Evaluating AI-Generated Language as Models for Strategic Competence in English Language Teaching

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Abstract

Strategic competence, the ability to use communication strategies (CS) to overcome challenges and enhance communication effectiveness, is crucial in language learning. However, the coverage of these strategies as well as target models to teach them remain scarce in current instructional materials. This paper represents the first attempt to examine the application of ChatGPT in providing target models of CSs and facilitate L2 learners' strategic competence. ChatGPT-4 was used to generate transcripts of monologues and dialogues around a description task following two types of prompts: with and without a taxonomy of communication strategies (structured and unstructured prompts). Preliminary findings suggest Chat-GPT's considerable potential in modeling communication strategies. Across the two prompting conditions, the chatbot was able to present a wide range of CSs, including achievement, self-monitoring, time-gaining, and interactive strategies. The highest CS content was found in the structured-prompt dialogue which utilized 9 out of 10 CS sub-types, a more diverse range than typically covered in textbooks, with approximation, circumlocution, and time gaining being most frequently used. In terms of linguistic presentation, the AI-generated transcripts demonstrated appropriate use of CSs, though their linguistic realizations were limited in range. The article concludes with implications for leveraging Chat-GPT to contextualize communication strategies, considerations for prompt engineering, strategy training to proficiency levels, and AI-teacher collaboration.

Keywords: AI, ChatGPT, communication strategies, strategic competence

Strategic competence is an essential aspect of communicative competence, referring to verbal and non-verbal communication strategies which allow speakers to enhance the effectiveness of communication and overcome the problems that arise in the process (Canale 1983; Celce-Murcia et al., 1995; Faerch & Kasper, 1984). In a broad sense, strategic competence involves not only compensatory strategies to deal with communication breakdowns but also other strategies that ensure conversation continuity and keep the communication channel open. Given that no speaker, whether native or non-native, can be certain that they have enough linguistic resources to discuss any topic, it is crucial to develop this competence. While strategic competence is relevant to both L1 and L2 speakers, it is probably more important to L2 speakers who are likely to encounter situations where their linguistic resources are insufficient to convey meanings. Indeed, the significance of developing strategic competence, particularly communication strategies among language learners, has been widely recognized and discussed since the 1980s. In most models of communicative competence, strategic competence remains an integral component (see Canale & Swain, 1980; Canale, 1983; Bachman, 1990; Celce-Murcia et al., 1995; Savignon, 2002; Celce-Murcia, 2007). For example, in Bachman's model (1990), strategic competence, operationalized as the capacity to implement language items in communication, is one of three main segments. Celce-Murcia and colleagues (1995) and Celce-Murcia (2007) even went as far as highlighting strategic competence as an ever-present component moderating all the other microcompetences (i.e., linguistic, socio-cultural, actional/interactional, formulaic, and discourse components). It is also believed that strategic competence largely determines a learner's fluency and conversational skills (Dörnyei & Thurrell, 1991).

Despite the critical role that strategic competence and communication strategies play, there is a lack of attention to them in current teaching materials. Material evaluations suggest that EFL textbooks present a limited coverage of communication strategies as well as insufficient target models for how to implement them (Faucette, 2001; Firmansyah & Arianti, 2022). Authentic models of strategically competent speakers are also not widely available to teachers and learners. Meanwhile, collecting authentic conversation models for strategy training is time-consuming and costly as teachers would have to invest considerable effort in recording, transcribing, and analyzing real-life conversations to create teaching-ready materials. In contrast, AI chatbots such as ChatGPT are becoming more accessible and applicable in ELT. ChatGPT can produce a diverse range of texts that mimic natural human language. In a recent study, Cai and colleagues (2024) provided evidence that ChatGPT can resemble human language use. It was found that ChatGPT was able to replicate human-like patterns of language use in 10 out of the 12 experiments. The AI also managed to interpret noise-corrupted sentences and drew reasonable inferences while ignoring semantic fallacies in a sentence. These findings demonstrate that ChatGPT can be effective in many aspects of human language processing and is therefore likely capable of producing language models for teaching. For these reasons, this paper aims to evaluate ChatGPT's potential to generate target language input for teaching communication strategies. The significance of the study lies in its being among the first to address this topic. Drawing on the existing body of research on strategic competence, communication strategies, and large language models' applicability in English Language Teaching, the study will examine the opportunity for learning communication strategies

through transcripts generated by Chat-GPT4. Specifically, the study will explore the range and distribution of the communication strategies in the AI-generated language, assessing to what extent the model can represent varied communication strategies. Furthermore, the quality of the linguistic presentations will be analyzed. By doing so, the study will provide insights into the effectiveness of Chat-GPT as a supplementary educational resource to traditional textbooks in facilitating strategic competence for L2 learners.

Literature Review

Theoretical Framework: Communication Strategies

Communication strategies (CS) are essential tools for effective interaction, especially in a second/ foreign language. They are generally understood as "potentially conscious plans for solving what to an individual presents itself as a problem in reaching a particular communicative goal" (Færch & Kasper, 1983, p. 36).

There are several proposed taxonomies for communication strategies which aim to categorize the various techniques that language learners use to compensate for the gap in their linguistic resources and effectively convey their intended messages. The framework informing the current study has been adapted from Dörnyei and Thurrell (1991, 1992), Celce-Murcia and colleagues (1995), Dörnyei (1995), and Yule (1997). The selection of communication strategies follows Færch and Kasper's (1983) suggestion that the strategies most useful for learning (i.e., recommended CSs) are those involving important aspects of language learning, namely the formation, testing, and automatization of hypothesis, as well as those requiring L2 production. Accordingly, the framework excludes strategies such as topic avoidance, message replacement, message abandonment, L1-based strategies (e.g. borrowing), and non-verbals, as these do not involve producing the target language. Despite the debate around whether time-stalling or time-gaining devices should be considered communication strategies (see Dörnyei, 1995; Celce-Murcia et al., 1995; Kasper, 1999), the researcher decided to include them in the current framework given their usefulness when topic avoidance is not an option. This results in the taxonomy below which consists of four types and ten sub-types of communication strategies (see Table 1).

Table 1

Adapted Taxonomy of Communication Strategies

	Communication strategies	Definition and examples
(i) Achievement strategies	1. Approximation/ Generalization	using an alternative expression which may not express exactly what you mean (e.g., *bird* for owl).
	2. Circumlocution/ Paraphrase	describing or explaining the meaning of the target expression, for example through description of its characteristics such as shape, color, function, etc. e.g., *Somen is a type of thin noodle often eaten in the summer in Japan.*
	3. All-purpose words	using an abstract, general word (e.g., *thingy, thingamajig).*
	4. Restructuring	rephrasing using a different grammatical structure e.g., *The bus was very... there were a lot of people on it.*
	5. Word coinage	creating an L2 word thinking it might work. (e.g., *fish zoo* for aquarium)
(ii) Interactive strategies	6. Appeal for assistance	asking others for help. These may be global (e.g., *Pardon*?) or lexical (e.g., *How do you say jinja in English?)*
	7. Indicators of non-understanding/ mis-understanding	repetition requests (e.g., *Pardon?* or *Could you say that again please?)* clarification requests (e.g., *What do you mean by...?)* confirmation requests e.g., *You mean...?* *So what you're saying is…?* *Did you say...?* verbal expressions of non-understanding (e.g., *Sorry, I'm not sure I understand.)*
	8. Comprehension checks	whether the interlocutor can follow you (e.g., *Am I making sense?)* whether what you said was correct or grammatical (e.g., *Can I/you say that?)* whether the interlocutor is listening (e.g., on the phone: *Are you still there?)*
(iii) Self-monitoring strategies	9. Self-initiated repair and Self-phrasing (Over-elaboration)	correcting one's own speech errors or clarifying message without external prompts. This can involve rephrasing, correcting mispronunciations, or changing words. e.g., *I mean...* *This is for students... pupils... when you're at school...*
(iv) Other communication strategies	10. Time-stalling/ Time-gaining devices	hesitation devices used to fill pauses in order to gain time to think, keep the floor, or warn the interlocutor that you are not a native speaker. e.g., *Umm, give me a minute to think about that; well; let me see.*

The Teaching of Communication Strategies

Although the importance of CSs has been widely acknowledged, whether they need to be taught is a topic of debate. On the one hand, some researchers believe that teaching the language itself is more necessary than teaching the strategies, arguing that strategic competence can transfer from L1 to L2 (Bialystok, 1990; Kellerman, 1991; Poulisse, 1990). Others argue that CSs should be taught to ELF learners as it is an excellent means for less proficient speakers to maintain the conversation. As Larsen-Freeman and Long (1991) stated, a non-native speaker's ability to keep a conversation going, which can be done with proper use of CSs, is a valuable skill and major objective, as it enables them to receive additional input and benefit from it. Through the use of CSs, the communication channel remains open, and learners can learn how "not to give up" (Hatch, 1978, p. 434). This current study takes the latter stance, supporting the necessity of teaching CSs to L2 learners.

Communication strategies are not only teaching-worthy but also teachable. Scholars tend to agree that CS training is beneficial in raising learners' awareness and declarative knowledge, which are essential to their proceduralization of knowledge and in turn, the implementation of effective communication strategies (Dörnyei, 1995; Yule & Tarone, 1997; Lam, 2005; Rababah, 2005). For example, Dörnyei (1995), studying 109 students in Hungary, presented concrete evidence that CS training can result in qualitative and quantitative improvements in students' use of three communication strategies, including (1) topic avoidance and replacement, (2) circumlocution, and (3) time-gaining (including fillers and hesitation devices). Similarly, Salomone and Marsal (1997) found that training significantly improved learners' use of circumlocution.

Following a strategy training approach, Tarone (1983) discussed two main ways to enhance students' use of communication strategies, including explicit and implicit instruction in the use of strategies and providing practice opportunities. Along these lines, Dörnyei (1995) introduced six guidelines for a direct approach to teaching communication strategies: raising learners' awareness of CSs, providing L2 models, presenting linguistic devices to verbalize CSs, providing opportunities for practice, enhancing students' willingness to take risks and use CSs, and highlighting cross-cultural differences in CS use.

Connecting theory and practice, Tarone's study (1983) recommended exercises for practicing CSs which can be in the form of a jigsaw task where the speaker has information that the listener(s) need to complete a task. She provided a detailed account of sample exercises such as asking a speaker to describe an object for which the target language vocabulary is likely unknown, such as a kitchen colander. A listener, who cannot see the object being described, must pick out the correct photograph of the object or draw the object. Such an activity involves both speaking and listening and has room for practice in negotiations but can be designed to place the burden primarily on the speaker, such as by not allowing the listeners to ask for clarification. This kind of activity is also preferred by Brooks (1992) over interview-type activities which do not provide enough opportunities for negotiation. Faerch and Kasper (1986) provided further suggestions for three types of activities for practicing CSs: communication

games with visual support, communication games without visual support, and monologues. They emphasize the importance of enhancing language learners' meta-communicative awareness regarding the factors influencing the selection of appropriate strategies. This awareness can be developed through specific analytic tasks, such as analyzing audio/video tapes of non-native speaker (NNS) and native speaker (NS) discourse. However, access to this kind of material could be an issue. In a more recent discussion, Faucette (2001) suggested dialogues, tangrams, and other abstract shapes, "spot the difference" activities, and describe the unfamiliar object, among others.

Instructional Materials for Communication Strategies

Textbooks are fundamental resources in ELT teaching, yet they seem to lag behind when it comes to teaching communication strategies. Though decades have passed since Dörnyei and Thurrell (1991) named strategic competence as the most neglected competence, assessments of textbooks still indicate a continued modest coverage of CSs. Analyses of coursebooks reveal that both the quality and quantity of CS training need improvement. Faucette's (2001) comprehensive analysis of 17 ELT materials, including textbooks and teachers' resource books, identified the most commonly featured CSs being circumlocution, appeal for assistance, time-stalling devices, and abandonment. Out of the 17 books, only "Learning to Learn English" by Ellis and Sinclair (1989) introduced the strategies of approximation, foreignizing, and word coinage. Although the usefulness of communication strategies is directly mentioned and there are tasks that lead to authentic conversations, target models are rarely provided, and the presentation of useful linguistic devices is limited. It was found that practice opportunities are few, as the language and strategies are seldom recycled throughout the texts. In a more recent study, Firmansyah and Arianti (2022) reviewed Indonesian EFL textbooks for the 12th grade. The distribution of CS types in these materials was not balanced, and there was limited representation of the ways to use communication strategies. Overall, these studies, highlighting the limited resources for teaching CS, underscore the need to develop alternative materials that fill the gap.

AI and Large Language Models in Language Education

Given the limited availability and variety of current materials on strategy training, it is imperative that teachers seek alternative resources, among which generative AI and LLM-powered models are promising candidates. Large language models (LLMs), which are advanced computational models trained on significant amounts of textual data to understand and generate human language patterns (Devlin et al., 2018), hold transformative potential for language education, especially in areas where human-generated materials are lacking. LLMs have proven themselves to be highly capable in a variety of language tasks including text generation, sentiment analysis, text classification, factual data handling, machine translation and question-answering (Chang et al., 2024; Rae et al., 2021).

Within English language teaching, LLM applications such as OpenAI's ChatGPT and Google's Gemini (formerly Bard), are gaining popularity as they can produce human-like language and

create tailored feedback based on concrete instructions, through a technique known as "prompting" (Meyer et al., 2024). A growing body of literature indicates these AI models' ability to offer substantial support for teachers by aiding lesson planning, implementation, and assessment (Celik et al., 2022). Regarding material development, LLMs have also advanced the creation of generative corpora by linking example sentences with linguistic features such as parts of speech and meanings (He et al., 2024). This results in a standardized corpus of example sentences that are highly standardized and tailored to specific educational needs. Koraishi (2023) further notes that LLMs can create text passages on topics relevant or interesting to learners, which makes them valuable for generating engaging materials. In a related inquiry, Young and Shishido (2023) discuss the application of ChatGPT in simplifying reading materials for ESL students.

For language learners, LLMs can enhance engagement by acting as a conversation partner (Fitria, 2021), providing resources and engaging students in practice (Dombi et al, 2024; Ji et al. 2024), and delivering personalized feedback (Chang et al., 2024; Kim, 2024; Meyer et al., 2024). Fryer and colleagues (2019) also reported learners' positive learning experiences with chatbot. Their analysis revealed that students felt they learned more with the chatbot compared to with another human, which was linked to their task interest, even when there were communication difficulties.

Admittedly, LLMs present limitations in few-shot learning (i.e. when very few examples are provided) as well as methodological issues when trained on large web-based corpora (Brown et al., 2020). There have also been reports of LLMs generating seemingly factual text that is actually false, a phenomenon known as "hallucination" (Rawte et al., 2023). Another challenge, specific to LLMs' use in education, is the demand for teachers and learners to cultivate the necessary competencies and literacies to comprehend the technology (Kasneci et al., 2023). However, if teachers are offered sufficient guidance and LLMs are carefully guided by specific prompts and monitored closely for accuracy, they have the power to revolutionize language education.

Motivated by the promising findings on the application of AI tools and addressing the existing gap in strategy-training materials, this study aims to explore AI's potential in providing the missing target models of communication strategies, which can supplement traditional textbooks. The main research questions of the study include:

1. How many types and sub-types of communication strategies are presented in ChatGPT-generated L2 models?
2. What linguistic features characterize these communication strategies?
3. To what extent does prompt engineering influence ChatGPT-generated content when provided with varying levels of communication strategy information?

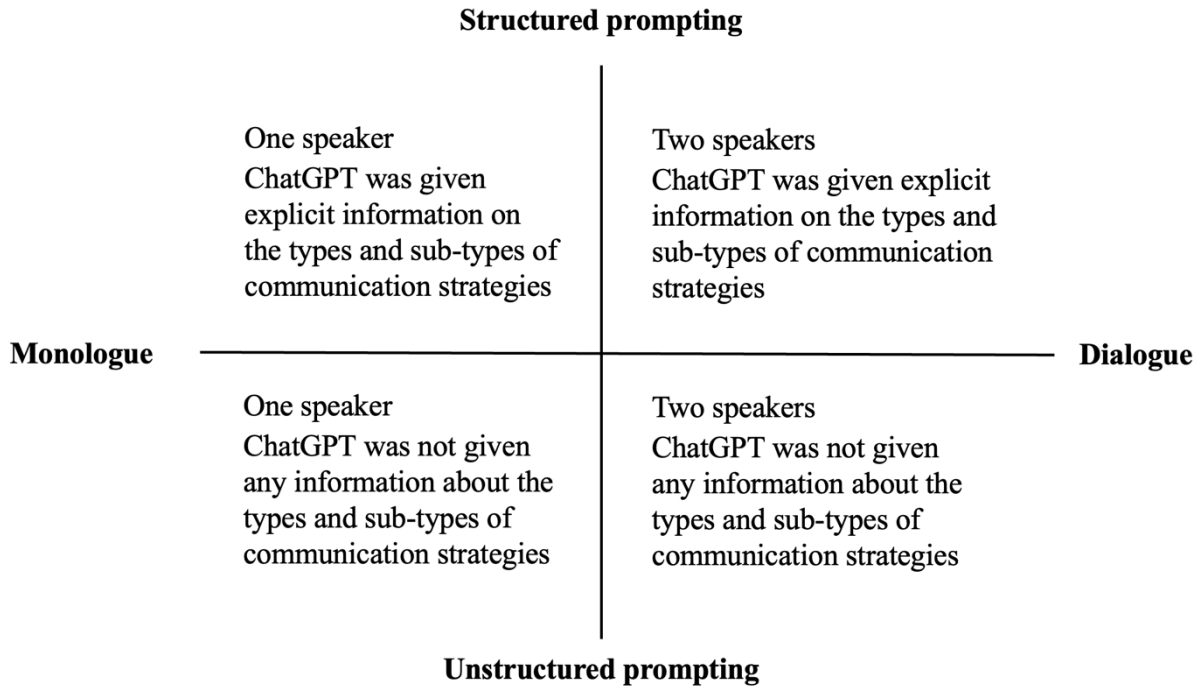
Methodology

The AI model under inquiry is OpenAI's ChatGPT-4, which was the most updated model at the time of the investigation. ChatGPT-4 was prompted to generate transcripts of speaker(s) talking about how a coffee machine works. This task was chosen because it involved less familiar vocabulary, which can elicit the use of communication strategies (Tarone, 1983). Following Atlas's guidelines on effective prompting in ChatGPT (Atlas, 2023), all the prompts used to generate transcripts included the following elements:

- A specific task that the chatbot needs to perform (i.e. create a transcript for a description of how a coffee machine works where the speaker(s) experience difficulties in communication)
- Type of transcript (i.e. monologue or dialogue)
- ChatGPT's persona (i.e. role-playing as either one or two speakers)

The AI was prompted four times, with varying numbers of speakers and varying levels of CS information. The prompt engineering for these conditions are detailed in Figure 1 below. The unstructured prompting condition (i.e. without any explanation of CS) was conducted first to avoid "order effects", a situation in which the order of questions (in this case, the order of prompts) may influence responses (Schuman & Presser, 1981).

Figure 1
Research Design Matrix



These conditions resulted in four AI-generated transcripts, which were analyzed to assess the quantity of CSs covered (Research question 1) and their linguistic presentation (Research

question 2). Comparisons were also made between the structured-prompt and unstructured-prompt transcripts to assess the impact of prompt engineering on the quality and usefulness of the generated language in presenting CS (Research question 3). The analysis was informed by the adapted taxonomy of communication strategies reviewed in the previous section (Table 1). As this study focused on examining generative AI's material development potential, no research participants were involved. The researcher assumed the role of monitoring the AI and "orchestrating different resources" (Jeon and Lee 2023, p. 15888).

Findings and Discussions

Range and Distribution of Communication Strategies

The findings in Table 2 below indicate that Chat-GPT was able to present a good range of the recommended communication strategies. Most of the Chat-GPT-generated transcripts covered the four recommended types of communication strategies, ranging from speaker-oriented strategies such as achievement, self-monitoring, and time-gaining strategies to interactive ones. Predictably, dialogues consistently made use of a higher number of sub-types of CSs than monologues. This is because the presence of more than one interlocutor allows for negotiations of meaning and in turn, the implementation of interactive strategies, which are not enabled during monologues. The most productive transcript was the structured-prompt dialogue in which 9 out of 10 sub-types of CSs were used. This is, by far, a wider range than textbook coverage as indicated by current literature. For example, the 17 textbooks analyzed in Faucette (2001) covered only a total of 6 recommended sub-types of CSs.

The most featured CSs were approximation, circumlocution, self-initiated repairs, and time-gaining devices, which were used consistently in all four transcripts. This aligns somewhat with textbook distribution where circumlocution and time-stalling devices were also the most common (Faucette, 2001). Interactive strategies such as indicators of non-understanding/misunderstanding and comprehension checks, as well as word coinage, were only observable in dialogues. Interestingly, appeal for assistance, although categorized as an interactive strategy, was featured in one of the monologues. Such use will be discussed further in the next section.

Table 2
Range of Communication Strategies Presented in ChatGPT-generated data

Communication Strategies	Unstructured prompt		Structured prompt	
	Monologue	Dialogue	Monologue	Dialogue
Achievement strategies				
Approximation/generalization	x	x	x	x
Circumlocution/paraphrase	x	x	x	x
All-purpose words	x		x	x
Restructuring	x	x	x	
Word coinage		x		x
Interactive strategies				
Appeal for assistance	x	x		x
Indicators of non-/mis-understanding				
repetition requests				
clarification requests				
confirmation requests		x		x
verbal expressions of non-understanding				
Comprehension checks				
whether the interlocutor can follow you				x
whether what you said was correct or grammatical				
whether the interlocutor is listening				
Self-monitoring stragies				
Self-initiated repair/Self-phrasing	x	x	x	x
Others				
Time-stalling/time-gaining devices	x	x	x	x
Total number of types of communication strategies	4	4	3	4
Total number of sub-types of communication strategies	7	8	6	9

Furthermore, comparing unstructured-prompt and structured-prompt transcripts, there was minimal difference in the total numbers of CSs presented in each. This implies that ChatGPT

is capable of maintaining a consistent range of CSs regardless of the amount of CS instructions provided. This consistency might be related to the design of the prompts. Both the structured and unstructured prompts used to generate the language models followed the principles of prompting for the educational use of ChatGPT (Atlas, 2023). These include being specific, defining the context for the conversation, and specifying the chatbot's specific persona to ensure relevant responses. Since both types of prompts adhered to these principles, the chatbot was sufficiently informed to effectively produce communication strategies, regardless of whether a detailed CS taxonomy was provided. With unstructured prompts, communication strategies were called on by the specific requirement of demonstrating communication difficulties. Meanwhile, the structured prompts explicitly provided 10 communication strategies to overcome these difficulties, which the chatbot was required to use.

Amount of Prompting and Number of Communication Strategies

Figure 2 compares the distribution of various communication strategies in the monologues and dialogues generated by ChatGPT across two scenarios: structured prompts with explanations of CSs and unstructured prompts without CS information. Across all transcripts, time-gaining devices saw the highest usage. This persistent use of time-gaining was probably due to the fact that communication difficulties are often expressed as hesitations in speech. However, when prompted with specific information about CSs to include in the transcript, the chatbot produced fewer time-gaining devices in both monologues and dialogues. This was a response to the focused nature of the prompt, which explicitly required the chatbot to include a range of given strategies. This also reflects the possibility that when speakers are aware of and able to employ other CSs to overcome a communication breakdown, the need for stalling time will likely reduce. Notably, other strategies such as circumlocution and self-repairs were also used repeatedly in the AI-generated transcripts, as indicated by their higher frequencies (see Figure 2). This repeated exposure can lead to effective learning since it helps reinforce the understanding and usage of these communication strategies (Mariani, 1994). This is another area where the AI-generated model outperforms textbooks, which rarely recycle strategies, as found in Faucette's study (2001).

For monologues, it was evident that circumlocution, approximation, all-purpose words, restructuring, and self-repairs were more observable in the structured prompt transcript. Meanwhile, time-gaining devices and appeal for assistance saw a higher frequency in the unstructured-prompt transcript. As noted earlier, the presence of an appeal for assistance in a monologue was somewhat surprising given that there was only one interlocutor. However, this use could be explained by the link between appeal for assistance and time-gaining devices. In this context, appeals for assistance may not be truly interactive in nature. Rather, they are attempts to express difficulty in communication, which are described by Kang (2008) as "difficulty fillers", a sub-category of time-gaining strategy in her taxonomy. This re-classification would contribute to the dominance of time-gaining devices observed in the data, further emphasizing the reliance on this strategy when the prompts are less defined. Alternatively, time-stalling devices may also be considered as part of the broader category of "seek help strategies" (Littlewood, 1984). Words such as *um* and *uh* can be seen as implicit

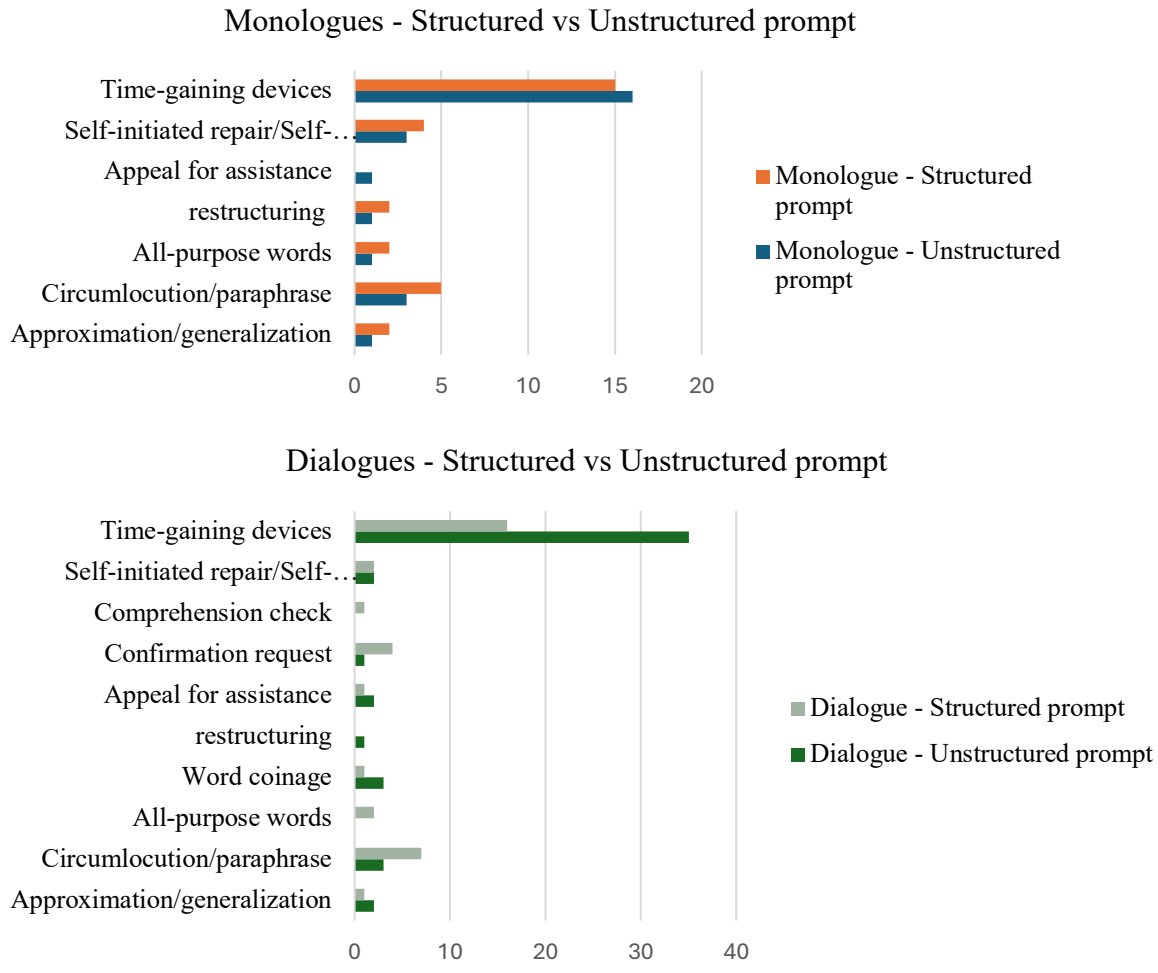
requests for help through hesitation, alongside the verbal appeals for help in the form of a question.

For dialogues, appeals for assistance, restructuring, word coinage, and approximation were rarely used. There might be an explanation for why these certain strategies were less commonly applied. Mariani (1994) argued that not all achievement strategies can be equally singled out for explicit instruction and practice. While techniques such as asking for clarification or maintaining a conversation are teachable, more complex skills such as restructuring utterances or paraphrasing are harder to guide explicitly. This may explain why the AI was less effective in conceptualizing these strategies.

Confirmation request was the only sub-strategy used to signal difficulty in understanding, which was used to a greater extent in the structured transcript. Similarly, circumlocution appeared more frequently when ChatGPT was given specific CS hints. All-purpose words and comprehension checks were only featured when ChatGPT was prompted with the full CS taxonomy.

Figure 2

Communication Strategy Usage Across Different Prompting Levels



Linguistic Presentation of Communication Strategies

The analysis in this section is underpinned by the view that communication strategies cannot be described prescriptively as a collection of fixed norms. Rather, a descriptive, context-based approach that observes patterns in language use is more effective (Mariani, 1994). Thus, the analysis below focuses on identifying which forms are used by ChatGPT to fulfill specific communication strategies and whether they are contextually appropriate.

Overall, ChatGPT could realistically replicate the type of communication breakdowns that may occur when discussing a less familiar topic, including both language-related (Excerpt 1) and meaning-related problems (Excerpt 2).

Excerpt 1:
Exactly. Then the ground coffee goes into the... um, the part where the brewing happens. You know, the section where the water gets really hot. [language-related hesitation]

Excerpt 2:
Um, I think that's the main idea. Unless... oh, wait, different types of machines. Uh, there's the drip one, which just, uh, drips hot water through the grounds. And the espresso one, which, um, uses pressure to push the water through. [meaning-related hesitation]

While the range of communication strategies produced by the AI chatbot was extensive, as indicated by the previous section, its linguistic presentation of some communication strategies was restricted to a limited number of forms.

Achievement Strategies

The chatbot-generated transcripts were able to use approximation by using a generalized word or expression which may not express exactly what something means (see Excerpts 3 and 4).

Excerpt 3:
There's a spout, or a nozzle... or is it a portafilter?

Excerpt 4:
You put the milk in a, uh, jug or something.

Circumlocution was also implemented effectively by means of describing the characteristic or function of the item being described, as seen in Excerpt 5 below.

Excerpt 5:
So, you put the beans in the, uh [time-stalling], *the place where the beans go* [circumlocution]. *You know* [time-stalling], *the container on top* [circumlocution].

What made the data seem authentic was the simultaneous implementation of multiple communication strategies. Excerpt 5 demonstrates how the AI-speaker worked out the word for a beanhopper in a coffee machine using a combination of circumlocution and time-stalling devices. This multi-layering of communication strategies reflects human learners' negotiation patterns consistent with findings from Dobao (2001) in which speakers made use of more than one communication strategy. Upon checking the comprehensibility of the strategies used, any misunderstanding could be resolved by employing an alternative strategy.

All-purpose words, such as *thing* and *thingy*, were also used where specific words were lacking. In excerpt 6, *thing* refers to the heating element in the coffee machine.

Excerpt 6:
There's a, uh, a thing inside that makes the water hot.

Restructuring strategy, which means reformulating the sentence using a different grammatical structure, was presented but limited in use. See how Excerpts 7 and 8 below both rephrase the sentence by replacing the subject.

Excerpt 7:
There's a grinder inside that... well, it grinds the beans into... uh, into small pieces.

Excerpt 8:
The coffee, uh, the brewed coffee, it goes into the cup.

There were a few attempts at word coinage, as illustrated in Excerpt 9, through words such as *bean holder* for bean container, and *brew part* and *brew group* for brew basket. All the coinages were in noun form.

Excerpt 9:
[Speaker 2]: *Uh, the, uh, bean holder? No, wait, the... the container. The bean container, yeah.*
[Speaker 1]: *Right, the bean container. So, you put the beans in there and then the machine, uh, grinds them up. There's this grinder thing inside that... um, it, uh, grinds them into... uh, tiny pieces.*
[Speaker 2]: *Yeah, like powder, but not really. It's, uh, ground coffee. So, then the grounds go into the, um, the brew part. Uh, what's that called again?*
[Speaker 1]: *Uh, I think it's the... brew group? Or, uh, brew basket.*

Generally, these AI-generated instances of achievement strategies reflect appropriate CS use, which can serve as L2 models in input-based tasks to facilitate strategic competence. However, there were places where the AI usage did not emulate situations that real speakers would encounter. In the transcripts, the speaker(s) always reached the precise word either independently or through collaboration with the other interlocutor, without much struggle, which is not always the case in real-life situations, particularly among non-native speakers. For

example, in Excerpt 9, the speakers quickly found the precise terms for *bean container* and *brew basket*.

Interactive Strategies

The linguistic verbalization of appeal for assistance was limited to the question *What's that called*? and its variant *What's that called again*? All the indicators of non-understanding or misunderstanding in the transcripts were expressed as a confirmation request in the form of *You mean..?* or *You mean.., right?* (see Excerpt 10).

Excerpt 10:
[Speaker 2]: *Uh, yeah, kind of. You mean like the... uh, the one with the beans and all that stuff, right?*

However, this limitation could likely be addressed by interacting with the chatbot and layering prompts (Atlas, 2023). This involves building on previous interactions with ChatGPT by asking follow-up questions or providing additional context that guides Chat-GPT to include a wider range of linguistic devices. This iterative approach can help to refine and focus the responses, making them more relevant and detailed.

Across all transcripts, there was only one instance of comprehension check in which a speaker was ensuring that the listener understood what they were saying by asking *Am I making sense?* (Excerpt 11). However, when considering the context, this confirmation check appears redundant, as there is no indication of a communication breakdown, nor does it add to the effectiveness of the communication.

Excerpt 11:
[Speaker 1]: *Yeah, that's it. Coffee machines are, uh, pretty cool when you think about it.*
[Speaker 2]: *Totally. Even if it's a bit hard to explain.*
[Speaker 1]: *Am I making sense?*
[Speaker 2]: *Yeah, you mean how coffee machines work, right? I get it.*

Self-monitoring Strategies

There were instances of self-initiated repairs, where speakers corrected themselves mid-sentence, such as in Excerpt 12, and self-phrasing, even to the point of overelaboration as in Excerpt 13.

Excerpt 12:
There's a spout, or a nozzle... or is it a portafilter? No, wait, that's something else.

Excerpt 13:
There's a, uh, a thing inside that makes the water hot. Really hot. Uh, almost boiling but not quite.

Time-Gaining Strategies

Time-gaining strategies, which include fillers and repetition, are sometimes referred to as processing time pressure strategies (Dörnyei & Scott, 1997). In the data, the time-gaining devices found were both fillers and repetition. The fillers featured in the transcripts were mostly *uh, um,* and occasionally, *well* or *you know.* Excerpt 14 illustrates the use of most of these fillers along with a lexical repetition.

Excerpt 14:
First, you have your coffee beans. They go in the, uh[filler] *what's it called... the bean container. Yeah, that's it. You put the beans in there and,* um [filler] *the machine grinds them up. There's a grinder inside that...* well[filler]*, it grinds the beans* into*...* uh[filler]*,* into [lexical repetition] *small pieces, sort of like powder, but not exactly. It's...* uh[filler]*... ground coffee, yeah.*

Besides the tendency to overuse *um* and *uh,* the chatbot-generated transcripts did not seem to demonstrate the pragmatic difference between these two time-stalling devices. Specifically, *um* and *uh* have been found to signal varying delay times when the speaker is thinking of answers to factual questions. Research by Clark (1994) and Clark and Wasow (1998) found that *um* typically indicates a long delay before answering, while *uh* indicates a short delay. However, this differentiation was not reflected in the transcripts as *um* and *uh* tended to be used interchangeably.

Recommendations

Based on the findings, this section suggests a range of practical implications for the use of ChatGPT in strategy training.

The Impact of Prompt Engineering and Task Design

As the findings show, there was minimal difference in the range of strategies used across the two prompting conditions. In both conditions, the AI was able to use a high number of CS types and sub-types. This consistency was probably due to the design of the prompts as both types of prompts specified the task, context, and the chatbot's persona. These elements, according to Atlas (2003), are important to guide ChatGPT toward relevant content. With clearly designed task, setting, and expectations in the prompt, the AI can better understand the intent behind the request and tailor its responses accordingly.

The chosen task in the study also played a key role in eliciting CS use. The task of describing how a coffee machine works required technical vocabulary for the parts of the machine as well as how they function. These challenging lexical demands, as Tarone (1983) stressed, are vital for successfully motivating the use of communication strategies. Teachers aiming to apply a similar approach could consider selecting tasks that imply the use of less familiar terminology and concepts, which can encourage AI chatbots to actively use communication strategies.

Selection of Communication Strategies for Teaching

When deciding on the set of CS to teach, besides prioritizing the more useful ones that lead to hypothesis formation and learning (Færch & Kasper, 1983), teachers also need to consider individual differences. Mariani (1994) highlighted that learning style variation among individuals may lead to the different uses of communication strategies. He argued that it is impractical to restrict learners to a fixed set of strategies, as their choice of strategy often occurs unconsciously and is shaped by factors such as the kind of communication problem, the type of challenge, and learner's proficiency level. While L2 materials should aim at exposing learners to a wide range of strategies suggested by research, it is also important to acknowledge learner-specific strategies and leave some aspects of strategic competence "to students' own initiative" in real, spontaneous interactions (Mariani, 1994). To this end, AI chatbots can and should be employed to expose learners to the diverse possibilities of CS use, without restricting students' choice.

The selection of communication strategies for instruction should also be informed by their effectiveness across proficiency levels. Empirical research on learners' use of CSs suggest that although the link between proficiency level and CS use is complex, students at varying proficiency levels tend to employ communication strategies differently. For example, Ulga and colleagues (2019), studying Iraqi EFL learners, observed that low-proficiency students frequently used L1-based strategies, avoidance tactics such as "approximation" and "self-repetition," and fillers. Though excluded from the current analysis to focus on strategies that involve L2 production, L1-based strategies can indeed be useful to lower-level learners who often fall back on their first language due to their limited L2 resources. In contrast, paraphrasing is less effectively deployed because of its high linguistic demands. As this strategy requires students to have a wide repertoire of linguistic structures to choose from, it benefits minimally from strategy teaching (Lam, 2010).

For advanced learners, a discourse-based approach to communication strategies by Clennell (1995) is worthy of consideration. This approach, in line with Canale (1983) and Faérch and Kasper (1984), emphasizes using communication strategies not only for repair but also to enhance message clarity and fluency. His model includes three categories: Category 1 (lexical compensatory strategies, including circumlocution, paraphrase and word coinage); Category 2 (negotiation/interaction strategies such as clarification requests and confirmation checks), and Category 3 (collaborative planning strategies such as tonicity, topic fronting and lexical repetition). While Category 1 and 2 strategies help negotiate breakdowns, Category 3 strategies enhance the effectiveness of communication. Research suggests that proficient learners prefer discourse-level CSs (Category 3) for message enhancement (Ting & Lau, 2008; Ting & Phan, 2008). With carefully designed prompts, the AI-generated content can be tailored to include specific CS that cater to different proficiency levels and learner preferences.

Approach for Strategy Training

The suggestions for strategy training by Mariani (1994) and Dörnyei (1995) offer a useful guideline for introducing and practicing communication strategies. Teachers can begin with a receptive or awareness-raising phase, where learners are introduced to real examples of communication strategies in use. At this stage, LLM-powered chatbots like Chat-GPT can aid in generating L2 models of use, as demonstrated in this study. Learners would then progress to exploring these strategies as well as the linguistic devices to verbalize them, followed by practice. Finally, they could reflect on their performance, assess their strategic use, and compare it with that of proficient speakers. During this last stage, AI can be involved again to provide automated feedback, a promising direction as suggested by research in other areas of ELT (Chang et al., 2024; Kim, 2024; Meyer et al., 2024).

The Role of Teachers: Perceptions and Agency in AI Integration

AI can be a valuable aid in material development, but its integration into practice is dependent on teachers' attitudes and perceptions, which can be influenced by AI's perceived usefulness, usability, and trust (Jeon & Lee, 2023). An effective integration of LLMs and AI-powered chatbots while minimizing their shortcomings thus necessitates a three-way relationship among teachers, AI, and students. In this relationship, AI can perform the roles of an interlocutor, content provider, teaching assistant, and evaluator, while teachers act as orchestrators of resources, facilitators of student inquiry, and promoters of AI ethics (Jeon & Lee, 2023). There is considerable value in AI-teacher collaboration, where AI supports but does not replace teacher agency (Holstein & Aleven, 2022; Kim et al., 2022). Celik et al. (2022) adds that teachers may also contribute to AI development by serving as models and validating AI assessment accuracy. Overall, the combination of AI's agentive role and teachers' designer role can help strengthen teacher-student interactions and the learning experience (Choi et al., 2023; Luckin et al., 2022).

Conclusion

This study presents the first attempt to explore the effectiveness of ChatGPT in providing L2 language models for teaching communication strategies and developing strategic competence in ELT. It examined the extent to which ChatGPT-4 can produce monologues and dialogues that make use of communication strategies to overcome communication breakdowns and enhance the effectiveness of communication. The data included analyses of transcripts produced by ChatGPT-4 using prompts that provide different levels of information on 10 recommended CSs. Overall, ChatGPT has shown promise in providing L2 models of communication strategies, which can help close the gap found in the current teaching materials. Specifically, ChatGPT-4 was able to implement all four types and 9 out of 10 sub-types of recommended CSs. In this regard, the AI outperformed textbooks by providing a more varied range of CSs (see Faucette, 2001 for a detailed textbook evaluation). The most frequently employed strategies include approximation, circumlocution, and time-gaining/ time-stalling devices, many of which were successfully recycled throughout the transcripts. Although there

was a tendency to rely on time-gaining devices, this pattern was reduced when the chatbot was prompted with a CS taxonomy. In terms of linguistic presentation, the linguistic forms utilized by ChatGPT were contextually appropriate, but some CSs such as time-gaining and restructuring appeared limited in their linguistic realizations. These limitations may be overcome by layering the prompts with more specific follow-ups on communication strategies and specific linguistic parameters to include. Additionally, the study found minimal variation in the range of strategies presented in ChatGPT-generated transcripts, regardless of the prompt's CS information, which highlights the importance of well-designed prompts and task selection in eliciting CS.

Despite these encouraging results, the current study recognizes the limitations of the small scale of data, as well as the potential limitation in ChatGPT's representation of language variation. Chat-GPT's models (GPT-3.5 Turbo and GPT-4) have been found to default to "standard" varieties of English and may be susceptible to stereotyping (Fleisig et al., 2024). Nonetheless, Chat-GPT's language data can still be valuable as models of proficient English speakers, which should be prioritized in instructional materials (McKay, 2002), especially when the focus is on strategic competence rather than linguistic competence. Future research could explore teachers' and learners' perceptions of the AI-generated language models, as well as learners' uptake of communication strategies using the AI input. Another line of future studies would be exploring the effectiveness of AI in designing tasks for teaching these strategies.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

ChatGPT-4 was used for data collection in this study to generate the language models for analysis. This use complies with the IAFOR's AI policy and has been disclosed explicitly in the methodology section.

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