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SELF-ASSESSMENT METACOGNITIVE STRATEGIES IN A SPONTANEOUS ESL SPEECH PRODUCTION CONTEXT

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ABSTRACT

Purpose – Self-assessment is regarded as a complex metacognitive process by scholars. Nevertheless, in the context of English as a Second Language (ESL) speaking, self-assessment practices often rely on assessment criteria and teacher commentaries. However, speaking involves spontaneous expression with limited access to external standards. Therefore, this case study aims to explore the metacognitive strategies that proficient ESL students use during self-assessment in spontaneous speech production contexts.

Methodology – Three participants, purposefully selected, participated in two spontaneous group discussions recorded on video. Instances of participants' dysfluency served as prompts in stimulated recall interviews, complemented by video recordings to validate participants' responses. The thematic analysis of interview data utilised a conceptual framework integrating O'Malley and Chamot's (1990) metacognitive strategies and Kormos' (2006) speech production model.

Findings – The analysis revealed that participants employed three key metacognitive strategies – organisational planning, selective attention, and self-monitoring to self-assess their spontaneous speech. Feedback sources, such as their proficiency in the second language (L2) and contextual factors, influenced the application and effectiveness of these strategies during self-assessment (SA).

Significance – This study offers insights into how proficient ESL students self-assess their spontaneous speech production, leveraging their available resources. In addition, this study identifies speech challenges the participants encountered and how they applied metacognitive strategies to address them.

Keywords: English as a Second Language, metacognitive strategies, self-assessment, spontaneous speech context, dysfluency markers.

INTRODUCTION

Self-assessment (SA) is widely regarded as a complex metacognitive process by scholars (Bhatti & Nimehchisalem, 2020; Harris & Brown, 2018; Yan & Brown, 2017), closely linked with the concept of metacognition introduced by Flavell (1979). Metacognition, described by the American developmental psychologist, refers to cognition above cognition—commonly understood as thinking about one's thinking. It consists of three key components: *metacognitive knowledge, metacognitive regulation,* and *metacognitive experience*.

Metacognitive knowledge involves understanding at three levels: declarative (knowledge about oneself), procedural (task knowledge), and strategic (knowledge of effective strategies). Understanding these levels of knowledge significantly influences cognitive processes. *Metacognitive regulation* involves conscious actions taken to monitor and control one's thinking. These actions include *planning* (determining appropriate strategies); *monitoring* (identifying strategy effectiveness); and *evaluation* (appraising and adjusting strategies for improvement). *Metacognitive experience* encompasses the accumulation of knowledge and skills gained through ongoing cognitive activities.

Likewise, during SA, students engage in monitoring and reflection to analyse their cognition, aiming to plan effective strategies for improving

the quality of their learning outcomes. Yan and Brown (2017) provide clarity on the connection between SA and metacognition through a multiple-case semi-structured interview. The scholars explored how individuals perform SA actions and assess their own work. The analysis revealed three recursive SA actions employed by participants: determining performance criteria, seeking self-directed feedback, and engaging in self-reflection. In the first action, participants identify the criteria necessary to meet specific task requirements. These criteria can be externally set by teachers or institutions, or internally defined as personal goals.

In the second action (self-directed feedback seeking), individuals utilise various feedback resources during SA. These resources may be internal, such as emotions, goals, ideas, beliefs, past knowledge, and experiences, or external, including instructor comments and evaluation criteria, or a both (Dolosic et al., 2016; Yan & Brown, 2017). In the third action, these feedback sources facilitate reflection and evaluation of work quality, enabling students to identify strategies for improvement. Ultimately, students' adeptness in navigating SA actions using diverse feedback resources underscore the link between SA and Flavell's (1976) concept of *metacognition*.

Nevertheless, in seeking to understand students' ability to self-assess in speaking, many researchers have adopted Boud's (1999) definition of SA, where students actively seek feedback from external sources to improve the quality of their learning outcomes. For instance, the alignment of students' SA scores with those from external evaluators has often been used as a benchmark to gauge the accuracy of students' SA abilities (Babaii et al., 2015; Basak, 2019). Studies have shown varied correlations; some report positive relationships between external evaluators' scores and students' SA scores (Babaii et al., 2015) while others suggest negative correlations, with less-proficient speakers tending to overrate their speaking abilities and proficient speakers underrating theirs (Basak, 2019; Trofimovich et al., 2016).

SA researchers are also interested in examining how external standards such as teachers' feedback, rubrics and checklists can assist students in reflecting on their speaking performances and developing their self-regulated learning skills (Khonamri et al., 2021; Maria, 2021; Rodríguez & Rocío, 2023; Sigua, 2022). While these findings offer valuable insights, it is important to note that speech productions in daily life are often spontaneous, with individuals having limited or no

access to external assessment standards. Instead, they rely on internal resources such as personal goals, ideas, prior experiences, and values to generate internal feedback aimed at enhancing the quality of their output (Dolosic et al., 2016; Yan & Brown, 2017).

Therefore, it remains unclear how students undertake self-assessment of their learning using accessible feedback resources, especially in spontaneous speech production contexts where there is no provision of pre-planning time or reference to external assessment measures. Consequently, scholars in the field of SA advocate further research to understand SA based on critical thinking, particularly from the metacognitive aspect (Bourke, 2014; Panadero et al., 2015). Among those who acknowledge the importance of students' cognition in self-assessing the quality of their learning are McMillan and Hearn (2008) who proposed that students engage in SA processes to 'monitor and evaluate the quality of their thinking and behaviour when learning and identify strategies that improve their understanding and skills' (p. 40). They view SA as a recursive process in learning where students continuously reflect on, assess and improve the quality of their learning outcomes as they produce them.

Ultimately, exploring how SA is conducted internally during spontaneous speech production could significantly enhance our current understanding of how students assess their speaking abilities using resources available to them.

Speech Production, Speech Fluency and SA

Aligned with McMillan and Hearn's (2008) definition of SA, experts in speaking have elucidated that monitoring and evaluating spontaneous speech occur as speakers attend to their speech, observe its effectiveness on interlocutors, and analyse their responses (Broos et al., 2016; De Jong, 2018; Kormos, 2006), primarily through dysfluencies (Brown & Lee, 2015; De Jong, 2018; Dornyei & Kormos, 1998; Kosmala & Morgenstern, 2017).

For example, prior studies suggest that low-proficiency speakers often employ various dysfluency markers, such as drawl and pauses, to aid in literal translation or code-switching and to manage word retrieval difficulties (Gürbüz, 2017; Kahng, 2014; Komalah et al., 2022). In contrast, proficient speakers may pause as they navigate

between multiple activated word options, possibly due to increased automaticity in processing their L2 (Kahng, 2014; Komalah et al., 2022). This difference aligns with the concept of L1/L2 activation, where less proficient speakers primarily activate lexical units from their first language (L1) due to the automaticity involved (Kormos, 2006). Proficient speakers, on the other hand, have a broader L2 knowledge base, enabling them to retrieve and evaluate multiple word options within that system (Gürbüz, 2017; Kormos, 2006). This selection process involves careful consideration of the appropriateness of the intended message (Kormos, 2006).

Moreover, monitoring and repairing speech are crucial cognitive processes observed among L2 speakers. Past investigations have identified dysfluency markers that assist speakers to monitor and repair pronunciation, structural, content, and grammatical inaccuracies (Gráf, 2017; Gürbüz, 2017; Kahng, 2014; Kim, 2019; Kim, 2021; Lambert et al., 2017; Nakatsuhara et al., 2019; Simpson et al., 2013). Speech repair occurs for various reasons including needs arising from the nature of authentic conversation, language precision, message clarity, and the evaluation of previous statements (Kim, 2021; Shank, 2020). Recent research by Kim (2021) and Nakatsuhara et al. (2019) also demonstrate that proficient speakers' focus on accurate and effective communication prompts them to pause and reformulate their utterances. Thus, the monitoring and repair of L2 speech depend on speakers' communicative goals during speech production.

Additionally, Kim (2019), Kim (2021) and Kahng (2014) observed that novice and intermediate speakers primarily engage in post-articulatory repair, pausing to ensure lexical and grammatical accuracy. In contrast, advanced speakers use similar repair strategies to enhance speech precision and reduce ambiguity. This difference stems from proficient speakers' reliance on procedural knowledge, where linguistic elements are largely automated, thereby reducing the need for extensive monitoring of basic language aspects such as grammar and pronunciation (Kormos, 2006). Proficient speakers frequently check whether their utterances align with their intended meaning (De Jong, 2018; Kim, 2021). When discrepancies are identified, monitoring processes are triggered to rectify errors before or after articulation (Kormos, 2006).

Regarding the repair of L2 lexical units, Kahng (2014) distinguishes between low-proficiency speakers revising faulty pronunciation and

word choice, and proficient speakers adjusting word appropriateness to fit the context. According to Kormos (2006), proficient speakers, due to their broad L2 knowledge, can activate multiple words and therefore perform a pre-articulatory check for contextual suitability. In contrast, less proficient speakers primarily monitor for word accuracy, lacking the extensive L2 knowledge for contextual appropriateness. L2 speakers also resort to pauses and repetitions to retrieve low-frequency L2 words (Williams, 2022; Suzuki et al., 2021). Kormos (2006) explains that these low frequency L2 words are not automated in procedural memory, depending instead on declarative memory each time they are needed, which complicates fluent and accurate retrieval.

In sum, insights from studies on speech-related phenomena suggest that dysfluency markers employed by speakers during speech production are closely linked to their cognitive processes and SA practices.

Rationale for Current Study

While existing studies on speech-related phenomena offer insights into the processes involving dysfluency markers in speech production, the specific stimuli and rationale behind monitoring and speech repair remain relatively unexplored. Investigating how ESL students' cognitive fluency interacts with their SA practices during spontaneous L2 speech production would provide deeper insights into how they metacognitively regulate their SA actions using available resources within the speech context.

To the best of the researchers' knowledge, only one study conducted by Komalah et al. (2022) has explored the SA metacognitive strategies of proficient and less proficient ESL students in spontaneous L2 speech, specifically focusing on self-repetitions. Using O'Malley and Chamot's (1990) framework of metacognitive strategies, the analysis found that students across proficiency levels applied selective attention strategies to self-assess and improve different aspects of their speech. However, this study primarily examined how L2 proficiency influenced students' SA metacognitive strategies through the lens of self-repetitions, leaving unexplored whether speakers employ other metacognitive strategies alongside different dysfluency markers.

Building on these past investigations, the current study aims to address the gaps and expand the existing knowledge by exploring

the SA metacognitive strategies of proficient ESL students during spontaneous speech production. Dysfluency markers identified by Dornyei and Kormos (1998), as shown in Table 1, were adapted as focal points to identify students' SA strategies during stimulated-recall interview (SRI). Since Gass and Mackey (2016) affirmed the effectiveness of SRI in uncovering detailed cognitive processes, this technique was used to understand how participants internally executed their SA strategies.

Table 1

Dysfluency Markers in Speech Production (adapted from Dornyei & Kormos, 1998)

Dysfluency Markers	Types	Descriptions
Non-lexicalised pauses	Unfilled pauses	Silence
	Umming and erring	er…, uh…, mhm...
	Sound lengthening	Sound lengthening
Lexicalised pauses	Fillers	Filling words or gambits
Repetitions	Self-repetition	Repeating a word or a string of words

This study addresses the following research question:

1. What self-assessment (SA) metacognitive strategies do proficient ESL students employ when dysfluency markers occur in their spontaneous speech?

Conceptual Framework

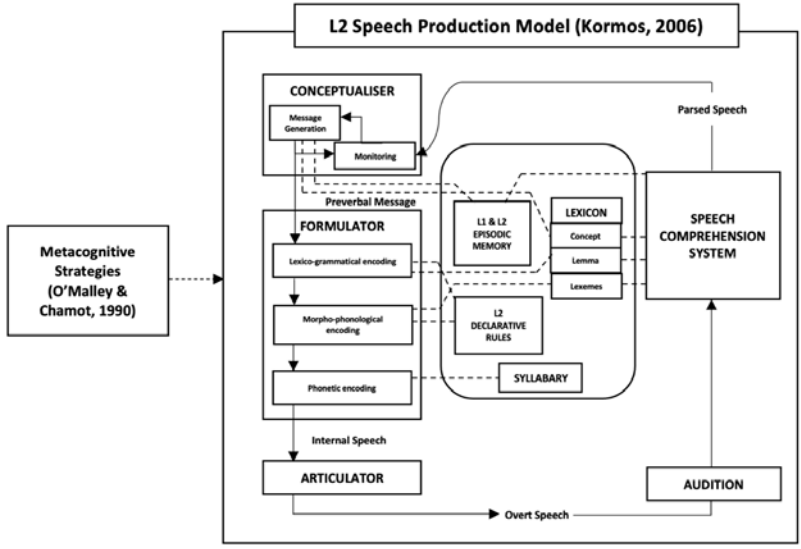
A conceptual framework has been developed based on Kormos (2006) speech production model and O'Malley and Chamot's (1990) metacognitive strategies (see Figure 1). This framework serves to analyse the data and identify the SA metacognitive strategies utilised by proficient ESL students to self-assess their speech. The rationale for selecting these models and strategies, along with an explanation of how the conceptual framework facilitates data analysis, is presented as follows.

Most second language acquisition (SLA) researchers typically rely on Levelt's (1989) model to comprehend the speech production

process of speakers. However, this study adopts Kormos (2006) speech production model as its conceptual framework for two main reasons. First, unlike Levelt's model, which focuses on the speech production of L1 speakers, Kormos (2006) adapted Levelt's model to accommodate the unique challenges of L2 speech production. This adaptation is crucial because L2 speech production is less automated compared to L1 production. Therefore, examining speech production processes from the perspective of L2 learners provides a more accurate analysis of the cognitive processes involved during speech production. Nevertheless, it is important to note that Kormos (2006) retains Levelt's three stages of speech production—conceptualiser, formulator and articulator—in her model.

Figure 1

Conceptual Framework of Metacognitive Strategies of Self-Assessment in Speech Production (Kormos, 2006; O'Malley & Chamot, 1990)



Secondly, the model by Kormos (2006) differs from Levelt's (1989) model by emphasising the role of long-term memory in how L2 speakers of varying proficiency levels process different speech aspects—such as ideas, words, sentences and utterances. According to Kormos (2006), proficient speakers utilise procedural knowledge to encode these aspects because their language knowledge has become automated. In contrast, less proficient speakers rely on declarative

knowledge, as their understanding of the L2 has not yet become procedural knowledge. The differentiation between automated and non-automated L2 knowledge significantly influences the efficacy of cognitive processes during speech production among speakers at different proficiency levels. This nuanced understanding enables the researchers to rationalise why ESL students selected for the study employ SA metacognitive strategies while exhibiting markers of dysfluency.

Regarding metacognitive strategies, O'Malley and Chamot's (1990) strategies were chosen to design the conceptual framework for two main reasons. First, O'Malley and Chamot's (1990) strategies have been widely used in L2 studies and proven effective across different age groups and language skills development. Second, as demonstrated in the literature reviewed in the previous section, speakers monitor, plan, and revise various aspects of speech when they exhibit dysfluency markers. Although not identical, these actions are closely aligned with O'Malley and Chamot's (1990) proposed metacognitive strategies. This alignment is supported by a similar study that explored ESL speakers' SA metacognitive strategies based on O'Malley and Chamot's framework (Komalah et al., 2022). Therefore, these strategies are considered suitable for investigating how ESL students' employ SA strategies.

The three stages in Kormos (2006) speech model – *conceptualiser, formulator*, and *articulator* – enable researchers to identify where speech challenges and problem-solving strategies arise when dysfluency markers are present in speeches. For instance, the *conceptualiser* and *formulator* stages involve planning both the speech content and linguistic elements required to convey that content. Thus, when dysfluency markers are employed due to planning difficulties, these stages are particularly relevant in understanding how assessment and strategies are applied. Additionally, Kormos (2006) delineates three *monitoring loops* within each stage of speech production, which are responsible for identifying discrepancies or faults in speech. These loops enable the researchers to observe how speakers employ O'Malley and Chamot's (1990), self-monitoring strategy to revise and improve the quality of their speech.

As emphasised in the rationale for selecting the speech model by Kormos (2006), the model elucidates how long-term memory

functions differently according to the speakers' L2 proficiency. Therefore, as speakers develop strategies to address speech challenges at different production stages, Kormos' (2006) explanation of the role of L2 knowledge in long-term memory enables the researchers to understand its influence on their SA strategies. The literature reviewed for this study indicates that speech challenges and metacognitive strategies occur within the speech production stages outlined in the model. O'Malley and Chamot's metacognitive strategies are thus connected to Kormos' model by a dotted arrow. Moreover, insights from existing speech-related studies were used to develop the initial codes and themes (as shown in Table 4) to analyse the data gathered in this study.

METHODOLOGY

Research Design

This study employed an exploratory case study to identify SA metacognitive strategies used by proficient ESL students. This research design is particularly suited for delving into areas where little is known (Hennink et al., 2020), especially regarding students' internal SA processes in ESL speaking contexts. Moreover, an exploratory approach allows for capturing participants' authentic experiences in real-world settings, without being confined to artificial research procedures (Yin, 2015). In this study, the selected ESL students shared their SA experiences based on their natural speech production in classroom discussions.

Participants

Participants were selected using purposeful sampling technique. The targeted group comprised 16-year-old ESL students from a Malaysian secondary school. To mitigate selection bias, participants were chosen from a class of proficient and upper-intermediate groups taught by a different language teacher, distinct from the researcher teaching the intermediate and less-proficient ESL students. From the 27 students in the selected class, only nine students received the C1 and C2 *Common European Framework Reference* (CEFR) band on their 2021 Form Three Assessment (*Penilaian Tingkatan Tiga - PT3*) oral test, a nationwide assessment for lower secondary students. These bands

indicate clear and fluent communication with minimal grammatical errors, the ability to justify opinions, and adept use of appropriate registers and vocabulary on given topics (English Language Teaching Centre, 2020). Following a briefing on the research procedure, parental consent in this study was obtained from three 16-year-old female students from diverse ethnic backgrounds, as shown in Table 2. English is their L2, and they have received formal English instruction for ten years in school. The unit of analysis for this case study comprises a group of proficient ESL participants.

Table 2

Details of Participants

Participant	Ethnicity	2021 PT3 Oral Test CEFR Band
Har	Indian	C1
Sun	Indian	C1
Yu	Chinese	C2

Materials

The non-evaluative spontaneous discussions were conducted in the participants' classroom during their English lessons. To facilitate this, the lesson teacher assisted in preparing the discussion topics by reviewing the Form 4 English syllabus. Two discussion topics were selected based on this review, as detailed in Table 3.

Table 3

Discussion Topic

Context	Discussion Topic
1	*The best means of communication for e-learning*
2	*The best reason why teenagers love e-sports*

For the SRI, the researchers adapted the interview questions from studies by Dornyei and Kormos (1998), Kahng (2014), and Komalah et al. (2022). These studies provided the researchers' a reference point for the interview questions, which focus on exploring the cognitive aspects of speech production, particularly through dysfluency markers employed in speech. The questions were chosen for their effectiveness

in eliciting participants' SA metacognitive strategies in relation to the dysfluency markers present in their speech. Some examples of the SRI questions are as follows:

1) At ____ mins, you said and paused for ___ mins. What made you (pause)?
2) What were you thinking when you (paused)?
3) How did the (pause) help you to solve the speech problem you encountered?
4) What made you rethink about the solutions you have developed to solve the challenge?

The dysfluency markers in the SRI questions were modified to align with those used by participants in their speech. Additionally, supplementary probing questions were developed to clarify any ambiguous initial responses from the participants. Prior to the study, both the SRI questions and probing questions underwent expert review and were piloted with other students.

Data Collection Procedure

The three participants were organised into groups for two ten-minute non-evaluative group discussions. The first discussion took place in the first week, followed by another in the third week. The discussion topics, as outlined in Table 3, were chosen by the lesson teacher, who also facilitated the video-recording of the participants' speech production. The decision to use video recording was aimed at capturing participants' spontaneous discussions, enabling a more comprehensive analysis of their non-verbal communication and interactions. This data collection method complemented the analysis of the participants' responses during the SRI phase.

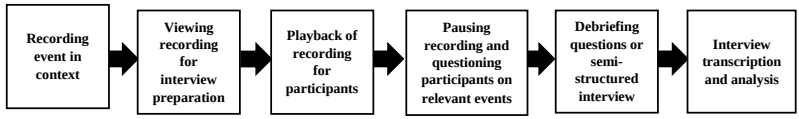
It is worth noting that participants in this study were accustomed to being recorded during English lessons by their teachers as part of a common practice in the selected school. The school's English language panel utilises these recordings randomly to analyse specific speaking patterns, identify students' strengths and weaknesses, and tailor speaking activities to address specific needs. Thus, this familiarity with classroom recording helped the participants engage naturally in the discussions without discomfort.

After the lesson, the researchers obtained the video recording from the lesson teacher and meticulously reviewed it to transcribe the

discussion. The transcript captured the participants' utterances and the timing of lexicalised pauses, non-lexicalised pauses and self-repetitions. Any grammatical or structural errors made by participants were included in the video transcriptions to maintain authenticity. Following this, participants were invited to attend the SRI on the same day as the task to ensure accurate data recall (Gass & Mackey, 2016). To minimise potential participant discomfort from researchers' presence and for ease of storing audio data compared to video, each SRI session was audio-recorded, focusing solely on capturing participants' verbal responses. The sessions lasting between 30 to 40 minutes, were conducted in the participants' classroom to minimise disruptions in an open environment. The researchers adhered to the SRI protocol proposed by Gass and Mackey (2016), as shown in Figure 2.

Figure 2

Stimulated Recall Interview Procedure (Gass & Mackey, 2016, p. 56)



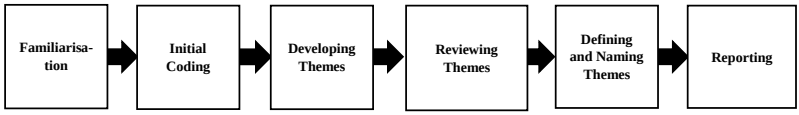
The researchers controlled the video playback using a laptop because they had knowledge of the list of relevant clips required for the SRI. Participants wore earphones to minimise sound distractions while viewing the clips. Adapted from Dornyei and Kormos (1998), Kahng (2014), and Komalah et al. (2022), the SRI questions, were utilised and occasionally rephrased to elicit more detailed data on participants' SA experiences. Transcriptions of participants' SRI responses were subjected to member checking and data analysis commenced upon their confirmation.

Data Analysis

Two primary data sources—the SRI transcripts and video recordings—were analysed to determine the SA metacognitive strategies utilised by the three participants during their spontaneous speech production. Following Clarke and Braun's (2017) six-phase framework, a thematic analysis employing a deductive approach was conducted on the SRI data.

Figure 3

Thematic Analysis Six Phase Framework (Clarke & Braun, 2017)



In line with the study's objective to identify the participants' SA metacognitive strategies, the initial codes and themes were developed based on analyses from past studies on speech fluencies and descriptions given by O'Malley and Chamot (1990) for each metacognitive strategy, as shown in Table 4.

Table 4

Initial Coding and Themes

O'Malley & Chamot's (1990) Metacognitive Strategies	Initial Themes	Initial Codes
Organisational Planning	Idea Development	Planning ideas, Lack of ideas
Selective Attention	Word Search	Word retrieval challenge, Low-frequency words, Selecting/choosing suitable words
Advance Preparation	Sentence Rehearsal	Rehearsing, Practising, Planned sentence, Intended idea
Self-monitoring	Word Revision	Faulty word, Faulty pronunciation
	Sentence Revision	Faulty structure, Faulty tenses
Self-evaluation	Sentence Evaluation	Planned sentence, Intended idea, Match, Same, Discrepancy
	Statement Evaluation	Stated sentence, Intended idea, Match, Discrepancy

Next, the researchers reviewed participants' SRI responses multiple times to become acquainted with the data. During this process, significant data points were colour-coded according to the initial codes. Due to practical constraints with analytic software, manual

analysis was conducted. Subsequently, the codes were grouped into initial themes, and a review process ensured an accurate representation of the collected data.

The original codes and themes, initially grounded in learning perspectives, underwent revision and redefinition to align more closely with the SA context. This process was guided by the conceptual framework developed within this study. The coding underwent meticulous review to ensure its relevance and effectiveness in addressing the research question posed in the current study.

Additionally, to enhance rigor and trustworthiness of the findings, the researchers sought the input of two university lecturers who are experts in assessment and speech fluency. These lecturers independently examined the researchers' data analysis and themes, providing valuable feedback that helped validate the interpretations against the data collected in the study. The final coding and themes are presented in Table 5.

Table 5

Final Coding and Themes

O'Malley & Chamot's (1990) Metacognitive Strategies	Initial Themes	Initial Codes
Organisational Planning	Idea Development	Vague/Incomplete statement, Elaboration, Explanation, Additional examples
Selective Attention	Word Search	Encoded word inappropriacy, Anticipated word, Search
Self-monitoring	Sentence Revision	Uncertainty, Faulty pronunciation/structure/ grammar, Newly emerged idea, Checking, Go through, Accuracy, Appropriacy

Upon completing the SRI analysis, the researchers proceeded to analyse the participants' video-recorded data using Knoblauch et al.'s (2014) video analysis procedure. Initially, relevant segments of the recordings—specifically instances where participants used dysfluency markers—were reviewed to complement the SRI

responses. Subsequently, the researchers documented the timing of these segments, the duration of dysfluency markers, the speeches before and after each instance, and participants' non-verbal cues. Following this initial review, the researchers revisited the research question and SRI analysis to conduct a detailed scrutiny of the video segments. This iterative process ensured verification of whether the video-recorded data supported the findings from the SRI analysis. Upon confirming the credibility of the data, these video-recorded details were integrated and reported alongside the SRI responses in the findings.

FINDINGS

This study explored the metacognitive strategies employed by three proficient ESL participants in self-assessing their spontaneous speech. Through analysis, it was found that some participants used *organisational planning, selective attention,* and *self-monitoring* to self-assess and enhance the quality of their speech.

Organisational Planning involves the deliberate structuring of parts, sequence, main ideas, and language functions in language learning (O'Malley & Chamot, 1990). Sun and Har, for instance, utilised this strategy by revisiting their previously said statements to plan their subsequent ideas. This strategy was particularly employed after they recognised vagueness in their previously said statements, as shown in Table 6.

Table 6

Organisational Planning – Idea Development

Participant	Discussion Context	SRI Excerpt	SRI Responses
Sun	*Ya, **I mean**, if this screen is really too small, you can always zoom in and see…* (VTE 1, Line 21)	1I	Because the previous word I said ***ya***. It looked like I was agreeing to what…what was said by Yu… I corrected and uhh planned to say my statement clearer of what I actually meant by saying that. To avoid being misunderstood by my friends

(continued)

Participant	Discussion Context	SRI Excerpt	SRI Responses
Har	*I agree totally* ***umm…*** *a 100% with the both of you…* (VTE 1, Line 34)	1B	Because I was thinking if my friends understood what I said about I agree totally with them. I rethink to correct what I wanted to say by changing to number which show how much I agree with them. Because number is easy to know how big or small a thing is.

For example, Sun noticed during the conversation that her agreement '*ya'* was ambiguous, potentially affecting her interlocutors' understanding. To address this, she elaborated on her agreement by providing further explanation. This observation was supported by Sun's non-verbal cues in Video 1 at minute 1:36, which aligned with her responses during the SRI. Sun became aware of the ambiguity of her statement when Yu made direct eye contact with her the agreement. This realisation was evident as Sun shook her head, avoided eye contact with Yu, and closed her eyes briefly while uttering the filler. However, after uttering the filler, Sun clarified her agreement by explaining her thoughts.

Similarly, Har identified that her agreement was also vague for her interlocutors' comprehension, prompting her to elaborate on the statement. This observation was verified as Har adjusted her agreement upon noticing direct eye contact from Sun in Video 1 at minute 2:33. These instances show that both Sun and Har used their interlocutors' reactions as feedback to analyse the effectiveness of their speech. When they perceived that their statements might hinder interlocutors' comprehension, they promptly reviewed and clarified their earlier statements to enhance speech clarity and quality.

However, this strategy was not evident in Yu's speech, as there was no indication that she identified vague statements. After discussing the first strategy (*organisational planning*), the second strategy (*selective attention*) is presented next.

Selective Attention involves language learners' focusing on specific language input required for language learning (O'Malley & Chamot, 1990). Yu and Sun demonstrated this strategy when they found that

several words they had in mind were inappropriate to express their ideas effectively. They actively searched for appropriate L2 words during their speech as shown in Table 7.

Table 7

Selective Attention – Word Search

Participant	Discussion Context	SRI Excerpt	SRI Responses
Yu	*…you will be able to think better in order to find the best way to* ***(pause)*** *achieve your goal…* (VTE 2, Line 15)	2D	Because I knew what to say in Mandarin in my head at that time. I knew I wanted to say…say *get your goal* but *get* wasn't a nice word so then I changed it to *achieve*
Sun	*…if you work in teams full of people who encouraging you, you will definitely feel* ***a lot of…a lot of*** *better…* (VTE 2, Line 92)	2L	…I use *better* a lot but just at that particular moment, it didn't come to my head. …a lot of other word came but just not that word. Like *less miserable*…or like *you feel less sad****…*** After saying a lot of, only then I remembered the word *better*.

For instance, Yu's intended to convey the message '*get your goal'*, but upon self-assessment, she recognised that the verb '*get'* was inappropriate for describing *goals*. Consequently, Yu searched for a more appropriate verb and chose '*achieve'* to express her idea. She confirmed this decision by cross-checking her SRI response and observing her non-verbal cues in Video 2 at minute 1:16, where she paused while looking at her classmates.

Similarly, Sun encountered situations where she struggled to recall the exact L2 word she needed. When she found that alternative phrases such as '*less miserable*' and '*you feel less sad*' were inadequate, she made an effort to retrieve the specific word, 'better' to accurately convey her idea. Her difficulty in recalling the word was evident from her action of closing her eyes and shaking her head, as seen in Video 2 at minute 7:50. However, her calm demeanour and maintained eye contact with her interlocutors after uttering the word '*better'* at minute 7:52 reflected her success in expressing intended meaning.

Yu and Sun's speech instances highlight how their semantic knowledge enabled them to evaluate the suitability of words for expressing their ideas. When they found their initial word choices inappropriate, they exerted additional cognitive effort to retrieve and use more suitable words. In contrast, this strategy was not observed in Har's speech, as there was no data indicating she deliberated between multiple words during her interactions. Thus far, this section has discussed the second strategy (selective attention). The following section will present the third strategy (self-monitoring).

Self-monitoring involves learners reviewing the appropriateness and accuracy of language input during the language learning process (O'Malley & Chamot, 1990). Likewise, Yu and Sun utilised the self-monitoring strategy to check the accuracy of their sentences before speaking, as presented in Table 8. They employed this strategy because they were uncertain if their sentences were accurate enough for the speech context.

Table 8

Self-monitoring – Sentence Revision

Participant	Discussion Context	SRI Excerpt	SRI Responses
Yu	*And we have three main **(pause)** means of communications that we can use* (VTE 1, Line 5)	1C	the word *main* has an almost similar sound to *mean*. When I said *main*, I was just checking if I was going to say the same word again...
Sun	***So**, my choice is mobile phones. Mobile phones are honestly…* (VTE 1, Line 7)	1A	just suddenly Yu passed the turn to me, I had to like go through what I wanted to say before I say it to my friends.
Har	*… you need the thinking skills in a fun way not thinking in **uhh… like** doing a Maths equation…* (VTE 2, Line 47)	2I	…while speaking this sudden idea just slipped through… That part for was for me to go through the idea and come up with a way to mention it. I find it good to mention it in the discussion. So, I said it.

For example, Yu noticed that her upcoming word '*mean*' differed from the word '*main*', which she had previously used. Provided that both words have almost the same sounds, reviewing these words enabled her to ascertain that she was not repeating the same word. Her uncertainty with the words was evident in Video 1 at minute 0:32, where Yu paused, furrowed her eyebrows, and looked at her notes. However, she spoke with confidence when she continued, pronouncing the word clearly.

Meanwhile, Sun evaluated whether her prepared sentence was accurate for the speech context. This situation occurred as Sun was unprepared to receive the turn from Yu. She confirmed this during her SRI review. In Video 1 at minute 0:37, Sun's unpreparedness was apparent as she avoided eye contact with her interlocutors, consulting her notes before speaking.

While Yu and Sun focused on sentence accuracy, Har used this strategy to assess the appropriateness of a newly emerged idea. Referencing SRI excerpt 2I, Har reviewed the relevance of her newly emerged idea to the discussion before deciding to express it in her discussion. In Video 2 at minute 3:55, her non-verbal cues—gazing at a point, pausing briefly, and raising her eyebrows while using a filler—aligned with her SRI reflections on reviewing new ideas.

These instances of speech indicate that all three participants were meticulous in ensuring the accuracy of their spontaneous speech and ideas. Whenever they felt uncertain of the words, sentences, and ideas they were about to express, they employed the self-monitoring strategy to verify their speech accuracy before speaking.

Overall, the analysis shows that the three proficient participants used *organisational planning, selective attention,* and *self-monitoring* strategies to monitor, reflect on and enhance their spontaneous speech production. Their application of these strategies during their speech assessments was influenced by two sources of feedback: their knowledge in L2 and contextual factors. Hence, this analysis suggests that proficient ESL participants in this study could effectively self-assess and enhance the quality of their spontaneous speech by utilising the available resources in their speech context.

DISCUSSION

This section discusses the metacognitive strategies employed by proficient participants to self-assess their speech production. Our analysis revealed their use of *organisational planning*, *selective attention*, and *self-monitoring* strategies to monitor, reflect on and enhance their spontaneous speech.

Motivated by the need for clear communication with their interlocutors, Sun and Har employed an organisational planning to prepare clarifications for vague statements. This finding aligns with Kim (2021) and Nakatsuhara et al. (2019), who observed advanced speakers using dysfluency markers to refine their utterances for better communication. However, this study extends on this understanding by highlighting how contextual factors influenced Sun and Har's speech adaptation and organisational planning. Through continual observation of their interlocutors' reactions to vague statements, the participants gauged clarity and improved the quality of their speech. This finding suggests that interlocutors' non-verbal cues can serve as implicit self-evaluation tools for assessing spontaneous speech quality, potentially offering a dynamic alternative to assessment rubrics or checklists. Notably, the group setting likely heightened Sun and Har's sensitivity to non-verbal feedback. Further research in authentic contexts is needed to fully grasp how contextual factors influence proficient speakers' utilisation of organisational planning in spontaneous speech adaptation.

Moreover, Sun and Yu's extensive understanding of L2 semantics led them to employ a selective attention strategy, meticulously searching for precise L2 words to convey their intended meaning. Kormos (2006) noted that L2 learners broad L2 semantic knowledge allowed for multiple word activations in their minds. However, learners were quick to recognise when certain words were inadequate and actively searched for more fitting expressions. This finding elucidates how Sun and Yu's rich semantic knowledge facilitated a nuanced approach beyond mere synonym selection during SA. In contrast, Kahng (2014) found that advanced proficienty speakers often struggled with synonym selection in monologic tasks. This difference likely arises from the dynamic nature of Sun and Yu's discussion, where meticulous attention to word nuances was crucial due to the high proficiency levels of the interlocutors (CEFR C1 & C2). Ultimately,

this finding underscores how Sun and Yu's extensive L2 semantic knowledge, combined with the communicative context and highly proficient interlocutors, influenced their meticulous word choice, prompting the selective attention strategy during SA.

Furthermore, Har, Sun, and Yu's focus on producing accurate and appropriate speech led them to adopt the self-monitoring strategy during their SA. Specifically, they were engaged in pre-articulatory monitoring by reviewing and verifying word pronunciation, sentence structure and emerging ideas before speaking. Although this analysis contrasts with post-articulatory monitoring typically observed in advanced proficiency participants, who focus on reformulating utterances (Kim, 2019; Kim, 2021; Kormos, 2000). However, similar concerns apparently resulted in differing monitoring actions. According to Kormos (2006) and Simard et al. (2017), higher L2 proficiency allows proficient speakers to effectively manage discourse repairs. Likewise, Har, Sun and Yu's awareness that changes in word pronunciation, sentence accuracy and idea appropriacy could potentially affect their discussions prompted their monitoring strategy. This finding adds a crucial nuance to the current understanding of self-monitoring, particularly within the context of SA. It reveals that the desire for accurate and appropriate speech can drive not only proficient speakers' post-articulatory reformulation but also their pre-articulatory checking. While this study is limited to three participants, it opens avenues for further research with larger groups to confirm and expand upon this intriguing finding.

CONCLUSION AND FURTHER RECOMMENDATIONS

Expanding on Yan and Brown's (2017) cyclical model and Komalah et al.'s (2022) SA metacognitive strategies, this case study explores how proficient ESL students engage in SA during spontaneous speech, independent of external assessment criteria. The analysis reveals three key SA metacognitive strategies employed by Har, Sun, and Yu: *organisational planning, selective attention, and self-monitoring.*

Notably, Sun and Har effectively utilised organisational planning, leveraging non-verbal cues from their interlocutors as implicit SA tools during spontaneous speech production. However, the group setting may have influenced this awareness, necessitating further research in authentic communicative contexts. Moreover, individual factors, such as broad semantic knowledge influenced the SA strategies of

proficient students. Sun and Yu's meticulous attention to word choice exemplified how these students interacted with the context—dynamic discussions and highly proficient interlocutors—to shape their selective attention strategy. Future studies with diverse proficiency groups should explore how varying levels of L2 proficiency influence SA strategies.

This study provides a nuanced understanding of self-monitoring, particularly within the SA context, revealing that the pursuit for clear communication drives both pre- and post-speech checks. Despite focusing on three participants, this study suggests avenues for further research with larger groups to confirm and expand these intriguing findings. Generalising the findings requires caution, as this study focuses on an in-depth exploration of selected cases within its defined boundaries.

Despite these limitations, this study challenges the traditional view of SA solely based on external standards, demonstrating that students can effectively self-assess using their internal and readily accessible resources within the speech context. It is recommended that dysfluency markers in speech should not be seen as flaws, but as critical SA actions to enhance speech production. Incorporating these findings into classroom instruction can encourage students to adeptly utilise their internal and contextual resources to assess and improve their speech quality early on, thereby contributing to the long-term development of their L2 communication skills.

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