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A study on the effectiveness of shadowing on SI performance at the university level

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Abstract---Shadowing is considered one of the important techniques in improving students' language learning skills and simultaneous interpreting performance. The current study investigates the effectiveness of shadowing on simultaneous interpreting at the university level, identifies whether male or female participants perform better in post-test simultaneous interpreting, and highlights students' perspectives shadowing technique. The participants of this study were 36 students from the department of translation, College of Languages, University of Duhok. Two tests, i.e. pre-test and post-test, and a questionnaire have been conducted for data collection. The study has found that shadowing exercises have a significant impact on students' simultaneous interpreting performance. Moreover, there are significant differences between male and female participants in terms of their performance. Furthermore, students possess positive attitudes towards shadowing. In conclusion, the pedagogical implications recommend the adaptation of the shadowing technique to improve students' simultaneous interpreting performance.

Keywords---simultaneous interpreting, shadowing technique, input speech, attention, working memory, attitude.

Introduction

Along with the ongoing development in the world, the need for skilled simultaneous interpreters has expanded since they facilitate settings that involve multicultural and multilingual individuals who meet up to communicate in political, educational, commercial, technical, and other meetings. Interpreting

schools seek to produce qualified interpreters to perform effective simultaneous interpreting (SI) during the sessions and to overcome the shortage of qualified interpreters. Nowadays, over 100 higher education institutions worldwide award certificates in interpreting. The department of Translation, University of Duhok is one of those institutions that encourage the faculty members and students to engage in a more practical and productive interpreting environment. Accordingly, instructors' main purpose attempts to engage students in practical training to develop linguistic and non-linguistic skills that directly or indirectly boost students' efficiency of SI performance. Since several insufficiencies were discovered among students in terms of their performance due to the unavailability of various influential factors such as smart classrooms and cognitive load. To find solutions to these challenges, academic institutions seek for effective training to improve and boost learners' performance in SI.

Among several effective techniques to strengthen students' performance in SI is shadowing. Some experts considered shadowing an effective tool for improving the SI performance of learners as SI is seen as a sophisticated cognitive information processing task (Lambert, 1992; Kurz, 1992). In EFL settings, Tamai (1997) defined shadowing as an active and highly mental behavior in which students follow and verbalize the speech they perceive as simply as possible while simultaneously listening to the spoken speech. During shadowing, learners must listen to the audio and repeat what they have heard. Lambert (1992) stated that shadowing techniques are used for training interpreters and confirmed that shadowing is effective in developing listening, memory, and dividing the attention of students in SI performance. SI requires interpreters to perform interpretation in a timed and accurate manner, it would be significant to explore the different techniques that increase the quality of students' SI performance.

Aims of the study

This study aims at identifying the impact of applying the shadowing technique on the SI efficiency of undergraduates, and also to explore whether male or female participants perform better during SI after taking a 10-week course of shadowing practice. Moreover, the study attempts to highlight the students' perspectives on the impact of shadowing exercises on their SI improvement.

The questions of the study

The present study attempts to answer the following questions:

- 1) To what extent does the shadowing technique improve students' SI performance?
- 2) Is there any significant difference between males and females regarding the performance of shadowing?
- 3) What are students' attitudes towards shadowing?

Significance of the study

The review of the literature shows that there is no study on the effect of shadowing on SI in the Kurdistan Region, this study is seen to be of importance for the translation and interpreting departments in Kurdistan Region. The study

seeks to come up with results on how shadowing practice can be a good technique for improving the SI performance of students and using such an effective method to increase students' motivation in the instructional strategies of interpreting lessons at the undergraduate university level. It also provides insights into students' attitudes toward the implications of shadowing exercises.

Theoretical background

Simultaneous interpreting (SI) is the process of simultaneously converting information from one language to another. Fabbro and Gran (1997) defined SI as a cognitively demanding activity with a variety of factors. In a previous study, Lambert and Mercer (1994) summarized these factors including; a) neuropsychological factors, b) non-linguistic factors of oral communication, and c) psychological, inflectional, and derivational factors of statements in multilingual subject matters. It is worth mentioning that such factors significantly impact the accuracy of interpretation. In this regard, investigations of the temporal factors of SI have demonstrated, for instance, that an interpreter's accuracy is highly dependent on the source materials' nature which refers to the speech input. Hence, the auditory quality and clearness of the input are critical for the effectiveness of the SI of a spoken speech (Pöschhacker, 2004).

Moreover, when the speed of input speech increases, the percentage of accurately interpreted speech decreases (Lee, 1999). Likewise, the higher speech rate of output is associated with more omissions and inaccuracies (Pio, 2003). Accordingly, the delivery pace is determined mainly by the incoming speech speed; besides, lag and simultaneity are unaffected by language combinations, including the SI operation, but the interpreters' qualifications and experience only marginally influence the SL discourse (Chernov, 2004). As such experienced interpreters have more ability to overcome the speed of speeches since they have different background knowledge, which is relatively more potent than fresh interpreters. Moreover, an unfamiliar accent and noisy background place more pressure on the interpreter's brain, leading the interpreter to struggle and misinterpret unknown linguistic material. However, non-native students' speech perception decreases substantially more in noisy contexts than native speakers' (Cooke et al. 2010).

In addition to speech input, attention and memory are two other factors that significantly affect SI accuracy. Attention can be distinguished into two types; **divided** and **selective**. On the one hand, divided attention is a mental action involving attending to two different tasks simultaneously. In this regard, Lambert (2004) stated that; SI is a typical example of divided attention since it comprises multiple separate cognitive processes performed more or less continuously. On the other hand, selective attention involves intentionally focusing on one distinct element of data while ignoring other detectable data. According to Cowan (2000), perhaps some of the vital information is in the center of attention; some may be in an active state, prepared to move to the center as needed; and some may have specific contextual coding in long-term memory available quickly. The strength of the center of attention is restricted. If the input exceeds the limitation, the earlier components in the attention are more certain to be deactivated and transferred from the attention (Haarmann & Usher, 2001).

Alongside attention, memory efficiency is required during SI to retain information needed to assist the learners in this activity. A speedy memory for managing vocabulary and its connotations in both source and target language is essential to help the concurrent processing of understanding, interpreting, and reproducing the speech in another language (Cowan, 2000). Accordingly, Mercer (1997) viewed SI as an information processing task, and the role of memory on SI performance can be confirmed. The storage is probably based on a memory system that would fade after a few seconds only if it was replenished by rehearsal, and also, the visuospatial sketchpad fulfilled the identical role for both visual-auditory inputs (Baddeley, 2007). The renewing operation of the articulatory control system via sub-vocal repetition can avoid content loss from the phonological storage and keep the content more or less forever (Chincotta & Underwood, 1998). The dynamic relationship between new information and knowledge preserved in long-term memory is vitally facilitated by working memory storage systems' abilities (Baddeley, 2000).

Directionality is another factor that affects SI quality which denotes whether interpreting is delivered from the interpreter's first language (L1) into her/his second language (L2) or foreign language, or vice versa. Numerous professional interpreters naturally understand that the problem for L1 to L2 interpreting is mostly in production and also that the struggle for language L2 to L1 interpreting is primarily in comprehension (Chang & Schallert, 2007). Due to grammatical variances among L1 and L2, interpreters must delay their interpretation to construct their intended speech, which might also raise the pressure on working memory effort (Christoffels, 2004). In other words, the cognitive load will rouse due to the dissimilarities between the two languages that the interpreter simultaneously attends.

Furthermore, using figures, statistics, enumerations, and proper nouns in the source text affects SI quality. These variables are described as "problem triggers" Gile (2009), i.e., aspects in interpreting that "increase processing ability needs." Unlike common words, numbers and proper names are rarely attached to any cognitive representation; they are frequently unpredictable, rarely include redundant information, and are non-imaginable over their visible numerical form (Seeber, 2015). These factors have highly accurate meanings, and their omission or misinterpretation may cause miscommunication to be misunderstood and misled (Kadota, 2007). Further, SI interpreters rely heavily on working memory; therefore, when it comes to important names or numbers, they will devote more time to comprehending and delivering them properly. The above-mentioned factors have shown an impact on the SI quality. Therefore, among these techniques that can affect SI is shadowing, which is going to be the main topic of the present study. The next section will shed more light on the technique from different perspectives.

Shadowing

The shadowing technique involves instantaneous listening and speaking. This technique is a language learning tool that positively impacts students' listening, speaking, and reading skills (Nation, 2007). Lambert (1992) explains shadowing in L1 settings as a timed, auditory, reliably measure that entails the immediate

verbalization of transmitted auditory stimuli in the provided language message through earphones, in parrot style. Tamai (1997) characterizes shadowing as an active and highly mental behavior in which students follow and verbalize the speech they perceive as simply as possible while simultaneously listening to the spoken speech. It means that by practicing the shadowing technique the improvement will occur in attention to divide it between two tasks of listening and speaking at the same time, which is a key characteristic of SI quality. Furthermore, shadowing has increasingly been recognized as an effective exercise for the development of listening comprehension (Kadota, 2007). Since listening plays a vital role in speech understanding, shadowing exercises are viewed as a tool to enhance learners' phoneme perception abilities, leading to further understanding of speech (Kato, 2009).

Some researchers believe that shadowing speeches should be combined with complex and accessible materials to improve students' input comprehension (e.g., Hamada, 2011). Nevertheless, others believe the shadowing materials need to be easy since students should only focus on phonological aspects of auditory input (Kadota & Tamai, 2004). In other words, students should not worry about speech's content and significantly preserve the incoming sound waves in their memory. Furthermore, shadowing can effectively improve the two essential factors, memory and attention, considering that this technique has been used in diverse learning settings with specific purposes regardless of the age, gender, and level of learners' language; therefore, choosing suitable materials is crucial. Despite that, the succession of the technique relates to the motivation of learners to attend and undertake the shadowing technique. Accordingly, Dörnyei (2001, p. 28) referred to motivational techniques as "techniques that promote the individual's goal-related behavior". For example, all students need to be motivated to improve their perceptual automaticity in language processing by shadowing practice.

Several scholars have presented a combination of shadowing modules. Some of these modules have been engaged in psychology and linguistics reflections, while others were deployed in language learning. Kadota and Tamai focus on developing listening comprehension abilities. According to (Hamada, 2012), learners should practice other exercises with shadowing, including reading and listening exercises, to develop their listening comprehension abilities. Likewise, Oki (2011) claims that reading written text allows students to shadow more effectively. Similarly, Shiki et al., (2010) stated that other tasks, such as translation, reading, and listening, are strongly encouraged to help students feel challenged in exercising the shadowing method. This indicates that relying simply on the listening in shadowing strategy to increase students' skills would be ineffective. Therefore, it is essential to consider other activities during the shadowing technique to have a more significant result.

The impact of shadowing exercise on simultaneous interpreting

As a dynamically timed and bounded mental activity, SI requires the interpreter to perceive and analyze the incoming message, then store input segments in the memory and convert a previous segment from the received language into the intended language (Lambert, 1992; Padilla et al., 2005). To do so, the interpreter

must master SI skills, which include cognitive aspects, to respond to stimuli as quickly as possible to reduce cognitive load and lead to accurate interpreting. Shadowing exercise is an activity that could be particularly well suited for practically improving simultaneous interpretation skills. According to (Hamada, 2016), shadowing and interpreting have one common characteristic: both involve simultaneous message receiving and producing. Nevertheless, there is no added complexity in shadowing since there is no need to reinterpret a message, and just a single language is required. This means that the brain structures engaged with vocabulary recall, verbal memory, and linguistic perception are more active in SI (Rinne et al., 2000).

Shadowing activity promotes the SI process in listening comprehension and provides retention of information and production because shadowing exercise has an impact on the divided attention process. Previous research (e.g., Oki, 2011) has indicated that students' attention is greatly on phonological characteristics of speech rather than on the content meaning of speech during shadowing, and the time lag or the ear-voice spanning (EVS) between the input speech and output speech is different from one person to another. Perhaps one student can listen and reproduce the speech simultaneously, and another student needs a greater time to listen and reproduce the speech. This is due to the cognitive ability of every single student. This fact may imply SI too. Moreover, due to the nature of production in both tasks, reformation is required in SI but not in shadow. According to Baddeley (2007), the shadowing technique enhances speech understanding by strengthening the phonological loops of the human brain which is a component of individual working memory.

Several studies were carried out to identify the impact of shadowing exercises on the SI performance of learners. For instance, ZhangLiHua (2001) conducted an empirical study involving third-year students of English language and culture faculty and revealed that the shadowing technique had improved learners' SI performance. Results suggested that the experimental group that used shadowing outperformed the control group. Esmerligil (2012) studied the effect of shadowing exercise in SI training of third-year students of the Department of Translation and Interpretation. The study's results revealed that shadowing constitutes a valuable pre-SI training technique that seriously contributes to correcting pronunciation errors. In another case study, (Nguyen et al., 2020) conducted a study of 54 learners who took part in a study and found out that shadowing strategies had only a little effect on the experimental group's proficiency development, and students had positive attitudes regarding the use of shadowing in interpreting lessons.

According to the literature, shadowing has a vital role in improving the SI performance of learners, the present study aimed to identify whether the shadowing technique could have any impact on the SI performance of Kurdish undergraduate students; if so, whether males or females take more benefit of the technique.

Methodology

Setting and participants of the study

The current investigation is carried out at the department of translation, College of Languages, University of Duhok. Fourth-year students were chosen to take part in this investigation since they had previous experience in interpreting. As they had attended the required interpreting classes all participants were considered to have more or less homogeneous academic backgrounds, as well as the essential knowledge and abilities of SI performance. For this purpose, 36 students have been selected to participate in the experiment and they were randomly divided into two groups (control and experimental); both groups undertook the pre-test and post-test. 8 male and 10 female students practiced shadowing exercises in the experimental group. Regarding participants' native language, the Kurdish language was the mother tongue.

Instrument

The experimental design of pre-test and post-test was used in this study to obtain data on whether the shadowing technique can affect students' SI performance. The experiment was conducted for ten weeks in the second semester of the academic year 2021-2022. One week was allocated for pre-test and post-test, and nine weeks of shadowing exercises were implemented with the experimental group. The two groups of control and experimental undertook the same pre-test and post-test. Then, the experimental group participated in shadowing training classes twice a week. Table (1) describes the procedure of the experiment. As a practical investigation, the researcher adapted the modules of Kadota and Tamai (2004) and Takizawa (2002) to improve students' SI skills.

Table (1) shadowing procedure used in the study

Stage Technique

1. Pre-test
2. Listening + mumbling
3. Slash reading
4. Parallel reading
5. Prosody shadowing
6. Delay shadowing
7. Translation and shadowing
8. Content shadowing
9. Interpreting
10. Post-test

Besides the experiment, a questionnaire of 30 items has been used. 9 students from the experimental group were selected to fill out the questionnaire. Subsequently, the questionnaire adapted from the *motivation and attitude of learners towards the shadowing technique* from Sumiyoshi and Svetanant (2017), is modified to meet the goals of the current study. The questionnaire utilized consisted of demographic information and (30) questionnaire items. These items were categorized into six categories, and a six-point Likert scale was used to measure the items, with six indicating 'Strongly agree,' 'Agree,' 'Partially agree,' 'Partially disagree,' 'disagree' "strongly disagree.

Reliability and Validity of the questionnaire

The questionnaire was reviewed by several experts, including four Assistant professors in applied linguistics who assessed its validity in terms of the clarity, practicality, readability, structure, and style of the items as well as their overall layout and design. Besides that, to test internal consistency for each questionnaire category, Cronbach alpha on SPSS was utilized. The high consistency is considered within listening and speaking improvement ($\alpha=.829$), satisfaction ($\alpha=.802$), and challenges of shadowing ($\alpha=.800$). The consistency within the category of SI improvement was ($\alpha=.799$), motivation ($\alpha=.724$), and feedback ($\alpha=.710$).

Data analysis procedures

To evaluate the effectiveness of the shadowing technique on SI, t-test analysis in a statistical package for social science (SPSS) was used to analyze the obtained data. The T-test inferential statistic of all independent and dependent variables is applied to denote the means, standard deviations, and a set of scores for learners' performance. As for the questionnaire; data were entered into (SPSS) to measure the frequency and percentage of responses and to address research question three.

Results and Discussion

For analyzing the obtained data, students' pre-test and post-test scores were evaluated. Then, the raw data was entered into SPSS software for further analysis. The significant findings of the investigation are summarized and addressed the research questions as follows:

RQ1. To what extent does the shadowing technique improve learners' SI performance?

The descriptive statistics of the control and experimental groups, as seen in table 2, showed that the mean scores of both groups improved after ten weeks of exercise which reveals that the experimental group improved way better than the control group (71.39%, $SD=10.124$) (47.83%, $SD=12.807$) respectively.

Table 2 Control group vs. experimental group post-test scores

	group	N	Mean	Std. Deviation	Std. Error Mean
posttest	control group	18	47.83	12.807	3.019
	experimental group	18	71.39	10.124	2.386

The independent sample t-test compares the means of two independent groups to determine whether the difference in their performance is statistically significant. The t-test finding, as seen in table 3, shows a significant difference between the control and experimental groups' test results ($p=.000$). This means that the

experimental group that received ten weeks of a systematic shadowing practice improved more than the control group.

Table 3: Independent T-Test results of post-test scores for control group vs. experimental group

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.117	.735	-6.122	34	.000	-23.556	3.848	-31.375	-15.736
Equal variances not assumed			-6.122	32.27	.000	-23.556	3.848	-31.391	-15.720

The table above demonstrates that students' SI performance improved after applying ten weeks of shadowing. At least three reasons are considered for this result. Firstly, attention can be increased through shadowing exercises. This finding goes in line with what has been found by Kadota (2007) who described shadowing as a switch of perception of phonemes and content comprehension. Shadowing allows participants to control their attention to shift between receiving messages. Secondly, shadowing can have a positive impact on participants' memory. In this regard, Baddeley (2007) revealed that shadowing improves speech comprehension by enhancing the human brain's phonological loops which is a part of memory. Thirdly, borrowing (Hamada, 2011) theory of using combined more and less difficult materials, the materials used in this experiment were comprehensible. From Hamadas' viewpoint, tasks should be challenging and attainable so that participants' comprehension improves as well as phoneme perception. The materials used in this experiment appear to meet this condition.

RQ2. Is there any significant difference between males and females regarding the performance of shadowing?

The descriptive statistics for female and male participants' performance, as seen in table 4, illustrates that the mean score for female participants is greater than male participants (74.80 > 67.13) respectively.

Table 4. Post-test male and female participants of the experimental group

	Gender	N	Mean	Std. Deviation	Std. Error Mean
posttest	male	8	67.13	11.544	4.081
	female	10	74.80	7.800	2.467

To examine whether or not there is a significant difference between male and female performance, the researcher utilized an independent sample t-test as shown in the table below. The independent sample t-test in table 5 revealed there is no significant difference among participants in terms of their gender as the test result is ($p = .112$). Hence, the statistical results of the second research question indicated that both males and females performed similarly.

Table 5 Independent Samples Test of experimental male and female participants' post-test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Diff.	Confidence Interval of the Diff	
								Lower	Upper
Equal variances assumed	1.711	.209	-1.682	16	.112	-7.675	4.563	-17.348	1.998
Equal variances not assumed			-1.609	11.821	.134	-7.675	4.769	-18.083	2.733

Table 5. demonstrates that gender has no impact on the participants' performance. Both males and females show almost the same performance in SI. Thus, there is no significant difference between male and female participants.

RQ3. What are the students' perceptions towards the application of the shadowing technique in interpreting classes and its impacts on interpreting fluency?

According to observations made during shadowing activities, the students were more engaged and interested in interpreting classes when using the shadowing technique. The majority of the students (80%) agreed that shadowing improved their listening skills. Also about (90%) of students think the more they practice prosody shadowing, the more they will be familiar with intonation and accents since prosody is related to input speeches' rhythm. Furthermore, all students (100%) agree that shadowing improved their speaking skills. It can be said that students have a positive attitude towards the impact of the shadowing technique on listening and speaking skills. This finding verifies the finding of Tamai (2005),

who found out shadowing is likely the best approach for Japanese students to increase L2 listening comprehension.

In the second category (The effect of the technique on SI) most of the respondents (90%) revealed that shadowing affects their SI performance and the content shadowing significantly enhances their interpreting skills. Likewise, (90%) of students agree that they can easily focus on input speech after shadowing exercise. They believe this may lead them to become better at interpreting tasks. On the other hand, (70%) of students agree that they practice shadowing to perform better in consecutive and SI lessons. It is obvious from the obtained data that the respondents recognize the importance of the shadowing technique and its impact on the quality of SI performance.

This finding confirms the study conducted by Esmerligil (2012), who studied the impact of shadowing on the quality of SI. The researcher stated that shadowing constitutes a valuable pre-SI training technique that also seriously contributes to correcting pronunciation errors in novice interpreters. Regarding attention, Hamada (2016, p. 17) explained that “Learners can concentrate most attention on what they hear when only listening, but when they shadow or translate, their attention is shared by listening and repeating (or translating).”

The third category of items (The challenges of shadowing technique) regarding students' attitudes towards the challenges they encountered during shadowing. About (50%) of students explained that shadowing exercises make them tired and time-consuming. However, (50%) of students view shadowing as an interesting technique despite its challenges. Among negative statements, (60%) of the students agree that they get frustrated if they cannot attend the speed of the speech. Furthermore, (60%) of participants agree that they can start with shadowing easily. This depends on participants' ability to undertake the task; overall, easy materials are suggested to be suitable for shadowing exercises. Almost all of the respondents (100%) agree that interpreting is way harder than shadowing.

Hamada (2016) stated that students eventually become tired and lose interest unless motivation is continually maintained and preserved. Motivation plays an essential role during the exercise; therefore, specific pedagogical tips must be used to encourage participants not to get bored during the exercise. In the fourth category (Participants' satisfaction in completing the technique) almost all of the participants were satisfied with the technique, (100%) of participants expressed that they will continue exercising even after the training course finishes. Moreover, (80%) of the participants are going to suggest this technique to their friends who desire to learn a new language. The obtained data shows that (90%) of the participants consider shadowing would assist their English language-focused component. Furthermore, the majority of the participants (90%) tried to understand the content of the speech used during shadowing classes. The finding which indicates the importance of students' satisfaction confirms Dörnyei's (2001) idea and emphasizes the need to raise participant satisfaction by having teachers evaluate their successes and improvement. Concerning the understanding of the speeches. Moreover, as described in Nation's (2007) four standards, language learning programs require a range of meaning-focused inputs, meaning-focused

outputs, language-focused learning, and proficiency progression. In the language-focused component, shadowing can be useful (Hamada, 2016).

In fifth category (Participants' motivation towards the technique) is about students' motivation toward shadowing. The majority of the participants (90%) believe that shadowing is a good technique for dual-task activities i.e., SI. Dual-task refers to attending to two different cognitive work concurrently. The majority of the participants (72%) practice shadowing to sound like natives. While (99%) of the participants stated that their SI skills improved since the first week of shadowing practice. Furthermore, participants prefer to practice shadowing with a reasonable speed of speech, as (84%) of them disagree with choosing slow-speed speeches.

It is obvious from this data that the participants were motivated to practice shadowing for different intentions. Yet, some of the participants were inclined to practice shadowing at a reasonable speed. Since phonological loop memory has limited capacity, the performance will be poor due to memory load if there is a slow speech rate. Hence, participants of the current study show a very positive attitude toward shadowing.

Within the sixth category (Participants' perception of availability of feedback) most of the participants showed a positive attitude towards the feedback of the instructor in charge which plays a significant role in the successful implementation of the technique. All of the participants (100%) agree to be provided with corrections for their mistakes. The majority of the participants (85%) want to practice shadowing after receiving feedback on their performance. By re-training, participants will have the opportunity to practice more accurately since they seek to avoid similar mistakes. In terms of working memory, all participants believe that shadowing affects working memory capacity during SI tasks. Improving shadowing skills, according to our study findings, will help to build phonological working memory and to recall speech content.

In this regard, Hamada (2016, p.83) found that "Instructors' course-specific decisions (e.g., materials, teaching methods, and tasks) and teacher-specific performance (e.g., enthusiasm, feedback, building relationships with class) are the two important factors." These factors closely work on the psychological aspects of participants' learning. All in all, the analysis of the qualitative data shows that this technique will improve their SI skills. This can lead to conclude that students are aware of the effectiveness of shadowing in this field.

Conclusion

Fourth-year Translation majors are expected to steadfastly adhere to their appropriate ways because improving interpretation skills is practically impossible if the learning process is carried out without any strategies. To strengthen their Kurdish-English and vice versa interpreting performances in general and their fluency in particular, shadowing was provided to them as the subject of the study in the hopes of offering a novel learning strategy.

To achieve the aims of this study, two tests were carried out with 36 fourth-year students at the University of Duhok, College of Languages, Department of Translation. The participants of the study were divided into two groups i.e., the experimental group and the control group. The experimental group received extensive training with shadowing and practice using this approach in class over ten weeks under the careful supervision of the researchers. The experiment's findings showed how much shadowing affected the performances of Kurdish-English and vice versa interpreters, particularly in terms of fluency.

The data analysis shows that participants have positive attitudes toward shadowing and they believe that it is a very useful technique for improving and strengthening their SI skills. It is also concluded that students' test scores in the experimental group scored way higher than the control group. In terms of gender, the study found that there is no significant difference between male and female participants as they both achieved roughly the same scores in the post-test.

Limitations

There were several limitations encountered in the present study. First, the restricted time of the experiment of this study, having extra time would help to do quite a deeper investigation into the areas and the application of additional treatments of shadowing tools. Although the data indicate that the shadowing technique strengthens participants' SI performance, the theoretical support for this finding must be studied in-depth.

Pedagogical Implication

For a proper application of this technique, instructors recommended carefully selecting the materials for shadowing so that participants will not be exposed to negative factors such as tiredness and confusion. Moreover, understanding the perspective and motivation of participants toward the technique is influential and critical. When having a large group of participants, forming small groups of five to eight would be the most incredible option to solve the problem of sizable classrooms.

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