their classroom interactions. *New Academia: An International Journal of English Language, Literature and Literary Theory*, 8(3), 163-176.
- Ahmed, S., & Pawar, S. V. (2018b). Communicative competence in English as a foreign language: Its meaning and the pedagogical considerations for its development. *The Creative Launcher*, 2(6), 267-277.
- Ahmad, S. N., Rahmat, N. H., Shahabani, N. S., & Khairuddin, Z. (2022). Discovering The Relationship between Communication Strategies and Fear of Oral Presentation among University Students. *International Journal of Academic Research in Business & Social Sciences*, 12(9), 1185-1212. <https://doi.org/10.6007/ijarbss/v12-i9/14859>
- Alam, M. S., Asmawi, A., Fatema, S., Ullah, M. M., & Azad, M. A. K. (2022). A Local Alternative to Global Wholesale Online Schooling during COVID-19: A Phenomenological Single-Case Study of a Standalone School in Bangladesh. *Education Research International*. <https://doi.org/10.1155/2022/6003710>
- Alawi, R. A. (2016). Communication strategies used by Omani EFL students. *Pyrex journal of English and literature*, 2(1), 1-11.
- Albrahim, F. A. (2020). Online Teaching Skills and Competencies. *TOJET: The Turkish Online Journal of Educational Technology*, 19(1), 9-20.
- Aljohani, N. J., & Hanna, B. E. (2021). 'I do not know what's that word in English, but I will tell you about my cousin': EFL learners' communication strategies in online oral discussion tasks. *The Language Learning Journal*, 51(2), 223-237. <https://doi.org/10.1080/09571736.2021.1989017>
- Allen, M. S., Robson, D. A., & Iliescu, D. (2023). Face validity: A critical but ignored component of scale construction in psychological assessment. *European Journal of Psychological Assessment*, 39(3), 153-156. <https://doi.org/10.1027/1015-5759/a000777>
- An, M. & Wang, Y. T. (2022). An Empirical Study on the use of English communication strategies among non-English undergraduate students. *Journal of Minzu Normal University of Xingyi*, (5), 111-118.
- Aziz, Z., Fata, I. A., & Balqis, S. (2018). "Wait, How Do I Say that in English?" Communication Strategies for English as a Foreign Language Learners. *Lingua Cultura*, 12(2), 149-154. <https://doi.org/10.21512/lc.v12i2.3745>
- Aziza, M. N. (2021). Gendered perspective on online communication strategies: A case on English department students. In *ELT Forum: Journal of English Language Teaching*, 10(2), 172-184. <https://doi.org/10.15294/elt.v10i2.39398>
- Bui, T. X. T., Ha, Y. N., Nguyen, T. B. U., Nguyen, V. U. T., & Ngo, T. C. T. (2021). A Study on Collaborative Online Learning among EFL Students in Van Lang University (VLU). *AsiaCALL Online Journal*, 12(3), 9-21.
- Castro, M. D. B., & Tumibay, G. M. (2021). A literature review: efficacy of online learning courses for higher education institution using meta-analysis. *Education and Information Technologies*, 26(2), 1367-1385. <https://doi.org/10.1007/s10639-019-10027-z>
- Canale, M., and Swain, M. (1980) Theoretical bases of communicative approaches to second language teaching and testing. *Applied Linguistics*, 1, 1-47.

- Danchikov, E. A., Prodanova, N. A., Kovalenko, Y. N., & Bondarenko, T. G. (2021). The potential of online learning in modern conditions and its use at different levels of education. *Linguistics and Culture Review*, 5(S1), 578-586. <https://doi.org/10.21744/lingcure.v5ns1.1442>
- Daniela, L. (2021). Smart pedagogy as a driving wheel for technology-enhanced learning. *Technology, Knowledge and Learning*, 26(4), 711-718. <https://doi.org/10.1007/s10758-021-09536-z>
- Dörnyei, Z. & Scott, M. L. (1997). Communication strategies in a second language: Definitions and taxonomies. *Language Learning*, 47(1), 173-210. <https://doi.org/10.1111/0023-8333.51997005>
- Garcés, A. Y. C., & Olivera, S. F. L. (2014). Communication strategies used by pre-service English teachers of different proficiency levels. *How Journal*, 21(1), 10-25. <https://doi.org/10.19183/how.21.1.12>
- George, D. & Mallery, M. (2010). *SPSS for Windows Step by Step: A Simple Guide and Reference*, 17.0 update (10a ed.). Pearson.
- Guo, J., & Asmawi, A. (2023). Exploring Foreign Teachers' Perceptions of Communication with Students in Online Learning in China: A Case Study. *International Journal of Learning, Teaching and Educational Research*, 22(1), 228-246. <https://doi.org/10.26803/ijlter.22.1.13>
- Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, 1(3), 100027. <https://doi.org/10.1016/j.rmal.2022.100027>
- Hair, J., Black, W. C., Babin, B. J. & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th edition). Prentice Hall.
- Hair, J., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101-110. <https://doi.org/10.1016/j.jbusres.2019.11.069>
- Hair, J., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: Updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), 107-123. <https://doi.org/10.1504/IJMDA.2017.087624>
- Hair, J., Risher, J., Sarstedt, M., & Ringle, C. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31 (1), 2-24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Huang, C. P. (2010). *Exploring Factors Affecting the Use of Oral Communication Strategies*. In <http://www.lhu.edu.tw/accessed> January 2022
- Hung, Y-W. and Higgins, S. (2016). Learners' use of communication strategies in text-based and video-based synchronous computer-mediated communication environments: opportunities for language learning. *Computer assisted language learning*, 29(5), 901-924. <https://doi.org/10.1080/09588221.2015.1074589>
- Idrus, H. (2016). Enhancing oral presentation skills of ESL students: The use of oral communication strategies. In *Assessment for Learning Within and Beyond the Classroom: Taylor's 8th Teaching and Learning Conference 2015 Proceedings* (pp. 437-446). Springer.
- Kaivanpanah, S., Yamouty, P., & Karami, H. (2012). Examining the effects of proficiency, gender, and task type on the use of communication strategies. *Porta Linguarum: revista internacional de didáctica de las lenguas extranjeras*, (17), 79-94. <https://doi.org/10.30827/digibug.31960>
- Lai, H. (2010). Gender Effect on the Use of CSs. *English Language Teaching*, 3(4), 28-32. <https://doi.org/10.5539/elt.v3n4p28>
- Li, Y. (2019). Collaborative online international learning: a pilot study in intercultural communicative competence in Chinese higher education background. *US-China Education Review*, 9(7), 7.
- Luque-Sánchez, F., & Montejo-Gámez, J. (2023). A Virtual Escape Room for the Enhancement of Mathematical Communication in Secondary Education. *Technology, Knowledge and Learning*, 1-24. <https://doi.org/10.1007/s10758-023-09706-1>
- Mahardika, P., Sudirman, & Suparman, U. (2014). The effect of gender on communication strategies used by ELT students. *UNILA Journal of English Teaching*, 3(2).
- Ministry of Education of China (2016). *Thirteenth Five-year Plan for Education Informatization*. http://www.moe.gov.cn/srcsite/A16/s3342/201606/t20160622_269367.html
- Ministry of Education of China (2018). *Education Informatization 2.0 Action Plan*. http://www.moe.gov.cn/srcsite/A16/s3342/201804/t20180425_334188.html?from=timeline&isappinstalled=0

- Nakatani, Y. (2006). Developing an oral communication strategy inventory. *The modern language journal*, 90(2), 151-168. <https://doi.org/10.1111/j.1540-4781.2006.00390.x>
- Omar, H., Embi, M. A., & Yunus, M. M. (2012). Learners' use of communication strategies in an online discussion via Facebook. *Procedia-Social and Behavioral Sciences*, 64, 535-544. <https://doi.org/10.1016/j.sbspro.2012.11.063>
- Panggabean, C. I., & Wardhono, A. (2017). Communication strategies used by EFL students in their presentation. *Indonesian EFL Journal: Journal of ELT, Linguistics, and Literature*, 3(2), 39-54.
- Parcon, R. E., & Reyes, Z. Q. (2021). Exploring the oral communication strategies used in online classroom discussion. In *ELT Forum: Journal of English Language Teaching* 10(3), 198-211. <https://doi.org/10.15294/elt.v10i3.47152>
- Radmehr, A. (2020). Identifying communication strategies employed by English language learners in private institutes in Sirjan. *Archives of Pharmacy Practice*, 1, 73.
- Santoso, D. R., & Mandarani, V. (2021). An Analysis of Communication Strategies Upon Video Blog of English Education Students. *Ethical Lingua: Journal of Language Teaching and Literature*, 8(1), 1-7. <https://doi.org/10.30605/25409190.263>
- Schreiber, L. M., & Valle, B. E. (2013). Social constructivist teaching strategies in the small group classroom. *Small Group Research*, 44(4), 395-411. <https://doi.org/10.1177/1046496413488422>
- Selinker, P. (1972). *Interlanguage*. *IRAL; International Review of Applied Linguistics in Language Teaching*, 10(3), 209-231. <https://doi.org/10.1515/iral.1972.10.1-4.209>
- Shih, Y. C. (2014). Communication strategies in a multimodal virtual communication context. *System*, 42, 34-47. <https://doi.org/10.1016/j.system.2013.10.016>
- Smith, B. (2003). The use of communication strategies in computer-mediated communication. *System*, 31(1), 29-53. [https://doi.org/10.1016/S0346-251X\(02\)00072-6](https://doi.org/10.1016/S0346-251X(02)00072-6)
- State Council of China (2017). *Thirteenth Five-year Plan for National Educational Development*. http://www.moe.gov.cn/jyb_xwfb/s6052/moe_838/201701/t20170119_295317.html
- Sun, L., Asmawi, A., Dong, H., & Zhang, X. (2023). Empowering Chinese undergraduates' business english writing: Unveiling the efficacy of DingTalk-Aided Problem-based language learning during Covid-19 period. *Education and Information Technologies*, 29(1), 239-271. <https://doi.org/10.1007/s10639-023-12288-1>
- Sun, Q., & Zhang, L. J. (2021). A sociocultural perspective on English-as-a-foreign-language (EFL) teachers' cognitions about form-focused instruction. *Frontiers in Psychology*, 12, 593172. <https://doi.org/10.3389/fpsyg.2021.593172>
- Taherdoost H, Sahibuddin S, Jalaliyoon N (2014) Exploratory factor analysis; concepts and theory. In *Advances in Applied and Pure Mathematics*(pp. 375-382). Mathematics and computers in science and engineering series.
- Thompson, J. B. (2020). Mediated interaction in the digital age. *Theory, Culture & Society*, 37(1), 3-28. <https://doi.org/10.11606/issn.1982-8160.v12i3p17-44>
- Uztosun, M., & Erten, İ. (2014). The impact of English proficiency on the use of communication strategies: An interaction-based study in Turkish EFL context. *Journal of Language and Linguistic Studies*, 10(2), 0-182.
- Vinzi, V. E., Trinchera, L., & Amato, S. (2010). PLS path modeling: from foundations to recent developments and open issues for model assessment and improvement. In V. Esposito Vinzi, W. Chin, J. Henseler, H. Wan (Eds.) *Handbook of Partial Least Squares* (pp.47-82). Springer.
- Wang, L. M. (2008). Gender difference in the learners' use of communication strategies. *Foreign Languages and Their Teaching*, 8, 37-41.
- Yaman, Ş., & Özcan, M. (2015). Oral communication strategies used by Turkish students learning English as a foreign language. In M. Pawlak, E. Waniek-Klimczak, (Eds.), *Issues in teaching, learning and testing speaking in a second language* (pp. 143-158). Springer. https://doi.org/10.1007/978-3-642-38339-7_9
- Zhao, T. & Intaraprasert, C. (2013). Use of Communication Strategies by Tourism-Oriented EFL Learners in Relation to Gender and Perceived Language Ability. *English Language Teaching*, 6(7), 46-59. <https://doi.org/10.5539/elt.v6n7p46>
- Zhou, J. W. (2022). Research on the Status Quo of Cross-Cultural Communicative Competence of Non-English Majors in Universities for Ethnic Minorities —Taking Aba Teachers University as an Example. *Comparative Study on Cultural Innovation*, 25, 163-166.

Appendix 1. Descriptions of Online Communication strategies

Hung & Higgins's (2016) Classification of Communication Strategies in SCMC

COMMUNICATION STRATEGIES	SUBCATEGORIES	DESCRIPTION
Interactional strategies (To repair or manage conversational dis-course)	<ul style="list-style-type: none"> • Request for clarification • Confirmation check • Comprehension check • Direct request for help • Indirect request for help • Input elicitation strategies • Feigning understanding • Inferential strategies • Framing • Verbal strategy markers • Omission • Time-gaining strategies • ... 	<ul style="list-style-type: none"> • Seeking clarification on unfamiliar terms or messages. • Repeating in a rising tone to check accuracy; using a first language term, or posing a complete question to confirm understanding. • Asking questions to confirm understanding • Using a direct question to ask for assistance about an unknown knowledge of the target language. • Using verbal or nonverbal cues to seek assistance from the interlocutor. • Expressing clearly or signaling to prompt the interlocutor to keep talking. • Faking comprehension of the previous message to sustain the conversation. • Posing questions or offering comments based on previous contents to assess one's hypothesis of the prior message, demonstrate the current understanding, or acquire additional information. • Indicating transitions between topics. • Employing verbal markers like "kind of" or "you know" to signal the use of strategies or less precise forms in the target language. • Leaving a blank space for an unknown word and continuing as if it has been said, expecting that the interlocutor can fill the gap based on context. • Utilizing fillers such as "umm..." or repeating the interlocutor's words to fill pauses to sustain the conversation during moments of thinking.
Compensatory strategies (To solve language problems of expression through manipulating available language knowledge)	<ul style="list-style-type: none"> • Circumlocution • Approximation • Use of all-purpose words • Literal translation • Self-rephrasing • ... 	<ul style="list-style-type: none"> • Providing examples, illustrations, or descriptions of the characteristics of the target object or action. • Using a single substitute term that shares semantic features with the target term. • Utilizing a general "empty" lexical term to replace a specific term, compensating for a lack of vocabulary or to prevent errors. • Translating a first language term literally into a target language term. • Paraphrasing, restructuring, or reiterating one's own statement, occasionally incorporating new information into the repetition.
Reduction strategies (To tackle language problems of expression by changing the intended message)	<ul style="list-style-type: none"> • Message abandonment • Message replacement 	<ul style="list-style-type: none"> • Leaving a message unfinished due to language difficulties. • Substituting the original message with a new one when feeling incapable of delivering it.

<p>Focus on form strategies (To attend to target-like forms)</p>	<ul style="list-style-type: none"> • Self-correction • Meta-talk • Own accuracy check • ... 	<ul style="list-style-type: none"> • Correct oneself immediately after saying the wrong word or sentence. • Reflecting on one's own or the interlocutor's use of the target language. • Checking the accuracy of one's expression by asking specific questions or repeating a word with a rising intonation (or a question mark in text).
<p>Sociocultural strategies (To sustain a collaborative and friendly interaction)</p>	<ul style="list-style-type: none"> • Social formula • Code-switching 	<ul style="list-style-type: none"> • Using fixed patterns in language (eg. good morning, sorry to bother you) for social purposes, such as greetings, leave-takings, or apologies. • Incorporating first language words into target language speech for purposes such as displaying familiarity, negotiating, or establishing intersubjectivity.
<p>Paralinguistic strategies (To solve problems of expression or facilitate language problems and to compensate for the modality restrictions)</p>	<ul style="list-style-type: none"> • Mime • Use of text or symbols to display the effects of intonation • Use of emoticons • Punctuation • Substitution 	<ul style="list-style-type: none"> • Using gestures and body movements to help express intended messages. • Employing capitalization for emphasis (e.g., GREAT) or multiplying letters (e.g., Sooooo good) to convey prolonged sounds. • Using emoticons (e.g., 😊) or keyboard symbols (e.g., ^__^) to express facial expressions and emotional states. • Making extensive use of punctuation, such as using a question mark to indicate a rising intonation, employing exclamation points to express surprise and so on. • Using abbreviated forms of words (e.g., r for are) or phrases (e.g., BTW for by the way) to save typing time or avoid errors.