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The Impact of Memory on Consecutive Interpretation Quality of Iranian EFL Students

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Abstract

Having its status in the communication process, consecutive interpretation is generally assumed to be demanding with a vast number of skills. Research on these skills and their impacts on this kind of interpretation are still at the primary stage. This research aimed at investigating the impact of memory quotient on consecutive interpretation quality of Iranian EFL students. To this end, using a convenience sampling method, fifty-five English students in Master of Art were recruited after passing an English language proficiency test. Then Wechsler Memory Scale test was taken. Next, the participants were asked to interpret consecutively an 8-minute speech from English into Persian to assess their interpretation quality. To assess the quality of the participants' interpretation, the adapted version of the grid developed by the South African Translators' Institute in their interpreter-accreditation exams was used. To investigate the hypotheses, inferential statistics including Pearson correlation, one-sample T-test were used. The findings of the study showed that there was a significant relationship between memory quotient and consecutive interpretation quality. The results also showed that there was no need of excellent memory quotient for Iranian EFL interpreters. However, by improving memory quotient, the quality of interpretation will be improved too.

Keywords: Consecutive interpretation, interpreters, memory quotient, interpretation quality, Iranian EFL students

Introduction

Nowadays, the need for exchanging all kinds of sciences, different cultures, beliefs and opinions and communicating with other societies is highly felt. Therefore, interpreters are expected to do their job professionally, if they fail to do it properly, the communication between two different linguistic groups may be broken down. Thus the skills and competences that interpreters acquire during their training and studies should enable them to do their job properly

and to communicate successfully. Hence, the objective of this study is to find out the impact of memory as a skill on consecutive interpretation quality to help interpreters do their job properly. Furthermore, this study tries to determine whether all expert interpreters have high memory quotients or not.

Interpreting as a modern profession has established its status in today's international communities and it can become one of the hot issues that received great attention. Among the prerequisites for good interpreting like linguistic skills, i.e. the knowledge of two languages as possible, some other factors are vital like the knowledge of political, economic, social and ethnic differences. Moreover, mental factors such as mnemonic capacity, a high level of concentration, good tolerance to stress are really important. Gile (1992), in his model named 'Effort Models' for interpreting, mentioned the memory effort as a storage mechanism where information is temporarily kept before further processing takes place. The other efforts are the Listening and Analysis Effort, the Production Effort, and the Coordination one. Similarly, Ma (2013) stated that "the interpreter's memory plays a crucial role, and is a decisive factor in whether this procedure is successful or not or at least in how much the interpreter can get from the source's speech" (p. 1232). Hence memory plays a major role in interpreting.

With attention to consecutive interpreting more than other modes like simultaneous and whispering, in this study, the impact of memory on the quality of the consecutive interpretation is investigated. Consecutive interpreting (CI) is "a process in which adequate information is orally presented and transferred into another linguistic and cultural system" (Hu, 2006, p. 3). Gile (1995) stated that consecutive interpreting is performed in two phases: the comprehension phase (or listening and note-taking phase), and the speech production (or reformulation) phase. Consecutive interpreting has been classified by Christoffels (2004) into two types; discontinuous and continuous, based on the time allowed for the interpreter to interfere and translate. However, the process in both types is the same and the difference is only in timing. In short, in consecutive interpreting, the interpreter listens to the speaker and after one segment she/he interprets the speech into the target language. Additionally, Weihe, (2007) stated that consecutive interpreting involves many skills, such as short-term memory, note-taking, theme-identifying, reorganization of the target language, public speaking, and so on. Movahedi and Dashti Rahmatabadi (2016) also stated that:

> "Short-term memory (STM) plays a major role in interpreting. When we receive an input from the environment, it is transferred to our sensory registers where it remains for less than a second. The message is encoded either in the form of acoustic, visual, or semantic data and thereafter moves to our STM where it remains for less than thirty seconds. After this stage, the message may move to our long term memory (LTM) where it will remain forever. This will depend upon whether or not the message is coded, retrieved, or rehearsed. If not, the message will be forgotten. Data in interpreters' LTM will help them to put the information they hear into context, but STM is of immediate assistance without which they will not be able to function properly".

As mentioned above, memory is an essential skill in interpreting. Moreover, according to Yenkimaleki and Heuven (2017), "memory plays a key role in successful interpreting since decoding the input, computing the meaning and encoding the information are all mediated by memory" (p. 159). Therefore, to have a good interpreting output it is essential to investigate the impact of memory on interpreting. Yet, research on interpreting is still at the primary stage and has received little experimental attention. Moreover, research on this field is useful for syllable designers of this field to plan and structure this course and syllabus to effectively reach

desired instructional goals. It is also important for interpretation teachers to identify and describe their objectives and to provide student's needs. Another main point which makes the present study important is to provide students with logistic information they will need to succeed in the course. As mentioned earlier it helps interpreters do their job better.

Interpretation quality is, as even the briefest glance at the literature will confirm, a complex subject. Although many authors have focused on establishing acceptance criteria for assessing interpreting quality, these need to be better defined and universally accepted. From a quick look at the literature on the subject, there emerges a confusing jumble of characteristics, criteria, factors, features, parameters, and variables directly or indirectly correlated with the quality of the interpretation. Pochhacker (2013) argued in his paper, the notion of quality in simultaneous conference interpreting is no longer, or not so much elusive as complex. Like quality in general (according to the ISO definition), it is intrinsically relative and hence cannot be fixed on one particular element. He sought to highlight that the goal of coming to terms with the conceptual complexity of quality, which includes various dualities and interrelations at different levels, is best served by a two-pronged, or multidimensional, analytical as well as methodological approach. On empirical studies, Jiliang (2011) found that training on listening comprehension in interpreting could improve beginners' quality of output. The findings were: (1) the training has effectively improved listening comprehension skills; (2) the training helps increase the use of listening comprehension skills, especially the four skills of pronunciation flow listening, key from the perspective of effort model. All these empirical studies reach a conclusion from a certain perspective and are of far-reaching significance for interpreting training.

Moreover, in their study, Pignataro and Velardi (2013) attempted to outline quality criteria in Media Interpreting (MI), with a context-based approach. They explained that Interpreting for the media often (but not always) means and this was the case – that the interpreter had to perform as well as being visible, namely in terms of communicative and rhetorical skills. Stern and Hale (2015) in Sharing the Responsibility for Interpreting Quality reported on the results of a small survey of delegates and interpreters working together in the context of annual international meetings of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). The results of this small case study showed that most of the delegates who responded were aware of interpreters' needs and of their influence on the quality of interpreting.

Daro (1997) had a research on experimental studies on memory in conference interpretation. What presented in Daro's work was an attempt to make interpreters, student-interpreters, and possibly also their trainers understand that memory is multifaceted and that it is not enough to simply state that "interpreters have to improve their memory skill" or that one of the prerequisites of a good interpreter is a great memory. Further, Neisser and Hyman (2000) and Klingberg (2010) have investigated a variety of experimental variables to understand better the structure of the memory storage system and the processes of remembering and forgetting. Key variables studied include the type of materials to be remembered, such as words, sentences, or pictures; the order of presentation; and the order of recall.

Liu et al. (2004) described an experiment that aimed to determine if performance differences exist in simultaneous interpreting by individuals with similar general cognitive abilities, but different skills specific to the task of simultaneous interpreting. Professional interpreters' performance in simultaneous interpreting from English into Mandarin was compared to that of two groups of student interpreters, beginners and advanced. The results showed that the professional interpreters who were not different from students in their general working memory capacity outperformed student interpreters. This difference was attributed, at least in part, to

the development of specific skills in managing competing demands on limited cognitive resources. In another study, Kopke and Nespoulous (2006) reported an in-depth investigation of working memory capacity among 21 professional interpreters (experts), 18 second-year interpreting students (novices) and two control groups (20 multilingual and 20 students). Tests involved either short-term retention alone; short term retention and processing in a recall task with articulatory suppression, a listening span task, and a category and rhyme probe task; or attention alone in a unilingual and bilingual Stroop test. No between-group differences in simple span tasks and the Stroop test were found. Significant group effects were observed in free recall with articulatory suppression, in the category probe task and in the listening span task. The best performance was always produced by the novice interpreters rather than by the experts.

In the study done by Christoffels, de Groot and Kroll (2006) they examined performance on basic language and working memory tasks that have been hypothesized to engage cognitive skills important for simultaneous interpreting. The participants were native Dutch speakers proficient in English as a second language. They compared the performance of trained interpreters to bilingual university students (Experiment 1) and to highly proficient English teachers (Experiment 2). The interpreters outperformed the university students in their speed and accuracy of language performance and on their memory capacity estimated from a set of (working) memory measures. The interpreters also outperformed the English teachers, but only on the memory tasks, suggesting that performance on the language tasks was determined by proficiency more than cognitive resources. Taken together, these data point to (working) memory as a critical subskill for simultaneous interpreting.

Consecutive interpretation best suits the situations involving a small number of people, or where a personal touch is required. Examples would be business meetings, press conferences, interviews, teleconferences, or any type of one-on-one exchange. Therefore, this kind of interpretation has become one of the hot issues that received wide attention. Yet, research on interpretation is still at the primary stage and has received little experimental attention. For this reason, more studies need to be done in this field specifically in Iran. The quality of all kinds of interpretations is a matter of present debates even though interpretation's standards exist. There are many factors that effect on the quality of interpretation and these factors have not been studied enough and much more information is needed to obtain a better quality of Iranian interpreters.

Studies in this subject and specifically in Iranian context place are still essential because interpreters are the most important factors on the interpretation's quality. Interpreters must listen to a speech sequence of several minutes and reformulate of its content into the target language. Memory, as related to interpretation training, has been regarded as an important skill for interpreting, especially consecutive. The reason for focusing on the impact of memory on this kind of interpreting is that interpreter's memory seems to have an influence on the interpretation's quality. Therefore, further researches seemed necessary to expand upon this field specify whether memory has any significant effect on the quality of consecutive interpretation. The main purpose of this study is to determine the impact of memory quotient on consecutive interpretation quality of Iranian EFL interpreters and how it affects this kind of interpretation. Furthermore, this study tries to determine whether all expert interpreters have high memory quotients or not. The present study designed to investigate whether people with low memory quotient can be expert interpreters. Consequently, the present study is an attempt to answer the following research questions:

1. Is there any significant relationship between memory quotient and the quality of consecutive interpretation of Iranian EFL interpreters?

2. Do consecutive interpreters need excellent memory quotient for interpreting?
3. Does memory quotient influence on the consecutive interpretation quality?

Method

Design of the Study

The design of this quantitative study is causal-comparative in nature. In this design, the cause will be identified as the interpreter's memory, and its impact on the interpretation quality will remain to be investigated.

Participants

In this study, a convenience sampling method was used and 55 English students in Master of Art were recruited from the Islamic Azad University, Kermanshah Branch for this experiment. There were 43 female and 12 male postgraduate students aged between 23 to 40. They all had passed at least four translating and interpreting university courses and oral reproduction course, too. Besides, they were examined by the MSRT (Ministry of Science Research and Technology) test, and those who got at least 50 were chosen as participants of this study. Therefore, they had an effective command of English. The convenience sampling method was used because of the availability of an adequate number of participants and the level of competence. Participants' willingness to take part in this study was an important factor as is the case in all of these kinds of researches carried out on human beings. The listening span test lasted approximately thirty minutes for each participant.

Instruments

MSRT Test

The MSRT (Ministry of Science, Research and Technology) is a test taken by the Ministry of Science, Research and Technology of Iran for determining the level of English for Ph.D. students and also, those who want to continue their studies abroad in MA. The MSRT certificate is accepted in many countries in the world. This English language test includes listening (30 questions), grammar (30 questions), and reading comprehension (40 questions) parts. A total of 100 questions are available in a multiple-choice test. The authors of this study have chosen the exact MSRT test taken in 2015 for assessing the level of English for participants of the study.

Wechsler Memory Scale Questionnaire

For measuring the participant's memory quotient, the Wechsler memory scale questionnaire test was used. The Wechsler Memory Scale (WMS) is an individually administered test designed to assess various memory and working memory abilities in individuals aged 16−90. The WMS contains a total of seven subtests: three subtests include logical memory, verbal paired associates and visual reproduction and four subtests include brief cognitive status exam, designs, spatial addition and symbol span. Logical memory subtest assessed narrative memory under a free recall condition. Two short stories were presented orally. The examinees were asked individually to retell each story from memory immediately after hearing it.

A Radio Report for Interpreting

The students interpreted consecutively an eight-minute speech from English into Persian - their mother tongue. The original speech was delivered by a recorded native speaker of English. The topic of the speech was 'Festival Tourism'. It was a radio speech chosen from 'English for International Tourism' book. The students' performances were recorded on a voice recorder,

and then analyzed according to the Table 1, shown in the following part to assess their performances.

Marking Grid

The marking grid used as a tool for obtaining data by assessing the participant's interpretation, it was taken from '*Quality-assessment Expectations and Quality-assessment Reality in Educational Interpreting: An Exploratory Case Study*' by Foster (2014). It was an adapted version of the grid used by the South African Translators' Institute (SATI) in their interpreter-accreditation exams. The original SATI grid had four categories: accuracy and coherence of message; target language (TL) vocabulary and register; TL grammar, idiom and purity; and interpreting technique. Each of these categories provided a list of constituent components in brackets after the main category heading. Although the content was presented quite compactly, the layout of the SATI grid made quick reference rather difficult. It differed from the SATI original in that it divided performance into three broad categories: content, form and interpreting skills. Each of these categories had at least one major component, with examples (which could be considered subcomponents) provided as bullets below the major component.

Table 1: The Adapted Marking Grid

Performance		**Mark out of**	**Comments**
Content	Message accuracy and cohesion - equivalent meaning conveyed fully names, dates, numbers, abbreviations, acronyms, etc. conveyed accurately - ability to deverbalize the message (not interpret liter ally) - cultural/subject knowledge	10	
Form	TL vocabulary and register - applicability of vocabulary, terminology, register TL grammar, idiom and purity - correct use of concord, tense and syntax - use of prepositions the same as a mother-tongue speaker	10	
Interpreting Skills	Listening skills Analysis Concentration Problem-solving Paraphrasing Presentation - fluency (little or no hesitation or repetition; ability to vary *decalage* ["following distance"]) - voice quality, e.g. voice and breath control Correct use of equipment Conduct, e.g. professional interaction with colleagues, way with which documents and information are dealt	10	

Reliability and Validity of the Instruments

The reliability of the measures and instruments was estimated as a preliminary step by Chronbach's alpha. Total reliability was estimated to be 0.85 which is accepted as a reliable score. Moreover, external content and construct validity of the MSRT test and the listening track and the marking grid were examined and confirmed by two experts who are both expert interpreters and university professors at the Islamic Azad University, Kermanshah Branch. External content and construct validity of the translated test for Wechsler Memory Scale was confirmed by two psychologists, as well.

Procedure

First, the MSRT (Ministry of Science Research and Technology) test was taken because of assessing the participants' proficiency of English language. Then, the participants all together were given Wechsler's memory questionnaire including seven sub-tests (three subtests include Logical Memory, Verbal Paired Associates and Visual Reproduction and four subtests include Brief Cognitive Status Exam, Designs, Spatial Addition and Symbol Span) in one class. It took about 30 minutes in one day.

Verbal paired associates subtest assessed verbal memory for associated word pairs. The examiner read 10 or 14 word pairs to the examinee. Then, the examiner read the first word of each pair, and asked the examinee to provide the corresponding word. There were four trials of the same list in different orders.

Visual reproduction subtest assessed memory for nonverbal visual stimuli. A series of five designs was shown, one at a time, for 10 seconds each. After each design was presented, the examinee was asked to draw the design from memory.

While optional, brief cognitive status exam subtest evaluated a variety of cognitive functions by asking the examinee to perform simple tasks:

- Orientation to time
- Mental control
- Clock drawing
- Incidental recall
- Automaticity and inhibitory control
- Verbal production

Design subtest assessed spatial memory for unfamiliar visual material. The examinee was shown a grid with 4-8 designs on a page for 10 seconds, which was then removed from view. The examinee then selected the designs from a set of cards and places the cards in a grid in the same place as previously shown.

The spatial addition subtest evaluated visual-spatial working memory using a visual addition task. The examinee was shown, sequentially, two grids with circles. She/he was then asked to add or subtract the location of the circles based on a set of rules.

The symbol span subtest evaluated visual working memory using novel visual stimuli. The examinee was briefly shown a series of abstract symbols on a page and then asked to select the symbols from an array of symbols, in the same order they were presented on the previous page.

Then, a simple procedure was employed to test the participants' delivery and presentation. The participants seated in a classroom equipped with a voice recorder were requested in turn to interpret consecutively an eight-minute track individually and without using any dictionary.

The track was played totally twice, and then it was played by pauses (after each segment) for each participant. Each participant was supposed to interpret it and then his/her voice was recorded. The listening span test lasted approximately 30 minutes for each participant. They were provided with a sheet of paper for note-taking. Task instructions, of course were introduced before the track was played.

Data Analysis

After data entry in SPSS software version 21.0, the appropriate statistical analysis including descriptive statistics (frequency, percentage, mean and standard deviation) was used to analyze data. In order to investigate the first, second and third hypotheses, inferential statistics including Pearson correlation, one-sample T-test, correlation, and One-Way ANOVA were used, respectively.

Results

Description of the Sample

Before analyzing the data and presenting the results, it is better to describe data to be more familiar with the research variables. Clearly, statistic describing of data is prior to statistic induction, and it helps recognizing models dominated on data. The descriptive indexes (mean, standard deviation, skewness) of the research variables and its subscales are shown in Table 2.

Table 2: Descriptive Indexes of the Research Data

	N	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic
Content	55	5.8727	1.95367	-.387	-.750
Form	55	6.6000	1.67332	-.021	-.689
Interpreting Skills	55	5.8727	1.82630	-.089	-.597
Translate	55	18.3455	5.16834	-.269	-.623
Brief cog stat	55	5.8545	.40452	-2.896	8.458
Spatial addition	55	4.8000	.44721	-2.166	4.202
Symbol span	55	5.1000	2.24310	-.864	.752
Logical memory	55	8.1000	2.40640	.349	-.426
Design	55	6.2182	1.69630	-2.859	8.172
Visual reproduction	55	11.0000	2.46456	-1.055	.988
Verbal paired associated	55	16.8000	3.78789	-.641	-.631
t.row.score	55	57.9636	8.24388	-.106	-.590
Age range	55	35.6182	2.75204	.438	-.173
Modified score	55	93.4000	8.48223	-.058	-.578
MQ	55	93.8909	12.89512	.120	-.333
Valid N (list wise)	55				

Test of Normality Distribution

Pearson correlation coefficient, one-sample T-test, and variance analysis were used for the examination of the study hypotheses. Before showing the results, it is necessary to investigate the normality of the scores. The normality of the score distribution was checked by non-parametric one-sample Kolmogorov-Smirnov Test. As it is shown skewed distribution in each variable, consecutive interpretation quality and memory quotient, is between -2 and +2, therefore the distribution of the considered variable scores is normal.

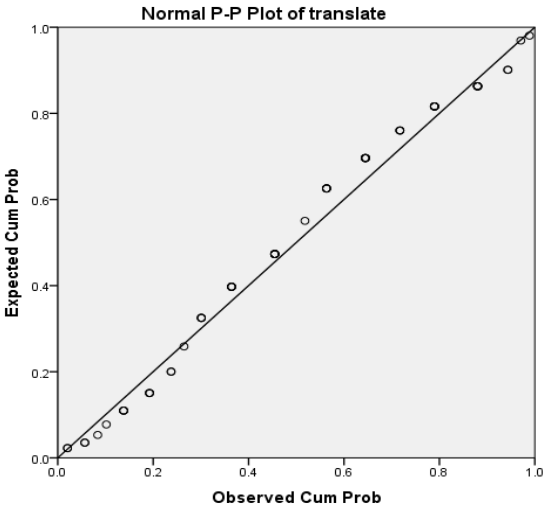

Figure 1. P-P plot for the normality of the scores.

Table 3: One-Sample Kolmogorov-Smirnov Test

		Interpretation	MQ
N		55	55
Normal Parameters[a,b]	Mean	18.3455	93.8909
	Std. Deviation	5.16834	12.89512
Most Extreme Differences	Absolute	.098	.060
	Positive	.068	.060
	Negative	-.098	-.045
Kolmogorov-Smirnov Z		.729	.447∗
Asymp. Sig. (2-tailed)		.663	.988

∗ *It is necessary for recognizing the normality.*

a. Test distribution is Normal.

b. Calculated from data.

Table 3 shows that the amount of Kolmogorov-Smirnov Z (0.73 and 0.45) in the level of 0.05 is not significant, and the amount of 0.988 shows that the null hypothesis of statistics is accepted. As a result, the data related to the variables of consecutive interpretation quality and memory quotient has a normal distribution. Therefore, because of the examining of the study hypotheses the Pearson correlation coefficient was used.

Addressing the first research question

"Is there any significant relationship between memory quotient and the quality of consecutive interpretation of Iranian EFL interpreters?"

Table 4: Correlation Coefficient of Consecutive Interpretation Quality with the Memory Quotient

		Interpretation	MQ
Interpretation	Pearson Correlation	1	.459**
	Sig. (2-tailed)		.000
	N	55	55
MQ	Pearson Correlation	.459**	1
	Sig. (2-tailed)	.000	

	N	55	55

** Correlation is significant at the 0.01 level (2-tailed).

As shown in Table 4, statistically the positive correlation between the consecutive interpretation quality and the amount of memory quotient was significant in the level of 0.01. So, the study hypothesis (null hypothesis: There is no relationship between the memory quotient and the quality of the consecutive interpretation of Iranian EFL interpreters.) was rejected with the 99 percent assurance, it meant the higher consecutive interpretation quality, the higher memory quotient and vice versa.

Addressing the second research question

"Do consecutive interpreters need excellent memory quotient for interpreting?"

Table 5: One-Sample Test

	Test Value = 100					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
MQ	-3.513	54	.001	-6.10909	-9.5951	-2.6231

As it is seen in Table 5, the cut score was considered 100, with regarding that the amount of T is significant and there is a significant difference between the assumed population mean and the MQ mean of the consecutive interpreters' scores, the calculated T is negative that it shows the mean of the memory quotient of statistic sample is lower than the cut score. Therefore, the research hypothesis is accepted by 95 percent assurance; it means consecutive interpreters do not have a high memory quotient.

Addressing the third research question

"Does memory quotient influence on the consecutive interpretation quality?"

Table 6: ANOVA-MQ

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1379.559	2	689.780	4.720	.013
Within Groups	7599.786	52	146.150		
Total	8979.345	54			

According to Table 6 contents, the amount of calculated F (4.72) is more than the amount of table F (acute F) and the significance level was considered less than 0.05. Accordingly, the research hypothesis was accepted by 95 percent assurance. As a result, there was a significant difference between memory quotient and the three divided groups of consecutive interpretation quality. Therefore, a follow-up test was taken.

Table 7: The Results of Follow-up Test

Multiple Comparisons

Dependent Variable: MQ

Tukey HSD

(I) t	(J) t	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	-6.67014	4.56136	.317	-17.6749	4.3346
	3.00	-15.31746*	5.16509	.012	-27.7787	-2.8562
2.00	1.00	6.67014	4.56136	.317	-4.3346	17.6749
	3.00	-8.64732	3.87382	.075	-17.9933	.6986
3.00	1.00	15.31746*	5.16509	.012	2.8562	27.7787
	2.00	8.64732	3.87382	.075	-.6986	17.9933

* The mean difference is significant at the 0.05 level.

This table shows that there was a significant difference between memory quotient and group A and group C.

Discussion and Conclusion

The present study was conducted to find out the impact of memory quotient on consecutive interpretation quality. The first question of the study concerned about a significant relationship between these two variables, therefore Pearson correlation was used. The results revealed that there was a significant relationship between memory quotient and the consecutive interpretation quality in the level of 0.01. Thus the first hypothesis of the study was rejected with the 99 percent assurance, it meant the higher consecutive interpretation quality, the higher memory quotient and vice versa. The importance of the memory role in consecutive interpretation could be guessed and the provided data support for previous studies like Movahedi and Dashti Rahmatabadi (2016). This finding is of great importance since one can conclude that consecutive interpretation should be acquired best by improving memory and memory improvement courses in interpreter training programs should be academically followed.

For understanding the need for great memory quotient as the answer to the second question, one-sample T-test was used in which the mean of memory quotient score was compared with the mean of consecutive interpretation ranges. The interpretation scores were divided into three ranges; excellent (23-30), good (13-22) and not bad (to 12) to do this comparison. There was a significant difference between the assumed population mean and the memory quotient mean of the consecutive interpreters' scores, the result showed that the mean of the memory quotient of statistic sample was lower than the cut score (the mean of the sample was 93.89). Therefore, the research hypothesis was accepted by 95 percent assurance; it meant consecutive interpreters did not have a high memory quotient. The finding showed clearly that other factors such as correct use of terminology and vocabulary, correct use of language structure, style, fluency accuracy, appropriateness, equivalence, and usability can influence the quality of the interpretation and memory quotient does not have uniquely impact on consecutive interpretation. Daro (1997) stated that memory is multifaceted and it is not enough to simply state that interpreters have to improve their memory skills or that one of the prerequisites of a good interpreter is a sound memory. Moreover, Pochhacker (2004) stated that among the factors affecting interpretation quality, language base, interpreting skills, and cognitive memory ability are considered as core factors affecting the quality of interpreting while the others are classified as an external

influence. As Kriston (2012) mentioned interpretation is a complex task that requires the association of many factors. The role of the memory is important in all kinds of interpretation. He makes good use of both types of memory, as their training has proved important for the quality of subject message rendering. In his article, the aim was to discuss techniques for memory improvement, as mastering the languages and the general background of the conference are not sufficient. Therefore, he resulted that memory training should be encouraged through all of its aspects - acoustic, visual, or semantic, which together with the other factors are crucial in the interpreter's work. Additionally, Lu and Chen (2013) in their study resulted that interpreters should acquire a wide range of knowledge, broaden the horizon and diversify experience to enrich the contents of long-term memory and optimize storage structure to be a better interpreter. The results of a study done by Ibrahim and El-Esery (2014) indicated that language interpretation is a difficult and complex task. Different factors might influence the output of interpretation. They classified the skills investigated into two categories; personal (eye contact, body posture, facial expressions and effectiveness), and linguistic (memorization, pronunciation, vocal variety, volume, pace, introduction, poise and cutting). As a result, one skill is not enough to interpret sufficiently.

For answering the third question the case study was divided into three groups based on the consecutive interpretation quality scores. And the comparison of memory quotient with these three groups with one-way variance analysis was done. The result revealed that there was a significant difference between memory quotient and the three divided groups of consecutive interpretation quality. Therefore, a multiple comparison was done and it showed that there was a significant difference between memory quotient and group A and group C. Hence, people with an ordinary memory quotient can be interpreters. Memory as a factor that has an impact on the quality of interpretation can be improved to have a better interpreting output. In the world of communication and dialogue among nations and people, interpretation as an important means of communication has a key role in transferring different ideas among different nations. And this means of communication includes different abilities, mentioned before, which have great roles in the overall performance of interpretation. The impact of memory as one of the abilities cannot be ignored.

The result contributing memory quotient and consecutive interpretation quality indicates that there is a positive correlation between these two factors, therefore it would benefit interpreters and interpreter trainees to enhance memory skill. If interpreters are to provide the most accurate and better interpretation, then memory can help them achieve it faster. Another finding concerning no need for high memory quotient for interpreters encourage interpreters and interpreter trainees with an ordinary memory quotient to become good interpreters, although by enhancing the memory skill they would have an easier way ahead. According to results, it will be implied that people with an ordinary memory quotient can be interpreters; they should learn the interpretation skills mentioned in this study, and memory is not the only factor for becoming a consecutive interpreter. In line with the data revealed, it can be suggested that memory training may become a part of the curriculums of the interpretation courses and departments of the universities. In interpreting, as a highly complex successful interaction of the various skills which can be obtained in a carefully structured sequence of learning steps, memory improvement can support the most accurate interpreting possible for consecutive interpretation practitioners.

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concerning no need for high memory quotient for interpreters encourages interpreters and interpreter trainees with an ordinary memory quotient to become good interpreters, although by enhancing the memory skill they would have an easier way ahead. According to results, it will be implied that people with an ordinary memory quotient can be interpreters; they should learn the interpretation skills mentioned in this study, and memory is not the only factor for becoming a consecutive interpreter. In line with the data revealed, it can be suggested that memory training may become a part of the curriculums of the interpretation courses and departments of the universities. In interpreting, as a highly complex successful interaction of the various skills which can be obtained in a carefully structured sequence of learning steps, memory improvement can support the most accurate interpreting possible for consecutive interpretation practitioners.

Suggestions for Further Research

This study has been a relatively small-scale study, involving a small dataset from a group of 55 participants in just one university. The findings of it could usefully be tested against the outcomes of more large-scale studies. In particular, it would be useful to do such a study again on more advanced interpreters who appear to have more experience. The study makes the following suggestions, as well on the basis of its findings and a review of the literature. Since a significant relationship was found between consecutive interpretation quality and memory quotient in the present study, further studies are suggested to broaden the horizon of correlation between MQ and CI quality. And to find how and to what extent memory quotient impacts on consecutive interpretation. Undoubtedly, further research into MQ in interpreting studies will shed light on its significance for task performance. Other studies could be done with the role of specific kind of memory like short-term memory, long-term memory or working memory which may have an influence on the quality of consecutive interpretation.

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