

Training techniques in the education of simultaneous interpreters using specialised equipment

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Abstract. The article deals with the search for ways to improve the training of simultaneous interpreters in accordance with modern requirements for their professional activities. It has been suggested that special training should be incorporated into the training of these professionals to develop and improve a range of specific abilities, skills and attitudes. They are classified into five groups (linguistic, cognitive, psychological, physical, technical). Particular attention is paid to the technological support for the work of the simultaneous interpreters. A training programme for simultaneous interpreters has been developed and its effectiveness has been tested. It is proposed to conduct training sessions under the modelling of real working conditions of simultaneous interpreters.

1 Introduction

Simultaneous interpreting is considered a relatively young form of translation, but it is one that is gaining in importance. Many organisations, including the United Nations and the European Union, as well as multinational companies, need simultaneous interpretation services to ensure smooth, accurate and rapid communication with their foreign employees and business partners. In the business world, simultaneous interpreting is used at international events: meetings and conferences, trade fairs and exhibitions, discussions, etc.

Simultaneous interpreting as a method of speech mediation between different languages requires special equipment. During this type of simultaneous interpreting, the interpreter is in a special, soundproof interpreting booth and receives the speech through headphones. While making the interpretation, which takes place almost simultaneously, i.e. synchronously, he speaks into a microphone. This translated speech is transmitted to the participants of the event, who perceive it through headphones. Simultaneous interpreting places very high demands on the interpreter, both mentally and physically. Above all, there must be a high degree of concentration and coordination in perceiving what is being said, understanding and translating. The physical strain of being in a confined space, on the one hand, and the vocal strain, on the other, are considerable. Given such a complex and multifaceted workload,

it is necessary to find ways of specifically preparing interpreters for such activities in a targeted manner.

The *aim of this article* is to analyse the content of a specific training developed for implementation in the training of simultaneous interpreters and to determine its effectiveness by conducting a pilot study.

2 Literature review

Simultaneous interpreting is a very demanding activity for the interpreter and requires maximum concentration, experience and a range of skills and abilities. Researchers note above all the heavy cognitive load of the simultaneous interpreters during direct interpreting [1–3]. Accordingly, future interpreters must be prepared to interpret with an awareness of possible cognitive stress. According to scientists, the stress can be reduced by mastering different simultaneous interpreting strategies. For example, the interpreter translates a “fast” speaker differently from a “slow” speaker. In addition, it is necessary to learn how to “compress speech” and focus on key segments of speech. It is precisely these aspects of training for simultaneous interpreters that both domestic and foreign researchers note.

In particular, when considering the professional training of prospective interpreters, N. V. Zinukova focuses on linguistic, translation, psychological and psycholinguistic prerequisites for the content of interpreting training and believes that special importance should be given to the psychological model of interpretation [4, p. 4]. According to C. Chabasse, it would be very simplistic to describe simultaneous interpretation as the direct verbal transmission of oral information from the source language to the

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target language [5, p. 64]. At the same time, while it is important for an interpreter to have multitasking skills, as G. Watts points out [6], this does not mean that the simple multitasking model can be transferred to interpretation. An interpreter must learn to consciously use certain strategies, exercise constant initial control of his or her speech, and physically hear what he or she is saying. Interpreters must therefore learn how to operate the headset, microphone desk, etc. [7]. By having a perfect command of the equipment of their workplace in the booth they will be able to carry out lexical, grammatical and phonetic control and then avoid errors in interpretation [5, p. 79], [8].

A. Chmiel, S. Ghiselli, describing practical offerings of tasks and exercises to prepare interpreters for simultaneous interpreting, note that the formation and improvement of specialised skills occurs only when the students are motivated and able to repeat learning activities. Therefore, based on this understanding, it is necessary to determine the frequency and typology of exercises for students. It is also important to get feedback [9, 10]. B. Moser-Mercer proposes modelling the learning environment for simultaneous interpreting to take account of the development of this type of interpreting in the 21st century, i.e. by incorporating into the training the acquisition of skills necessary in the age of new technologies [11]. On the other hand, a number of researchers have focused on modelling the cognitive actions of the simultaneous interpreter [11, 12]. F. Ibanez considers the possibility of practising cognitive operations through special training for interpreters. In his view, interpreters should keep themselves fit with regular memory training exercises and support this training with breathing techniques [13]. The importance of training in the education of simultaneous interpreters is also confirmed by the fact that the European Commission has created a special resource that is offered for interpreter training, in the form of a series of training exercises, theoretical materials, video and audio recordings for training [14].

3 Result and discussion

3.1 Theoretical and technological background of the training

Before the actual training, it was advisable to determine the direction of the training in order to develop the specific skills needed by an interpreter for simultaneous interpreting.

Based on the analysis of scholars' works and preliminary practical research, we have identified a number of skills and abilities of simultaneous interpreters that are most necessary for carrying out their professional activities. Their general list was structured into five groups, namely: speech, cognitive, psychological, physical, and technical (table 1).

However, when looking for effective methods of implementing training techniques for developing the above list of skills and abilities of simultaneous interpreters, it is necessary to take into account the fact that their work in modern conditions will mostly take place with the use

of specialised tools. In particular, they constitute a set of equipment that includes at least an interpreter desk, equipment for receiving the input signal with the incoming speech and transmitting the output signal with the target speech, devices for receiving the signal with the input speech, etc. With this in mind, we developed a series of training sessions combining the formation of skills and abilities from different groups, taking into account the real working conditions of an interpreter, simulated in a training laboratory. A picture of such a laboratory is shown in figure 1.



Figure 1. Training laboratory for simultaneous interpretation.

It should be noted that all training sessions took place in this laboratory.

3.2 Developing training content for simultaneous interpreters

The following criteria for selecting skills and abilities were used as the basis for developing the content of the training:

- control of one's own psychological and physical state while performing a certain technological operation of the interpreter at the desk,
- perception and reproduction of the speech content using the technical equipment of the interpreter's booth,
- preparation of the workplace and its equipment for the simultaneous interpreting session.

Based on the defined criteria, five training sessions were developed and implemented: "Attention! Get ready to air", "Listen to everything, don't say everything", "Breathe calmly, don't panic", "Listen, convert and produce", "Working in pairs, ready to help".

The methodology for implementing this training technology implied a number of requirements, namely

- a clear sequence of training sessions,
- the duration of each session is one astronomic hour,
- the number of participants is a maximum of twenty people,
- reflection and analysis after each session.

Table 1. Skills and abilities of simultaneous interpreters.

Skills and abilities groups	Skills and abilities
<i>Speech skills</i>	Recognising words and phrases Understanding the content of a speech Determining the contextual meaning of words Identifying the most important elements of speech Speech compression Semantic reformulations Lexical substitutions Grammatical transformations Producing adequate output speech
<i>Cognitive abilities</i>	Listening comprehension Memorising Forecasting
<i>Psychological abilities</i>	Stress resistance Reaction speed Concentration of attention
<i>Physical abilities</i>	Speech volume Speech tempo and lagging behind the speaker Articulating and expressing speech Intoning Breathing techniques Physical condition monitoring and control
<i>Technical skills</i>	Connecting the headset Operating the interpreter desk Selecting a channel Adjusting audio quality and volume Operating the microphone

Considering the first requirement, the sequence of the training sessions followed the following logic: interpreter preparatory activities (preparation of the workplace and equipment, psychological adjustment, physical condition control); perceptual and language-production activities (separate operations with the interpreter desk, perception of source speech and its interpretation, overcoming emotional stress); simulation of real interpreter activities (operating basic interpreter desk functions, interpreter conversation and productivity activities, monitoring psychological state and overcoming physical exhaustion). Therefore, the conduct of certain sessions was structured as follows: “Attention! Get ready to air”, “Listen to everything, don’t say everything”, “Breathe calmly, don’t panic”, “Listen, convert and produce”, “Working in pairs, ready to help”.

The duration of each session was set at one astronomic hour, as the interpreter’s own activities are very strenuous and it was decided not to exceed these time limits in order to maintain proper physical and psychological well-being.

The limiting factors for the number of participants in the training were the availability of facilities for each participant to work individually in an interpreter booth, to ensure that all planned aspects were practised, and that the trainer was able to give due attention to each participant.

In order to evaluate the effectiveness of a training session that has just been conducted, there is a discussion immediately after the session to obtain feedback from the participants and the trainer’s recommendations.

3.3 Conducting training sessions in the laboratory for simultaneous interpretation

The first in the series of sessions was a session on “Attention! Get ready to air”. The aim was to prepare the interpreter in a comprehensive way before the start of the actual simultaneous interpreting session. The main part of this session was to work on setting up the interpreter desk. The interpreter desk is the main equipment of the interpreter’s workplace, which allows him/her to ensure the speaker’s interaction with that part of the audience in a foreign language by providing the audience with a interpretation of the speaker’s speech in a language that is comfortable to listen to. Such booths are usually installed in special interpreter booths. The laboratory where the training took place is equipped with a so-called full-size permanent booth meeting the international standard ISO 2603:2016 “Simultaneous interpreting – Permanent booths – Requirements”. A picture of the booth is shown in figure 2.

Today there is a large variety of interpreter desks available, which may differ in design, functionality, placement of controls, how to perform certain actions, etc. However, most of them have a basic set of functions, including the one used in the training. The main actions that can be performed using the remote control include: switching the microphone on and off, controlling the audio input and output, selecting channels to transmit interpretation, communicating with the operator, requesting help, interacting with the operator, etc. The content of the training session “Attention! Get ready to air” included practicing those



Figure 2. Permanent booth for simultaneous interpreting.

actions that will ensure the preparation of the workplace equipment for direct interpretation, in particular: checking the functioning of the microphone, connecting the headset, setting up the required input channel, etc. (figure 3). In addition to the technical aspect, an important part of this session was the implementation of a psychological and physical work attitude: concentrating on future interpreting activities, controlling vocal ability, overcoming the excitement before starting work. For this purpose, breathing exercises were performed to normalize well-being, lower the excitement threshold, and adapt the vocal connections to prolonged speech activity. For example, they offered to inhale, counting to two, then hold their breath for a second and exhale, counting to four.



Figure 3. Preparing the equipment for the interpreter's workplace.

The second in the sequence was the session "Listen to everything, don't say everything". The participants of the training took this title at first with some incomprehension – how is it possible to interpret not everything, since the task of the interpreter is to achieve the most complete correspondence between the interpretation and the original. However, we proceeded from an understanding of the

essence of simultaneous interpretation as a combination of the interpreter's continuous perception of a speech in one language with an almost simultaneous reproduction of its content in the other language. To this end, we focused on an exercise to develop the skills of separating the key information in a speech and presenting it clearly and logically during the interpreting session. Given that simultaneous interpreting takes place under critically constrained and sometimes time-poor conditions, one of the basic techniques of this type of translation is compression. This situation may also be further complicated by the rapid tempo of the speaker's speech, due to both the characteristics of certain languages (in particular, the tempo of speakers of Germanic languages is faster than Slavonic languages) and the individual characteristics of the speakers. Under these conditions, it is difficult or even impossible for a beginner to understand and fully reproduce what is being said. Generally speaking, interpretation theory holds that the simultaneous interpreter perceives an utterance which is characterised by redundancy of information. In addition, the interpreter's ability to perform this type of activity, i.e. the speed of their thought operations and their verbal expression, also has a significant impact. All of these factors can lead to errors of varying levels in the interpreter's output. The solution is to deliberately reduce the volume of the speech when interpreting, i.e. "listen all but speak not all", thus implementing a strategy of compression in simultaneous interpretation. Compression is useful if the speaker's pace is too fast, if there are repetitions or words that are not important in the speech.

During the training session, participants interpreted sentences and paragraphs from a foreign language, while consciously removing certain elements in the target language. Working with bilingual speeches, they practised the ability to modify a sentence, shorten or summarise it without changing the content of the phrase.

As interpreters constantly need to monitor the quality and volume of the audio signal with the speaker's speech, which directly affects the effectiveness of the simultaneous interpretation, this session also included practising the microphone desk facilities, which allow for the adjustment of the sound level in the headphones and the built-in speaker (figure 4). The proposed speech compression techniques in simultaneous interpreting also included replacing words, phrases and sentences with shorter words, phrases and sentences; removing segments of redundant information and redundant words. In parallel, probabilistic prediction techniques were also involved.

The voice is one of the interpreter's most important tools, as it serves to convey messages. In order to adequately reproduce the content of a speech and contribute to its optimal comprehension, it is important to practice clear articulation, correct intonation and appropriate volume.

Therefore the training session is designed to teach prospective simultaneous interpreters how to use their voice correctly. A necessary task is to learn proper breathing technique, which helps the interpreter to regulate effort and, in addition, to overcome the stress that inevitably accompanies the simultaneous interpreting process.



Figure 4. Practising the microphone desk tools for audio quality control.

As the work of a simultaneous interpreter requires the ability to control and regulate their own psychological and physical well-being, the session “Breathe calmly, don’t panic” was included in order to develop this ability. Simultaneous interpreting is associated with stress, which can be reflected in negative experiences on an emotional level - anxiety, nervousness, insecurity, hopelessness, helplessness, worry, apprehension and fear. Typical reactions to stress in interpreters are anxiety and fear. Therefore, during this session, efforts were directed towards achieving a positive mood, emotional control, inner calm, determination, and self-confidence. This requires getting rid of anxious thoughts, concentrating and being ready to be active. The best way to achieve this state is through various relaxation techniques designed to achieve a physically relaxed state, which additionally supports a calm and relaxed psychological state. On a psychological level, there is a correlation: if one is relaxed, one cannot experience fear.

According to S. Baumann [15, p. 103], a person’s psychological state is reflected in the way they breathe. Such feelings as fear, nervousness, excitement, anxiety and malaise lead, for example, to shallow, rapid breathing. Conversely, when a person is relaxed and focused, breathing is deep and slow. The exercise begins with a deep inhale, starting the breathing cycle: inhale, exhale and a short pause. Further breathing should be natural. The peculiarity of this psychohygienic breathing is that the exhalation is lengthened.

The session also involved working with affirmations, which meant asserting oneself, gaining confidence in one’s abilities, affirming one’s abilities and thus strengthening one’s own self-confidence. An important point was the affirmative self-talk (“I am calm and focused”, “I am well prepared and in control”, “I am looking forward to showing my skills”). The focus of the training was on the fact that thinking patterns that are already firmly established are difficult to change. They were therefore advised to practice these new patterns of positive thinking on their own every day.

In order for an interpreter to perform their activities properly, they must try to achieve an optimal level of activation, that is, an appropriate level of psychological and physical arousal. Performance increases as the level of arousal increases, but only by the average level of activation. If excitement continues to rise after that, performance will fall. This is why training aims to actively regulate the level of arousal. On the one hand you need to calm down, on the other hand you need to become active and mobilised. A calming self-talk is suitable for this purpose, as well as a powerful breath to overcome physical lethargy. This is done by deliberately taking a deep breath for about two seconds, followed by a normal exhalation for one second. This process is repeated three to five times.

To increase concentration, it is advisable to develop personal rituals to help the interpreter stabilise himself psychologically (e.g. placing things in a certain order, wearing a talisman, etc.).

An important training session in the overall structure of the training was the session “Listen, convert and produce”. When talking about the difficulties of simultaneous interpreting, the fact that the interpreters have to reproduce the target language speech almost simultaneously with listening is usually emphasised. This puts a certain strain on the synchronisation of listening and speaking processes. But much less attention is paid to the use of translation reformulations of various kinds (lexical, grammatical, lexical-grammatical, semantic) in simultaneous interpretation. Reformulations allow, on the one hand, to reproduce the information of the source speech in a concentrated form and, on the other hand, contribute to relieving the interpreter of the stress that arises from the pressure of the lack of time to produce speech in the target language. This is why we have included translation reformulations in the training programme.

The task involved such types of reformulation of the original phrase: using nouns instead of verbs or vice versa in the translated phrase; formulating the beginning of the sentence differently from the way the speaker started it; rephrasing the sentence heard as a whole; transforming the sentence structure – dividing it into simple ones if it is complex, using synonyms instead of words used in speech.

These reformulations have become commonplace in the work of experienced interpreters, and are therefore recommended for training and coaching interpreters. For example, “Keeping sentences short and simple (KISS)”, which involves dividing long and complex sentences of the original speech into several shorter ones, not only makes it easier for the interpreter, but also makes it easier for the listeners to perceive and understand the speech.

In order to achieve the goal of the training session “Listen, convert and produce”, the participants of the training session were set from the very beginning to always focus on the thoughts and ideas rather than on the individual words of the speaker.

This training session was conducted at the interpreter’s workplace in the booth.

The final session in the series of training sessions was “Working in pairs, ready to help”. Given the rather heavy cognitive, emotional and physical load on the interpreter

during the simultaneous interpretation session, the duration of his/her continuous work is limited to 30–40 minutes. At the end of this period of work, a coordinated handover of the changeover to the partner should take place. However, it may happen that the interpreter will not be able to stand the entire period and will need to be replaced early by a colleague. This leads to the need for separate preparation of the interpreter to hand over the changeover to his/her partner. During the training session we practised a changeover mechanism that can be initiated by the interpreter providing the interpreting at the moment (active) as well as by the interpreter resting (passive).

The practical aspect of the exercise involved practising the coordinated work of two interpreters working in pairs on separate desks in the booth (figure 5). This consisted of practising a sequence of actions that involved the active interpreter alerting the passive interpreter of the changeover intent and performing appropriate technical operations by both interpreters on their own desks, thereby ensuring that the target speech signal was transmitted to the appropriate channel without delay.



Figure 5. Practising interpreters working in pairs.

During this training session, special attention was paid to the psychological readiness of the passive interpreter to accept a rotation and become fully involved in simultaneous interpreting. Particular emphasis was placed on developing the passive interpreter’s ability to step in in an emergency situation, i.e. when the active interpreter suddenly feels unwell.

4 Analysis of the pilot study results

In order to verify the effectiveness of the developed and conducted training, in which 17 participants took part, the formation of skills important for the simultaneous interpreter was compared according to several criteria using appropriate methods.

Concentration and selectivity of attention was determined using the H. Münsterberg method, designed to diagnose the occupational suitability of workers in areas with increased neuropsychological stress [16].

The dynamics of changes in stress resistance were examined on the basis of the S. Cohen and G. M. Williamson self-assessment of stress resistance test [17]. This test aims to determine confidence in one’s ability to cope with personal problems and to control one’s state in different situations.

The methodology “Motivation of success and fear of failure” by A. A. Rean is focused on determining the respondents’ goal orientation, their attitude towards successes and failures, their performance under time constraints, which reflects the working conditions of a simultaneous interpreter [18].

In addition, the level of change in the development of verbal, technical and technological skills was determined by the training participants performing appropriate control tasks on these aspects.

The dynamics of changes in the skills and abilities of the training participants are shown in figure 6.



Figure 6. The dynamics of changes in the skills and abilities of the training participants.

A comparison of the state of formation of skills and abilities important for a simultaneous interpreter revealed differences in their development among the training participants. The smallest difference between the initial and final scores was obtained for the speech skills. We consider this to be quite logical, since the students who registered for the training already had a sufficiently high level of foreign language skills, which allowed them to plan their future professional activities as a simultaneous interpreter. The greatest progress was recorded in technical and technological skills, as their proficiency increased from 17.6% to 76.5%. In our opinion, this can be explained by the use of special equipment during all training sessions, as they took place in a specialised simultaneous interpretation laboratory with a interpreting booth.

5 Conclusions

To be successful in simultaneous interpreting as a special type of translation, interpreters need to possess a number of specific abilities, skills and abilities. Based on the analysis of scholarly work, the experience of interpreter practitioners and practical research, the important skills and

abilities that interpreters need most to carry out their professional activities have been identified. In this case, they are classified into five groups (speech, cognitive, psychological, physical, and technical), which can be the basis for developing special exercises to be used in the educational process. A special emphasis is placed on the technological support of simultaneous interpreters and it is suggested that the technical and technological aspect should be taken into account in the training of these specialists.

Based on the content and technological background, a training programme for the training of simultaneous interpreters was developed and its effectiveness in the educational process was tested. The training included five sessions: “Attention! Get ready to air”, “Listen to everything, don’t say everything”, “Breathe calmly, don’t panic”, “Listen, convert and produce”, “Working in pairs, ready to help”. On the one hand they were all aimed at comprehensive training of the interpreter in a simulated real working environment in a fixed cabin with the appropriate equipment, and on the other hand, each of the sessions was focused on reinforcing a particular skill. The training skills included practical use of the available language knowledge in the process of perception, understanding and reproduction of the speech content using the technical equipment of the interpreting booth; constant control and correction of psychological and physical state during all the activities of simultaneous interpretation; work with the equipment of the interpreter’s workplace during the simultaneous interpretation process – from its preparation to the completion of the interpretation session. The results of the assessment of the dynamics of changes in the skills and abilities of the training participants showed the greatest increase in the technical and technological skills, which was facilitated by the simulation of the simultaneous interpretation process in a specialised laboratory.

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