Exploring Psychological and Cognitive Difficulties Faced by Yemeni Undergraduate Students during Simultaneous Interpreting Tasks

استكشاف الصعوبات النفسية والإدراكية التي يواجهها طلاب المرحلة الجامعية اليمنيين أثناء أداء مهام الترجمة الفورية

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الملخص:

هدفت هذه الدراسة إلى التحقق من الصعوبات النفسية والإدراكية التي يواجهها الطلاب اليمنيون في المرحلة الجامعية أثناء جلسات الترجمة الفورية. وقد تم ملاحظة بيانات 30 طالبًا يمنيًا متدربًا في فصول الترجمة الفورية بقسم اللغة الإنجليزية والترجمة بجامعة القلم للعلوم الإنسانية والتطبيقية بمدينة إب، اليمن وكذا الجامعة الوطنية، فرع إب، اليمن وتسجيلها وجمعها وتحليلها كمياً ووصفيًا ونوعيًا في إطار مناهج ونماذج الترجمة الفورية التي تمت مناقشتها في هذه الدراسة. وكشفت الدراسة الحالية عن أبرز الصعوبات النفسية والإدراكية التي يواجهها الطلاب أثناء قيامهم بمهام الترجمة الفورية وهي صعوبات في الفهم والاستماع والذاكرة وإنتاج اللغة وسرعة المعالجة وإدارة الانتباه والقلق والتوتر وإدارة العبء المعرفي والتنظيم الذاتي وحل المشكلات والدافعية والإصرار. وأوصت الدراسة ببعض الممارسات والتدخلات التعليمية والآليات الداعمة لتحسين أداء الطلاب في الترجمة الفورية. وأخيرًا، اختتمت الدراسة ببعض المقترحات لبحوث مستقبلية تهدف إلى المساهمة في تطوير برامج تدريب المترجمين الفوريين وفهم العمليات النفسية والإدراكية أثناء عملية الترجمة الفورية.

الكلمات المفتاحية: الترجمة الفورية، اللغة المصدر، اللغة الهدف، الصعوبات النفسية والإدراكية.

Abstract:

This study aimed to investigate the psychological and cognitive difficulties encountered by undergraduate Yemeni students during simultaneous interpreting (SI) sessions. Data from 30 Yemeni undergraduate trainee students, in SI classes, at the Department of English and Translation from al-Qalam University for Humanities & Applied Sciences, Ibb City, Yemen, and the National University, Ibb Branch, Yemen were observed, recorded, collected, and analyzed quantitatively, descriptively and qualitatively within the framework of approaches and models of SI discussed in this study. The study at hand uncovered the most prominent psychological and cognitive difficulties faced by students during the process of SI tasks which were difficulties in listening comprehension, memory, language production, processing speed, management of attention, anxiety and stress, cognitive load management, self-regulation, problem-solving, motivation and persistence. The implications for educational practices, interventions, and supporting mechanisms were recommended to enhance students' performance. Finally, the study concluded with some suggestions for future research aiming to contribute to the advancement of interpreter training programs and the understanding of psychological and cognitive processes in simultaneous processing tasks.

Keywords Simultaneous interpreting (SI), source language (SL), target language (TL), psychological and cognitive difficulties.

1.Introduction

First and foremost, SI is a form of communication between people with different linguistic and cultural backgrounds. It is considered a relatively young form of translation, but it is one that is gaining significance. Many organizations, including the United Nations and the European Union, as well as multinational companies, need SI services to ensure smooth, accurate, and rapid communication with their foreign employees and business partners.

In the business world, SI is used at international events: meetings and conferences, trade fairs and exhibitions, discussions, etc. (Amelina et al., 2022, p.1). An interpreter's specific task is, therefore, to help individuals or groups, not only

to understand what each other says but also to know each other. The interpreter thus "holds a key position, if not the key position in the field of communication" (Herbert, 1978, p. 5).

The active development of economic, political, and cultural relations between different countries, as well as the scale of international cooperation in the field of education, science, and art, make interpreting work one of the most demanding types of activity, and at the same time increase the demand for interpreting services. As a result of the globalization era, information technology, and the activation of international relations, the demand for professional interpreters is increasing, so there are problems in determining the professional standard of SI quality assessment methodology. Daminov (2022) proposes that SI is becoming one of the most sought-after interpretation services because it saves time for both the audience and the speaker. The process of SI has been described not only by translation scientists and linguists, but also by psychologists, neuroscientists, and other scientists, but for many, it is still a miracle.

1. Definitions of SI

Theoretically speaking, there are many definitions for SI, for instance, Diriker (2015, p. 382) defines SI as "an interpreting mode in which the interpreter's rendering is delivered in synchrony with understanding and comprehending the SL speech into the TL with the processing time lag (normally a few seconds) between the SL speech and the TL interpretation". In the same line, Janzen (2005, p. 136) defines SI as "the process of interpreting into the TL at the same time as the SL is being delivered". Moreover, Chernov (2004, p. 6) outlines SI as "a complex type of bilingual verbal communicative activity". Similarly, Namy (1978, p. 26) states that the simultaneous interpreter must ensure communication and convey the sense. Therefore, SI is based on and was created for communication. Interpreters, especially trainees, may make some mistakes while interpreting and working to achieve their ultimate goal: enhancing communication.

To explain the notion of SI further, Chen and Dong (2010, p. 714) ensure that SI is really a very complex process and only very few interpreters can handle this process well. A speaker is speaking, and that speaker does not pause. He/she keeps talking. Therefore the interpreter should do the following while the speaker keeps on talking: listen to what the speaker is saying; translate it in his/her mind; render the translation in his/her microphone; and (and this is the most difficult part) at the same time listen to what is being said while he/she is speaking himself/herself. This demands a kind of mental miracle, and that is why it is an unusually demanding and complex activity to carry out, one that requires an unusual level of concentration, which tires out the interpreter rather soon – which affects his concentration, which, in turn, affects his/her performance and production.

2.The approaches to studying SI

Many scholars view interpreting as a form of translation. Based on that assumption, interpreting studies are expected to benefit from the theory and research in the field of translation. However, interpreting studies have benefited from translation studies only to a very limited degree. It was only in the early 1990s that the influential approaches to translation began to be explored in the field of interpreting. The linguistic, cultural, psychological, and cognitive approaches, that will be discussed below, are the most common approaches in interpreting studies.

-The Linguistic Approach

Just like in translation, there is an ongoing debate over the literal vs. sense strategies of interpretation. Christoffels and De Groot (2005) explain what happens when the SL is recorded in the TL as follows:

Theoretically, two interpreting strategies have been distinguished: a *mean in based* strategy and a *transcoding* strategy. … [in the meaning–based strategy] interpreting involves full comprehension of the SL in a way similar to common comprehension of speech. From representation of the inferred meaning, production takes place in the TL. The transcoding strategy involves the literal transposition of words or multiword units. The interpreter supposedly translates the smallest

possible meaningful units of SL that have an equivalent in the TL (p. 459).

The second strategy is also referred to as word-for-word or word-based strategy. The use of this strategy should be limited when interpreters tend to replace single words with their translation equivalents because such a process leads to what Christoffels and De Groot (2005) describe as an "unintelligible" interpretation. The output will be usually unaccepted. This is perhaps why the transcoding strategy is often considered to be an inferior interpreting procedure.

In the meaning-based strategy of SI, the assumption is that the SL is completely deverbalized. In other words, the linguistic forms of the SL text completely disappear in the TL and only the meaning of the message remains. This deverbalization view of interpreting is strongly suggested in Seleskovitch's (1978) theory of "sense." According to Seleskovitch, the interpreters' job has to do with understanding the meaning of the message and not with finding linguistic equivalents of the SL in the TL. Seleskovitch further explains, "it is to his [the interpreter] advantage to immediately forget the original wording used since that is not what he will reconstruct, and to clearly retain only the full meaning of the message with all its nuances" (p. 36).

However, Seleskovitch's view has been questioned by many theorists. Daro for example, believes that a good interpretation does not always mean a complete understanding of the source message and that interpreters often succeed in rendering materials that they did not understand completely (as cited in Christoffels and De Groot, 2005, p. 461).

- The Cultural Approach
In translation studies, scholars have approached translation from many different perspectives, such as postcolonialism, gender studies, and ideological consideration. Such perspectives view translation as a cultural practice. This same approach has been adopted in interpreting studies. Anderson (1976) was one of the first scholars who focused on the significance of the social situation in which the interpreting task

occurs. Anderson argues that interpreting "occurs in social-situations amenable to sociological analysis" (p. 209). Such settings, Anderson believes, impact the interpreter's performance.

Other scholars looked at extending some of the concepts that have come to occupy a central role in translation studies to the field of interpreting. Shlesinger, for example, explained the possibility of extending the theory of "norms" which was first proposed by Toury in 1980, to interpreting. Few scholars have touched upon Shlesinger's suggestion. Schjoldager (1995) is one of the scholars who revisited the concept of "norms" in interpreting. Schjoldager believes that "as a behavioral activity, interpreting must also be governed by norms" (p. 302). She also ensures that the concept of norms is worthy of the attention of interpreting studies scholars.

The strongest call for looking at interpreting as a cultural practice came with Cronin's (2002) appeal for a "cultural turn" in interpreting studies. Cronin views interpreters as, "those that cross linguistic and cultural boundaries; depending on the identity of the interpreter and the nature of the context, interpreters cross boundaries of gender, class, nationality, or ethnicity" (p. 391). Cronin pinpointed the fact that interpreting scholars have ignored the theoretical developments in translation studies. He further believes that a "cultural turn" in interpreting studies and similar to what has already been developed in translation studies "would encourage scholars to explicitly address questions of power and issues such as class, gender, race in interpreting situations" (p. 387). Diriker (2004) conducted a study that aimed to explore the relationship between the presence and the performance of simultaneous interpreters and between the socio-cultural contexts of their interpreting assignment. Diriker hoped that his study "can help to trigger an interest in exploring SI as situated action" (p.148).

- The Psychological and Cognitive Approach
The psychological and cognitive factors involved in the interpreting process have been the main focus of interpreting studies. Diriker (2004) writes:

The scholarly interest in interpreting seems to have followed a hierarchy of its own, with most of scholarly attention being devoted to the most salient types and features of interpreting (i.e., conference interpreting as the most salient type and cognitive aspects of the task as the most salient feature) (p. 1).

In SI, several process models were developed for the purpose of investigating the mental processes of interpreting. Gerver (1971, as cited in (Pochhacker, 2004, p. 100) was the first to develop a psychological model for SI. He built his model based on his experimental findings regarding interpreters' time lag, memory use, and output monitoring.

In the same line, Gile's (1997) effort model is another processing model of SI. The effort model was initially developed to be used as a conceptual framework for interpretation students. In this model, interpreting is approached as a limited capacity system taking into account the language combination as a very important factor that determines the interpreting performance. Three different "efforts" were presented. Gile (1997) defines the three efforts as follows:

The listening and analysis effort is defined as consisting of all comprehension oriented operations. . . . The production effort is defined in the simultaneous mode as the set of operations extending from the initial mental representation of the message to be delivered, through speech planning, and up to the implementation of the speech plan. The memory effort is the high demand on short-term memory during SI, due to the operation of several factors (p. 164).

Gile further adds to the three basic efforts a separate fourth coordination effort. The sum of all four efforts represents the total capacity requirement. The capacity requirement of each effort differs with different interpreting tasks. On the contrary, the capacity available for each effort must be equal to or more than that of the capacity requirement. Failure may occur if this requirement is not met. For example, when the capacity required for producing a difficult chunk is not immediately available, the load placed on memory will be increased because there will be a need to memorize the incoming input until it is ready to be reproduced. The extra memory capacity needed for this may actually diminish the comprehension capacity.

The question that states itself here is what are the processes that occur in the mind of the interpreter during the process of interpreting? Thus, many linguists, researchers, and psychologists (e.g., Shlesinger, 2000; Gile, 1995; Pöchhacker, 2004; and Jensen, 2002) tried to develop some models and theories in order to study the cognitive process inside the interpreters' minds during the SI task (Shlesinger, 2000, p. 3). This era of time was described by Gile (1995) as the experimental psychology period. During this period, new trends and tendencies emerged in order to study the interpreting process. Thus, interpreting can be investigated through two different perspectives, namely, the product-oriented approach and the process-oriented approach (Korpal, 2016, p. 16). Recent studies on assessment in Higher Education favor the fact that students take control of their own learning process. Taras (2008) suggests students should be given two models for self-assessment, one that permits them to be included in the self-assessment process of higher education and the other giving them access to grade production and negotiation. Both models provide a different form of expertise to students and subsequently have a similar vision to that of the tutor.

The training of future interpreters should necessarily include some psycholinguistic training, taking into account the fact that a major part of the work depends on self-preparation by the students. The instructor's role, to aid self-preparation, is to provide some useful guidelines, strategies and exercises that can be used outside the language laboratory, without an instructor and without sophisticated equipment (Kornakov, 2000, p. 248).

Thus, in the case of interpreting, the students should strive to attain quality skills. There are many ways in which quality can be developed. Chiaro and Nocella (2004) proposed three basic areas: specialization, training, and technological innovation, emphasizing the need for specialists involved in training interpreters to focus certainly more closely on quality. Within training, assessment and self-assessment procedures play an important role

for interpreters by encouraging self-regulation processes in SI trainees (Arumi and Esteve, 2006).

3.The problem of the study

Undoubtedly, students who do their bachelor's degrees in English and translation departments encounter a lot of difficulties while practicing the SI process in classes. As a result, SI becomes a problematic issue especially inside Yemeni classes due to many reasons. Deficient English language proficiency, lack of practice, lack of interest, lack of specialized curricula, weaknesses in the Arabic language, etc. are some reasons that cause such SI problems among Yemeni trainee student interpreters who are still in their undergraduate qualification. Al-Salman & Al-Khanji (2002) argue that:

…the process of interpretation is a challenging task – a task that requires various types of both linguistic and non-linguistic skills: mastery of the active language, solid background of general knowledge, some personal qualities like the faculty of analysis and synthesis, the ability to intuit meaning, the capacity to adapt immediately to change in subject matter and different speakers and situations. Other qualities include the need to have good short and long term memory, the ability to concentrate, a gift for public speaking, and physical endurance and good nerves (p. 608).

In the same line of discussion, Daminov (2022, pp. 3-4) proposes that when talking about the difficulties that arise in the process of SI, the main thing should be noted: in the process of SI, the simultaneous interpreter experiences the strongest emotional and physical stress, which is primarily caused by the simultaneous decoding and encoding of information. The rapid exchange of language that occurs in the brain forces the brain to work twice as fast. SI work is the pinnacle of interpreting work. Therefore, the training of simultaneous interpreters is not an easy task. They need to have the following skills: Being able to speak a foreign language and own language freely; grammatically and phonetically well-pronounced speech; deep vocabulary in both languages; good knowledge of stable constructions and clichés fund and ability to quickly find them; being able to translate correctly both into their own language and into a foreign language; speed of reaction; good working memory; ability to concentrate; mental and physical endurance; ability to work as a group; Encyclopedic knowledge is required from a simultaneous interpreter; and being bicultural and knowing the notions of ideological issues in interpreting. Knowing and training all these concepts is a real problem for Yemeni students of English and translation studies and requires a great effort from the sides of the students themselves, their academies, and those who prepare such curricula for those trainees.

4. Objectives of the study

This piece of study strives to investigate the following objectives:
-   To identify the psychological and cognitive difficulties encountered by Yemeni undergraduate student interpreters at the English and translation department at al-Qalam University for Humanities & Applied Sciences, Ibb City, Yemen; and The National University, Ibb Branch, Yemen.
-   To find out the reasons that stand behind such difficulties and propose some pedagogical recommendations that may help to solve these problems.

5.The previous studies

Many studies have been carried out in the field of SI. The following studies are related to this current study and they helped the researcher in one way or another to develop his methodology and begin from the end-point of the other research studies.

To begin with, Johnson (2016) explored the challenges faced by undergraduate interpreting students, focusing on how mindfulness, stress, attention, and interpreting performance are interrelated. The study found that mindfulness training significantly improved students' learning and performance by enhancing their ability to manage attention and emotions, thereby reducing internal distractions such as mind-wandering and self-criticism. Gumul (2021) examined stress sources among trainee interpreters and their coping strategies. Using retrospective protocols combined with process and product analysis, the study revealed that stress, often resulting from factors like the

speaker's delivery rate and lexical searches under time pressure, led to disfluencies in interpreting tasks. Trainees used economy of expression strategies to manage stress, with stress being more prevalent in retour (foreign language to native language) interpreting compared to native language interpreting. Li et al. (2022) applied risk communication and cognitive load theories to study stress among interpreters in Covid-19 medical crisis communication. The research identified strategies used during crises and examined how cognitive load and physiological stress affected interpreting quality. After a year, Almhasees (2023) further investigated psychological stress among interpreters working with the Arabic-English language pair. The study utilized a five-point Likert scale survey to identify key stressors, including low pay, high responsibility for interpreted content, and poor client cooperation. Common stress-related symptoms reported included throat irritation, headaches, and compromised concentration.

Mohammed (2017) investigated common syntactic and pronunciation errors made by trainee simultaneous interpreters, identifying grammatical errors such as issues with pronouns, verbs, and subject-verb order, as well as pronunciation errors like mispronunciations and spoonerisms. The study noted that errors were influenced by the interpreters' English proficiency and native language. Mohammed (2019) later examined factors causing inaccuracies in SI from Arabic to English among Iraqi students. The study identified linguistic errors, including incorrect word choice and misinterpretations of titles and acronyms, as well as non-linguistic issues like cognitive and technical problems. Addressing these factors led to improved student performance. Moreover, Dayter (2020) reviewed the literature on strategies used in SI and analyzed a parallel bidirectional corpus of Russian-English SI. The study identified and correlated eight strategies with factors such as interpreting direction and source fragment position. Findings indicated that while strategies varied, some less common strategies were associated with specific variables like directionality.

Furthermore, Al Zahran (2021) explored the impact of language-specific factors on SI between English and Arabic, focusing on syntactic asymmetry. The study found that interpreters often prefer "form-based processing" to manage complex initial subjects in English, which sometimes resulted in less precise interpretations when converted to Arabic. Issa et al. (2021) analyzed interpreting techniques used by skilled Arab interpreters translating former U.S. President Donald Trump's inaugural speech. The study revealed that "transcoding" was the most frequently used technique, but interpreters generally performed better in their native languages, with culture-bound elements influencing interpretation quality. Aal-Hajiiahmed (2022) examined lexical, syntactic, and cultural challenges in SI between English and Arabic. The study found that expert interpreters were effective at problem identification and strategy application, whereas novice interpreters struggled with various issues, leading to poorer performance.

In regard to training and technological integration, Amelina et al. (2022) proposed methods to enhance interpreter training, emphasizing the integration of specialized training and technological support. Their study developed and tested a simulation-based training program, which effectively improved training outcomes by replicating real-world interpreting challenges. In the same year, Daminov (2022) analyzed strategies that facilitate SI, noting that interpreters often use multiple strategies simultaneously based on specific situations. The study highlighted the impact of both linguistic and extra-linguistic factors on the effectiveness of these strategies. Finally, Al-Sowaidi and Mohammed (2023) examined trainee interpreters' attitudes toward their training programs at Yemeni universities. The study involved 61 interpreters from Taiz province, using a 16-item questionnaire to assess their views. Findings revealed dissatisfaction with the current programs, which were found to focus primarily on linguistic and cultural competencies while neglecting other essential aspects of interpreting competence such as instrumental, psycho-physiological, and strategic skills. The study also highlighted issues with the

instructional content, training activities, practicum duration, and technology use. Additionally, an analysis of interpreting directionality at Al-Saeed University showed that both beginner and advanced students had varying levels of competence in both directions, with overall scores not meeting expected proficiency levels.

To sum up all previous studies discussed above, it can be said that all these studies conducted internationally and nationally focused on some main pillars of SI problems and challenges, i.e., the researchers generally tried to investigate the linguistic and cultural problems that encounter interpreters, trainee interpreters, and students of interpreting. Some of them focused on strategies, techniques, and training of SI, but very few of them focused on psychological and cognitive difficulties. Consequently, this modest piece of study tries to cover some important gaps that were not covered by previous research and scholars. Furthermore, the study takes place in Yemen, a developing country where translation and interpreting departments are still in their infancy. Additionally, these departments lack the basic facilities both in teaching and research.

6. Methodology and participants

In the current study, the data collected from 30 students (the whole number) at the English and translation departments at al-Qalam University for Humanities & Applied Sciences, Ibb City, Yemen, and The National University, Ibb Branch, Yemen during the academic year 2023/2024, second semester. Those participants were in their fourth level, the final year, of their undergraduate study and their ages ranged between 23-28 years old. The system of their study was semesters and regular. The Arabic language is their mother tongue and English language is their foreign language.

Those students studied many topics on translation and interpreting since level two, such as introduction to translation, mass media translation, technical translation, business translation, literary translation, computer-assisted translation (CAT), legal translation, religious translation, and on-sight translation. They also studied consecutive interpreting during their course in SI. Along with the translation and interpreting courses, students studied English language skills, i.e. speaking, reading, writing, and listening. They also studied linguistics and literature courses as well as some courses in their mother tongue and computer. To put it another way, students had a good background in all, or say most, of translation fields. During the course study, the instructor, who is specialized in translation and interpreting studies, taught them some theoretical issues on SI. The most important of these theoretical issues were definitions and history of SI; differences between SI, consecutive interpreting and sight translation; communication skills, personal and linguistic skills; problems and difficulties of SI; approaches, techniques and strategies of SI; etc. Moreover, the instructor exposed students to some practical works that had been shown to them on the class screen.

To collect the data for this study, the researcher used the method of observation. He prepared a checklist containing 10 items as shown in *Table 1* below. For the sake of the reliability and validity of this tool, this checklist was checked and refereed by five experts in English and translation; and Educational Psychology. After that, the trainees of SI were shown videos, TV shows, talks, pieces of news, TV reports, and TV documentary programs from these three channels, namely, *CNN*, *Alarabiya*, and *Aljazeera* to be simultaneously interpreted by them in class. Some of these shows were in English and some others were in Arabic. During their process of SI, their interpreting products were observed and recorded without their knowledge. In addition, the researcher registered the frequencies of the items in the checklist using a scale ranging from 0 to 10 according to their occurrence during 10 sessions of SI. Collecting, organizing, and tabulating the data lasted for a whole semester. The researcher instructor collected the interpreting products of those students to be analyzed through quantitative, descriptive, and qualitative approaches and showed the most common psychological and cognitive difficulties that had been faced by this sample. Additionally, the data were analyzed within the framework of approaches and models of SI.

7. The definitions of psychological and cognitive skills of SI

SI requires interpreters to possess a diverse set of skills and employ specific techniques to facilitate accurate and fluent communication between speakers of different languages. Psychological and cognitive skills represent an essential and crucial part of the SI process. These skills ensure that interpreters can adapt to changes in the dialogue to deliver precise and coherent translations. Mastery of these abilities is vital for overcoming the complexities of real-time language interpretation and ensuring effective communication across linguistic barriers.

Psychological skills in SI refer to the mental and emotional capabilities that help an interpreter handle the job's pressures effectively. As Gile (2009) explains, "psychological skills are essential for interpreters who work in high-pressure environments where they must process and translate spoken language in real-time" (p. 32). These skills are crucial for managing stress and emotions to maintain performance under pressure. Regarding cognitive skills in SI, they involve the mental processes necessary for understanding and translating spoken language instantly. Gile (2009) states that interpreters "must use several mental processes at once to listen to what is being said in one language and then convey that message in another language without delay" (p. 36). He adds, "Effective cognitive skills enable interpreters to quickly and accurately process information while maintaining the flow of communication" (p. 37). The most important psychological and cognitive skills of SI are:

- Language proficiency: Interpreters must have advanced proficiency in both the source and target languages to accurately comprehend and convey spoken messages. This includes knowledge of idiomatic expressions, technical terminology, and cultural references relevant to the context of interpretation (Mason, 2010). High proficiency allows interpreters to handle complex language tasks and cultural nuances effectively.
- Listening and comprehension: Effective simultaneous interpreters have strong listening skills to quickly and accurately process incoming speech. They must comprehend the meaning and intent behind the speaker's message while simultaneously preparing the interpretation in the TL (Gile, 2009).
- Concentration and attention management: SI requires interpreters to sustain high levels of concentration over extended periods. They use strategies to manage attention effectively, such as focusing on key information, filtering out irrelevant details, and maintaining mental agility (Setton & Dawrant, 2016).
- Processing speed: Interpreters need to process spoken information and provide a translation almost instantly. Fast processing helps in maintaining the flow and accuracy of the interpretation (Chen, 2018).
- Resilience and decision-making skills: According to Almhasees (2023, p. 112) resilience is "the capacity to recover from difficulties and adapt to challenging situations". For interpreters, resilience means bouncing back from mistakes or dealing with difficult interpreting conditions without a significant drop in performance. Being resilient helps interpreters handle unexpected issues and maintain effectiveness. Interpreters employ cognitive strategies to navigate linguistic ambiguities, resolve translation challenges, and make quick decisions under pressure. These skills include problem-solving, adaptation to changes in speech pace, and maintaining accuracy in dynamic communication environments (Ericsson & Kintsch, 1995).
- Emotional regulation and self-confidence: Emotional regulation is related to controlling and understanding one's emotions to stay focused during interpreting tasks. It involves staying calm and composed to avoid errors caused by anxiety or emotional distractions. Good emotional regulation helps interpreters maintain high-quality performance by keeping emotions in check (Gumul, 2021). Interpreters also should have self-confidence in their interpreting skills and this is essential for staying focused and providing accurate translations. Building self-confidence can come from practicing, getting positive

feedback, and understanding one's own strengths and weaknesses (Gile, 2009).

- Stress management: Interpreting can be very stressful because it requires quick and accurate translation. To manage this stress, interpreters use various techniques like relaxation exercises or mental strategies to stay calm and perform well (Gile, 2009).
- Motivation, persistence, and self-efficacy: Interpreters need to keep learning and adapting in their field. Motivation and persistence are crucial for improving and overcoming challenges. This involves setting goals, seeking training opportunities, and staying dedicated even when faced with difficulties (Gile, 2009). In regard to self-efficacy, it is the belief in one's ability to succeed at tasks. In interpreting, it means having confidence in one's skills and managing the cognitive demands of the job. High self-efficacy boosts motivation and perseverance, leading to better performance and fewer mistakes (Mohammed, 2019).

In summary, effective SI relies on a blend of cognitive, emotional, and psychological skills. Interpreters need advanced language proficiency and strong listening skills for accurate translation. They must also excel in speech production, attention management, and fast processing. Emotional regulation, stress management, and self-confidence help maintain high performance under pressure. Additionally, resilience and self-efficacy are crucial for adapting to challenges and staying motivated. These combined skills ensure interpreters handle complex tasks efficiently and effectively. Mastery of these skills enables interpreters to perform effectively in diverse professional settings, ranging from training classes to international conferences, and diplomatic meetings, and contributes to accurate and efficient cross-cultural communication.

8. Analysis, discussion, and findings

SI is a demanding psychological and cognitive task that requires individuals to listen, comprehend, and immediately render spoken language into another language in real time. While professional interpreters undergo extensive training and experience to master

these skills, undergraduate students often face significant psychological and cognitive difficulties when attempting SI tasks. The researcher observed, noted, and recorded the most obvious psychological and cognitive difficulties that appeared among Yemeni undergraduate trainee students of SI. *Table 1* below shows these difficulties which were discussed one by one according to their frequent occurrence.

Table 1: The Psychological and Cognitive Difficulties Faced by Yemeni Undergraduate Students during SI Tasks

Types of difficulties	Frequency (0-10)	Percentage
Students faced difficulties in: 1. Listening Comprehension	9	90%
2. Short-term memory	8	80%
3. Language production	7.5	75%
4. Processing speed	7	70%
5. Management of attention	6.5	65%
6. Anxiety and stress	6	60%
7. Cognitive load management	5	50%
8. Monitoring and self-regulation	4	40%
9. Problem-solving	4	40%
10. Motivation and persistence	3.5	35%

As shown in *Table* 1 above, students of English and translation encountered great difficulty in listening and comprehension. The occurrence of this difficulty took place so much and reached 90% during the sessions of interpreting. Interpreters must accurately understand the speaker's message in the SL, but it was observed that trainee students faced a big difficulty in listening and comprehending the SL English texts that they had listened to. On the contrary, SL Arabic texts were easy for them to understand and comprehend. This reflects their weakness in English language as a foreign language and their familiarity, to some extent, with their Arabic mother tongue. Another important point to be discussed here, it was apparent that students had difficulty in understanding some of the videos that they watched and listened to from *CNN*, *Alarabiya*,

and *Aljazeera* especially the topics that they had no or little background about them. The instructor had noticeably observed that students' performance was very good if they had a sufficient and reasonable background on the topics they were interpreting from Arabic into English and vice versa. The best example was a report about Yemen in the English language which was shown to them and they interpreted it well due to its relevance to their culture, traditions, country, environment, people, etc. Thus, they were able to interpret appropriately the proper nouns like names of people, places, important landmarks, and many issues related to the topic of the reportage. They could also predict what would come and make decisions quickly while listening to such videos and shows. On the contrary, students failed to interpret thoroughly such topics which were not related to their culture, traditions, habits, environments, etc. They also could not predict what would come and they also collapsed in making decisions. These findings align with the previous research of Gile (2009) and Issa et al. (2021).

It was also found that students of English and translation encountered a big difficulty in short-term memory. The frequency of this difficulty occurred a lot and reached 80% during the sessions of interpreting. Memory is the ability to store and recall information. For interpreters, this includes working memory, which holds information temporarily while interpreting, and long-term memory, which helps remember terms and concepts. Good memory management ensures that interpreters can retain and use information correctly (Dayter, 2020, p. 63). It was noted that those trainee students in SI had problems in memory because they needed to hold segments of the SL in memory while simultaneously formulating and producing the interpretation in the TL. However, they couldn't remember every part of the videos they had listened to. Working memory constraints were shown clearly amongst Yemeni undergraduate students who struggled with limitations in working memory capacity, which is crucial for processing and retaining incoming speech while SI the TL output (Baddeley, 2000). The demands of processing complex linguistic structures,

unfamiliar terminology, and rapid speech rates could overload working memory resources, leading to errors and reduced accuracy in interpretation (Gile, 2009). Consequently, they couldn't produce thoroughly all parts of the videos during the SI process so they went to omission which distorted the shape and soul of the SL texts. This finding agrees with Dayter (2020).

It was noted from *Table 1* above that students of English and translation had difficulties in language production, i.e. the frequent occurrence of this difficulty reached 75% during the sessions of SI. Interpreters must quickly and accurately produce grammatically correct and culturally appropriate language in the TL. In this study, it was clearly observed that most of the time the sample couldn't reflect correct grammatical and cultural sentences especially when they were interpreted into the English language. Again, this reflects their weakness in English structural and cultural elements. This finding goes in line with Aal-Hajiiahmed (2022), Al Zahran (2021), Daminov (2022), Mohammed (2017), and Mohammed (2019). Not only that but their weakness in language production can be attributed to their lack of interest and knowledge in the topics they watched and listened to.

It was obviously observed that students faced lots of difficulties in processing speed. The frequent occurrence of this problem reached 70% during the sessions of the interpreting process. Processing speed is how quickly a person can understand and react to incoming information. In interpreting, it refers to the speed at which interpreters can listen to, comprehend, and translate spoken content. Faster processing speed helps interpreters keep up with the speaker's pace and deliver timely interpretations (Aal-Hajiiahmed, 2022, p. 55). The speed at which they can decode the SL and encode the TL significantly impacts the quality of interpretation (Christoffels et al., 2006). It was noted that the sample exhibited significant issues with speed, as they were very slow and unable to keep pace with the speed of the SL texts they watched and listened to. The result was that they lost a lot of parts of the SL videos as mentioned above and reflected distorted and

incomplete target texts. Sometimes, they couldn't complete the process especially if speakers were talking at a high speed. Furthermore, psychological and cognitive factors can affect the speed at which students process information and produce interpretations, potentially compromising the fluidity and coherence of their output (Davies et al., 2005).

In the same line of discussion, it was obviously noted that students faced lots of difficulties in managing their attention. The frequent occurrence of this difficulty reached 65% during the sessions of interpreting activity. Attention involves focusing on and processing information from multiple sources at the same time. In SI, this means paying attention to the speaker's message while also preparing to translate it into another language. Strong attention and concentration are crucial for delivering accurate interpretations (Li et al., 2022, p. 90). Effective SI requires students to allocate and sustain attention across multiple tasks, including listening, comprehension, and speech production. In this study, students encountered noticeable problems in controlling their attention that arose from distractions, fatigue, or difficulty in prioritizing relevant information amidst competing stimuli (Sweller, 1988). Students had divided attention in which no balancing attention between listening, comprehending, and formulating responses in real-time, and this is mentally taxing, especially for novice interpreters (Macnamara, 2013). This finding agrees with Johnson (2016).

As shown in *Table 1* above, anxiety and stress posed another difficulty for undergraduate students. Through observing the psychological behavior of the students, it was discovered that they suffered a lot from anxiety and stress. Frequently speaking, the percentage of this problem arrived at 60%. Undoubtedly, the pressure of performing in real-time under scrutiny could increase anxiety levels, affecting cognitive functions such as attention and memory (Davies et al., 2005). The presence of students in front of each other as well as the instructor created a lot of shyness, anxiety, and stress. Additionally, fear of failure concerned a lot about making mistakes, i.e., students were afraid not to meet expectations and this

contributed so much to heightened stress levels. High levels of anxiety and stress can impair cognitive functions such as memory retrieval and language processing, leading to reduced accuracy in interpretation (Pöchhacker, 2004). This finding corresponds with Almhasees (2023), Daminov (2022), Gumul (2021), and Li et al. (2022).

Again, it was found that students faced difficulties in cognitive load management. The frequent occurrence of this problem reached 50% during the sessions of SI tasks. It can be said that high cognitive load, exacerbated by the complexity of interpreting tasks and time pressure, posed significant challenges for undergraduate students. Consequently, managing cognitive load involves strategies such as chunking information, using mnemonic devices, and optimizing cognitive resources to enhance performance and reduce mental fatigue (Sweller, 1988; Ericsson & Kintsch, 1995).

Moreover, the researcher observed that students encountered difficulties in monitoring, self-regulation, and confidence. The frequent occurrence of this problem reached 40% during the sessions of interpreting activities. Indeed, continuous monitoring of both languages is essential to ensure accuracy and coherence in interpretation, but, unfortunately, it was found that the sample had difficulty on this side. Thus, on their part, they couldn't monitor as well as self-regulate themselves during the process of SI. This result corresponds with Johnson (2016). In addition, the sample also lost their self-confidence during the interpreting process. Consequently, all these factors affected negatively their interpretation products.

Furthermore, as shown in *Table 1* above, the researcher observed that students encountered difficulties in problem-solving and the frequent occurrence of this problem reached 40% during the sessions of interpreting tasks. Simply, problem-solving is the skill of identifying and resolving issues that come up during interpreting. This includes dealing with unexpected challenges or ambiguities in the SL. "Effective problem-solving helps interpreters manage difficulties and maintain high-quality interpretations" (Daminov, 2022, p. 88). Unfortunately, it was noted that the sample in

this research had a noticeable difficulty in solving most of the problems they had encountered during the interpreting process for the videos they watched and listened to. Finally, although the students had many difficulties and challenges in SI as explained above; it was observed that most of them, i.e. 65% had the motivation and were eager to learn and continue their training. Only 35% of them were hopeless and had neither motivation nor persistence to encounter such difficulties and learn. To be more precise and concise, *Table 2* below summarizes all these difficulties discussed above along with their descriptions and findings.

Table 2: The Summary of Psychological and Cognitive Difficulties Faced by Yemeni Undergraduate Students during SI Tasks

Difficulty	Description	Findings
1. Listening comprehension	Difficulty in understanding SL English texts; better performance on familiar cultural topics.	Students struggled with unfamiliar content; performance improved with culturally relevant material.
2. Short-term memory	Issues with holding and recalling SL segments while interpreting TL.	Working memory constraints led to omissions and inaccuracies in interpretation.
3. Language production	Problems in producing grammatically correct and culturally appropriate language, especially in English.	Weakness in English structure, culture, and lack of interest affected interpretation quality negatively.
4. Processing speed	Speed issues in processing SL and TL, affecting interpretation accuracy.	Slow processing led to incomplete and distorted interpretations, particularly with fast-speaking sources.
5. Management of attention	Difficulty in dividing attention among listening, comprehension, and speech production.	Distractions and fatigue impacted the ability to focus on multiple tasks simultaneously.
6. Anxiety and stress	High levels of anxiety and stress impacted cognitive functions and performance.	Performance hindered by anxiety, fear of failure, and stress from real-time interpreting pressures.
7. Cognitive load management	Challenges in managing high cognitive load from task complexity and time pressure.	High cognitive load led to mental fatigue and performance issues; strategies needed to handle cognitive demands.
8. Monitoring and self-regulation	Difficulty in monitoring and self-regulating the interpreting process.	Issues with maintaining accuracy and coherence; loss of confidence affected performance.
9. Problem-solving	Difficulty in resolving issues and ambiguities during interpretation.	Struggles with solving problems and handling unexpected challenges led to inaccuracies in interpretation.
10. Motivation and persistence	Some lack of motivation and persistence.	Failure to face SI difficulties and learn.

10. Concluding remarks

To conclude, all these findings discussed above reflect the weakness of training programs at Yemeni universities, and the students are not satisfied with whatever is introduced to them in the interpreting classes (Al-Sowaidi & Mohammed, 2023). Our programs in English and translation couldn't enhance students' ability to cope with psychological and cognitive challenges. The lack of supportive learning environments and learning technologies at Yemeni universities couldn't support and encourage students' confidence and self-efficacy in interpreting

tasks. Moreover, many instructors teach SI classes through lecturing and theories and ignore the practical side which is more essential.

11. Recommendations

Based on the findings of the psychological and cognitive difficulties faced by undergraduate Yemeni students during SI tasks, the following recommendations can be made to enhance interpreter training and support students' performance:

- **Recommendations for instructors:**
- Instructors should expose students to more practice and training to help them overcome the problems of listening, comprehension, and memory.
- Instructors should encourage lifelong learning and professional development among students and interpreters and provide opportunities for students to attend workshops, seminars, and conferences focused on psychological and cognitive strategies, technological advancements, and best practices in interpreting to stay updated with industry trends and enhance their skills over time.
- Instructors should offer constructive feedback and reflective practices to students following interpreting exercises. Encourage self-assessment and peer feedback to promote continuous improvement in interpreting skills and address specific cognitive and psychological challenges identified during practice sessions.
- To manage stress and anxiety, instructors should implement stress management techniques and psychological support mechanisms to help students cope with anxiety and stress during interpreting tasks. Techniques may include mindfulness training, relaxation exercises, and cognitive-behavioral strategies to enhance emotional regulation and resilience (Gross & Thompson, 2007; Kurz, 2003).
- Instructors should introduce students to advanced interpreting technologies and digital tools that can aid in cognitive processing and task management. Training on how to effectively use interpretation equipment, digital note-taking systems, and

online resources can optimize cognitive performance and enhance overall interpreting efficiency (Mason, 2010). This recommendation corresponds with Amelina et al. (2022).
- Instructors should focus on an interdisciplinary approach in order to foster collaboration between interpreting studies and psychology disciplines to develop comprehensive training programs. This can incorporate insights from cognitive psychology, educational psychology, and human factors research to inform curriculum design and instructional strategies that aim at overcoming cognitive and psychological difficulties (Gile, 2009; Baddeley, 2000).
- Instructors should focus on specific cognitive training exercises during SI to enhance working memory capacity, attentional control, and cognitive load management. Training should focus on strategies such as chunking information, mnemonic devices, and mental rehearsal techniques (Ericsson & Kintsch, 1995; Sweller, 1988).

- **Recommendations for students:**
Students and trainers of SI can better manage the psychological and cognitive challenges of SI and improve their overall performance in this demanding field if they practice active listening, expand their vocabulary, practice language switching, join interpreting groups, familiarize themselves with interpreting tools and software that can assist with managing their workload and providing practice opportunities, record their interpreting sessions and review them to identify strengths and areas that need improvement. Students also should develop stress-reduction techniques, learn and apply stress-management techniques, such as deep breathing exercises, progressive muscle relaxation, or regular physical activity to manage performance anxiety. Trainee interpreters should enhance memory and concentration through memory exercises and incorporate memory exercises into their study routines. Techniques such as chunking information or using mnemonic devices can improve their short-term memory. They should also practice mindfulness and concentration

techniques to maintain focus during interpreting tasks. Techniques such as meditation or concentration exercises can help improve their mental stamina. In addition, students should be familiar with linguistic elements and cultural values as well as linguistic and cultural similarities and differences between SL and TL in order to develop their language production and get rid of any linguistic and cultural mistakes during the process of SI. This treatment will have a positive effect on their psychological and cognitive performance.

- **Recommendations for material writers, course developers, and department administration:**

Course developers and department administration should integrate modules that address cognitive and psychological aspects of interpreting. This can include courses on memory enhancement, stress management, and attention skills. They should also ensure students have access to a range of learning materials, including textbooks, online resources, and recorded interpreting sessions, to supplement their learning. Moreover, they should organize workshops and seminars on stress management, mindfulness, and mental health to help students handle the pressure of interpreting tasks. Periodically, they should review and update the curriculum based on student feedback, industry trends, and advancements in interpreting practices.

Thus, it can be said that by implementing these recommendations, interpreter training programs can better equip undergraduate students to navigate the psychological and cognitive challenges inherent in SI tasks. These strategies aim to foster competence, resilience, and professional readiness among future interpreters, ultimately enhancing the quality and reliability of interpretation services in diverse linguistic and cultural contexts.

12. Suggestions for further studies

Last but not least, the researcher hopes to serve academia with a practical study that encourages others to discover other lapses not covered here. Thus, further research in the area of SI can be conducted to find out the impact of technology on interpreting performance and investigate how advancements in interpreting technology, such as speech recognition software, influence cognitive processes and performance outcomes among undergraduate interpreters. Another study can be conducted on cultural and linguistic factors to investigate how cross-cultural and linguistic factors influence psychological and cognitive challenges in SI and also identify differences in interpreting performance based on language pairs, cultural contexts, and interpreter background. Furthermore, studies can be done to assess the impact of specific educational interventions, such as mentorship programs, peer support networks, or reflective practice sessions, on students' cognitive resilience and psychological well-being during interpreting training. Moreover, researchers can study the cognitive and psychological implications of remote interpreting technologies (e.g., video remote interpreting, teleconferencing platforms) on interpreter performance and client communication outcomes.

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