TESTING EFFICIENCY OF THE METHODOLOGY OF TEACHING STUDENTS MAJORING IN PHILOLOGY TO TRANSLATE TEXTS USING CAT-TOOLS: A PILOT STUDY

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The article describes the results of introducing the newly developed methodology of teaching students majoring in philology to translate social and political texts from English into Ukrainian with the help of one of the leading computer-assisted translation software tools (CAT-tools) – SDL Trados. The course "Modern Translation Technologies. CAT-tools" included four thematic blocks (translating files of various formats; creating and managing term bases; creating translation memories based on existing translations (alignment) and managing them; managing translation projects) and three sub-systems of exercises (preparatory exercises, exercises for developing skills in translation with the help of CAT-tools, exercises for developing abilities in translation with the help of CAT-tools). The pilot study was carried out in the form of natural vertical experimental teaching which lasted during the second semester of 2015/2016 academic year (March – May). The subjects included 12 fifth year students of the Department of English Translation Theory and Practice of the School of Foreign Languages of V. N. Karazin Kharkiv National University majoring in translation. The course was introduced to the students during three months (24 academic hours), two academic hours per week. The stages of the experimental teaching included the following: preparing the experiment, realising it, processing the results and interpreting them. The comparison of the students' average results obtained before and after the experimental teaching allows to state that there is a substantial increase in students' proficiency in translating social and political texts from English into Ukrainian with the help of CAT-tools while the increase in students' proficiency in translating similar texts from English into Ukrainian by hand is definitely low and can't be regarded even as a satisfactory one. The results of the experimental teaching show that the hypothesis preconceived at the very beginning of the study is confirmed.

Keywords: CAT-tools; students majoring in philology; methodology of teaching; experimental teaching; assessment criteria; translator training.

Introduction

The modern life cannot be imagined without technologies. They penetrate almost all areas of human activities and translation is not an exception. In addition, globalisation and integration processes all over the world cause a substantial growth of the amount of intercultural communication which, in its turn, increases the demand for translation. The need to meet this demand contributed to the rapid development of computer-assisted translation tools (CAT-tools) which significantly increase the productivity of translators without depriving them of their key role in the translation process.

Nowadays the work of translators is inextricably linked to CAT-tools and such essential changes have influenced greatly the way the universities train future translators: the leading world's educational establishments have already developed courses dedicated to teaching CAT-tools. In Canada, the Collection of Electronic Resources in Translation Technologies (CERT) project launched at the University of Ottawa's School of Translation and Interpretation is aimed to help educators and students in exploring and using more than thirty translation tools and resources (Bowker & Marshman, 2010; Marshman & Bowker, 2012), while the Translation Ecosystem project developed at the Université du Québec is designed to assist students in assuming various roles in the translation workflows and simulating diverse tasks (Mihalache, 2012). In Ireland, a course in Translation Technology (Computer-Assisted Translation) is developed for both undergraduate and postgraduate translator training programmes and is aimed at introducing TM (translation memory) and MT (machine translation) technologies to translation students (Kenny, Way, 2001). In Ukraine, the process of introducing modern technologies into translators' professional training is at the initial stage. The first scientific papers aimed at studying various aspects of this process such as: component structure, conceptual foundations, model, organisational and pedagogical conditions of formation of information competence of future translators for the agricultural sector (Tarasenko, 2014a, 2014b); information competence of future translators: possibilities of using Moodle in teaching foreign languages and translation, aims and purposes of information training of future translators with the help of information and communication technologies (Dolyns'kyy, 2013a, 2013b); pedagogical conditions of forming the professional competence of future translators by means of modern information technologies (Rohul's'ka, 2010). These studies certainly made a significant contribution to the solution of the stated problem but the necessity of further development of theoretical basis for introducing modern technologies into translators' training curricula is still pressing with the need to place a special emphasis on building courses on CAT-tools.

In order to fill the gap of translation technologies training, we developed the methodology of teaching students majoring in philology to translate social and political texts from English into Ukrainian with the help of CAT-tools (SDL Trados in our case) which was introduced into the training program in the form of the course "Modern Translation Technologies. CAT-tools". The thematic blocks (TB) which were covered in the course included: TB 1 – translating files of various formats (Word, Excel, Power Point, pdf) using SDL Trados; TB 2 – creating and managing term bases in SDL Trados; TB 3 – creating translation memories based on existing translations (alignment) and managing them in SDL Trados; TB 4 – managing translation projects in SDL Trados. The system of exercises was built on the basis of international human rights instruments and consisted of three sub-systems: 1) preparatory exercises; 2) exercises for developing skills in translation with the help of CAT-tools; 3) exercises for developing abilities in translation with the help of CAT-tools (Ol'khovs'ka, 2016).

The purpose of the article is to present the results of the pilot experimental testing of the methodology of teaching students majoring in philology to translate social and political texts from English into Ukrainian using CAT-tools developed by the author of the paper. In order to achieve the purpose, we have set forth the following tasks: 1) to define the aim of the experimental teaching; 2) to formulate a preconceived hypothesis; 3) to outline the structure of the experimental teaching; 4) to describe experimental materials; 5) to present the results of the pre-test and post-test; 6) to analyse and interpret the results obtained.

The *aim* of the experimental teaching was to test the efficiency of the developed methodology of teaching students majoring in philology to translate social and political texts from English into Ukrainian using one of the CAT-tools – SDL Trados.

In order to effectuate the testing, we formulated a *preconceived hypothesis*: using CAT-tools under the developed methodology will result in a sufficient increase in proficiency of translation performed by students majoring in philology both qualitatively (reaching the Bespalko coefficient of proficiency at 0.8 level) and quantitatively (translating texts of greater volume within the same time limits).

Method

The research was carried out in the form of natural vertical experimental teaching (Gurvich, 1980; Shtul'man, 1976) which lasted during the second semester of 2015/2016 academic year (March – May). The natural character of the experimental teaching indicates that it was effectuated during regular students' classes and without any special selection of students. Its vertical character allows evaluating the efficiency of the developed methodology through the comparison of the students' results before and after the experimental teaching.

The subjects included 12 fifth year students (Master's and Specialist's degrees) of the Department of English Translation Theory and Practice of the School of Foreign Languages of V. N. Karazin Kharkiv National University (12 women aged from 19 to 22) majoring in translation. The course "Modern Translation Technologies. CAT-tools" developed on the basis of SDL Trados lasted 24 academic hours. It was introduced to the students during three months, two academic hours per week. The stages of the experimental teaching included the following: preparation of the experiment, its realisation, processing of the results and their interpretation (Gurvich, 1980; Shtul'man, 1976).

We decided not to conduct the pre-test at the beginning of the experimental teaching as the majority of the students didn't have any experience of translating texts with the help of CAT-tools so they weren't able to perform such a test without some preliminary instruction. Some of the students, according to their words, made attempts to master CAT-tools on their own but they didn't succeed. Taking this situation into account, we carried out the pre-test on the fourth class when the students had already acquired the basics of using CAT-tools. The duration of the pre-test was 90 minutes.

The source texts used in the pre-test were excerpts from the international covenant on human rights: *Second Optional Protocol to the International Covenant on Civil and Political Rights, aiming at the abolition of the death penalty*. The text of the covenant was divided into two parts: 1) for translating by hand (the size of the excerpt – 1635 characters without spaces, time for performance – 45 minutes); 2) for translating with the help of CAT-tools – SDL Trados in our case (the size of the excerpt – 3225 characters without spaces, time for performance – 45 minutes).

Thus, the size of the excerpt to be translated by the students with the help of CAT-tools was twice as big as the excerpt to be translated by hand. Though, we should mention that while performing translation with the help of SDL Trados, the students could use the translation memory, built on the basis of the following core international human rights instruments: *Universal Declaration of Human Rights*, *International Covenant on Civil and Political Rights*, *International Covenant on Economic, Social and Cultural Rights* and the term base created on the basis of the vocabulary from the manual *Translation of English Social and*

Political Texts. International Covenants on Human Rights (Chernovatyy, Karaban, Hanicheva, & Lipko, 2006). The test preparation phase also involved the analysis of the excerpt to be translated by the students with the help of CAT-tools by means of the Analyse Files option of SDL Trados which allowed us to generate a report containing the information on the number of segments, repetitions and various types of matches taking into account the translation memory to be used in the translation process. The analysis shows that the number of not translated segments totalled to 14 (388 words, 2010 characters), the percentage being 62.08 %. The number of segments with 100 % matches amounted to 21 (42 words, 180 characters), that is 6.72 %. The general number of fuzzy matches is seven. Four out of them (95 words, 513 characters, that is 15.2 %) are 95–99 % matches while three segments (100 words, 522 characters, that is 16 %) are 85–94 % matches. It is commonly believed that only 70 – 100 % matches are easier to correct rather than translate so the default setting is 70 %, but the students were allowed to set the percentage that they wished as SDL Trados allows to set it individually by each user from 0 to 100 %. As we can see the percentage of all segments that had matches from the translation memory is below 70 %, thus presumably it was easier to translate them rather than to correct.

While performing translation by hand the students were allowed to use only dictionaries (including electronic ones). The use of any other resources (access to Internet etc.) was strictly prohibited in performing both types of translations.

One of the main problems encountered during checking and analysing the students' translations was the assessment issue. As the teaching was held on the basis of the School of Foreign Languages of V. N. Karazin Kharkiv National University, it was expedient to lay into the foundation of our assessment system the criteria developed at the Department of English Translation Theory and Practice by Leonid Chernovaty (2009, 2010, 2013). Thus, for every mistake, the students obtained a certain number of penal points depending on its type. The first type of mistakes (mistakes that change the sense of the source text significantly or omission of important information) accounted for one penal point. The second type (mistakes that may change the sense of the source text significantly) accounted for 0.5 penal points. The third type (mistakes that change the sense of the source text insignificantly) accounted for 0.1 penal points. The assessment procedure included the calculation of the overall number of penal points with their further transformation into a five-point mark according to the scale developed at the Department of English Translation Theory and Practice of V. N. Karazin Kharkiv National University according to which every number of penal points scored by a student corresponds to a certain five-point mark. But the scale developed by the Department can be used for assessing translations of the standard size only. The standard size of the source text for the fifth year students is 1500 characters to be translated within 45 minutes. As the source texts for translating with the help of CAT-tools were twice as big, the corresponding corrections were introduced into the scale. Then the students' results in a five-point mark were converted into the Bespalko coefficient of proficiency with the help of the following formula: $K=A/N$, where A − number of points scored by the students for the correctly performed task, N – the maximum possible number of points (Bespalko, 1989).

Results

The results of the pre-test are given in Table 1.

The tables show that only two students (Student 2 and Student 10) showed the required level of proficiency in translation performed by hand – 0.88 and 0.92 correspondingly. Three students (Students 4, 8 and 11) managed to reach the lower border of the satisfactory mark: Students 4 and 8 scored 0.72 while Student 11 – 0.76. The rest of the students didn't manage to achieve even a satisfactory result. Two students (Student 6 and 12) demonstrated an extremely low result − 0.36 and 0.32 correspondingly. The average coefficient of proficiency for translation by hand amounted to 0.64 which is an unsatisfactory indicator, especially taking into account three weeks of learning before the pre-test. But we have to notice that students didn't like the idea of performing translations by hand, they persistently expressed their unwillingness to do this while there is an opportunity to perform translation professionally with the help of CAT-tools. Many students had excellent typing skills so they typed much quicker than they wrote. The student with the lowest result didn't even have time to finish the translation.

Table 1

The results of students' translations performed by hand and with the help of CAT-tools (SDL Trados) from English into Ukrainian (pre-test)

		Penal points scored by students (translation by hand)	Mark according to the five-point grading scale (translation by hand)	Bespalko coefficient of proficiency (translation by hand)	Penal points scored by students (translation with the help of CAT-tools – SDL Trados)	Mark according to the five-point grading scale (translation with the help of CAT-tools – SDL Trados)	Bespalko coefficient of proficiency (translation with the help of CAT-tools – SDL Trados)
1	Student 1	3.6	3.2	0.64	5.4	3.7	0.74
2	Student 2	1.7	4.4	0.88	4.9	3.8	0.76
3	Student 3	6	2.3	0.46	5.8	3.6	0.72
4	Student 4	2.9	3.6	0.72	4.5	3.9	0.78
5	Student 5	3.9	3	0.60	6	3.5	0.70
6	Student 6	8.3	1.8	0.36	10	2.5	0.50
7	Student 7	3.1	3.4	0.68	2.5	4.6	0.92
8	Student 8	2.9	3.6	0.72	5.2	3.8	0.76
9	Student 9	3.8	3.1	0.62	6	3.5	0.70
10	Student 10	1.3	4.6	0.92	3	4.5	0.90
11	Student 11	2.6	3.8	0.76	5	3.8	0.76
12	Student 12	9.6	1.6	0.32	8	3	0.60
	Average	4.14	3.1	**0.64**	5.53	3.68	**0.74**

The students demonstrated much better results in translation with the help of CAT-tools (SDL Trados). First of all, we should mention that all students of the group managed to use correctly all the options of the programme learnt during three weeks. All of them successfully downloaded the text for translation to SDL Trados, added the translation memory and term base provided by the instructor. Only two students of the group (Student 6 and Student 12) didn't manage to reach the lower border of the satisfactory mark with the coefficient of proficiency 0.5 and 0.6 respectively. Two students (Student 10 and Student 7) showed excellent results – 0.9 and 0.92 correspondingly. The rest of the students demonstrated satisfactory results with the coefficient of proficiency 0.7 – 0.78.

The post-test was conducted on the 12-th lesson and its content and time for performance were similar to the pre-test. While translating with the help of SDL Trados the students used the same translation memory and term base as in the pre-test.

The source texts used in the post-test were two excerpts of the international human rights covenant Optional Protocol to the International Covenant on Civil and Political Rights: 1) for translating by hand (the size of the excerpt – 1500 characters without spaces, time for performance – 45 minutes); 2) for translating with the help of CAT-tools – SDL Trados (the size of the excerpt – 2958 characters without spaces, time for performance – 45 minutes). The analysis of the excerpt to be translated by the students with the help of CAT-tools by means of the Analyse Files option of SDL Trados showed that the number of not translated segments totalled to 22 (443 words, 2893 characters), the percentage being 98.01 %. The number of segments with 100 % matches amounted to 4 (4 words, 8 characters), that is 0.88 %. The excerpt contained only one fuzzy match (1 word, 43 characters, that is 0.22 %).

The results of the post-test are given in Table 2.

The results of students' translations performed by hand and with the help of CAT-tools (SDL Trados) from English into Ukrainian (post-test)

		Penal points scored by students (translation by hand)	Mark according to the five-point grading scale (translation by hand)	Bespalko coefficient of proficiency (translation by hand)	Penal points scored by students (translation with the help of CAT-tools – SDL Trados)	Mark according to the five-point grading scale (translation with the help of CAT-tools – SDL Trados)	Bespalko coefficient of proficiency (translation with the help of CAT-tools – SDL Trados)
1	Student 1	4.0	3.0	0.60	4.6	3.9	0.78
2	Student 2	2.0	4.2	0.84	1.6	4.8	0.96
3	Student 3	8.0	1.9	0.38	7.7	3.0	0.60
4	Student 4	0.2	5.0	1.0	1.2	4.8	0.96
5	Student 5	3.5	3.2	0.64	2.4	4.6	0.92
6	Student 6	6.1	2.2	0.44	7.6	3.1	0.62
7	Student 7	2.8	3.7	0.74	2.8	4.5	0.90
8	Student 8	2.0	4.2	0.84	2.1	4.7	0.94
9	Student 9	3.7	3.1	0.62	4.4	4.0	0.80
10	Student 10	1.6	4.4	0.88	2.5	4.6	0.92
11	Student 11	1.9	4.3	0.86	1.6	4.8	0.96
12	Student 12	8.8	1.7	0.34	9.4	2.6	0.52
	Average	3.72	3.41	**0.68**	3.99	4.12	**0.82**

Table 2 shows that in translating by hand the students didn't manage to achieve even a satisfactory result as their average coefficient of proficiency amounted to 0.68. Students 1, 5 and 9 demonstrated a somewhat better result as compared to the pre-test with the coefficient of proficiency within 0.6 – 0.64, but still it is not a satisfactory mark. Student 7 scored 0.74 (satisfactory) while Students 2, 8, 10 and 11 managed to achieve the coefficient of proficiency within 0.84 – 0.88 (good), and only Student 4 received the excellent mark with the coefficient of proficiency 1.0.

The students' coefficient of proficiency in translating with the help of SDL Trados averaged 0.82. The majority of students showed excellent results with the coefficients of proficiency 0.9 – 0.96. One student (Student 1) reached the lower border of the satisfactory mark, the coefficient of proficiency being 0.78, while another student (Student 9) demonstrated a good result as the coefficient of proficiency amounted to 0.8. Only three students (Students 3, 6 and 12) didn't manage to achieve at least a satisfactory result with the coefficients of proficiency 0.60, 0.62 and 0.52 correspondingly, but we should take into account that their results were the lowest in the pre-test. The result of Student 6 grew from 0,5 to 0.62 as compared to the pre-test while the results of Students 3 and 12 decreased from 0.72 to 0.6 and from 0.6 to 0.52 respectively. Such results can be explained by the low initial level of these students. They had difficulties with doing home tasks and sometimes didn't manage to do them at all. Nevertheless, these students understood well the importance of mastering translation technologies, thus they attended classes regularly and tried to do their best.

Figure 1 shows that students' results in post-test in translating by hand remained approximately on the same level as compared to their results in the pre-test, while the results in the post-test in translating with the help of CAT-tools are much higher than in the pre-test.
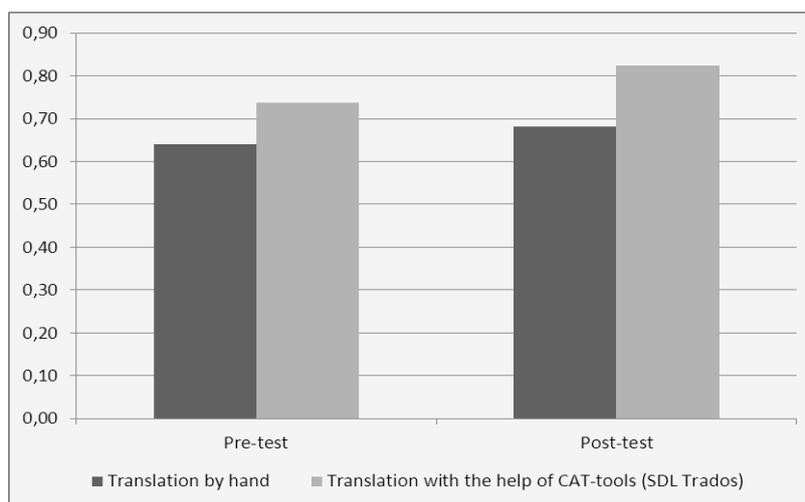
Figure 1. The results of students' translations performed by hand and with the help of CAT-tools (SDL Trados) from English into Ukrainian (pre-test and post-test)

The dynamics of the increase in the coefficient of proficiency in both types of translations (by hand and with the help of CAT-tools) is shown in Table 3.

Table 3

Dynamics of the increase in the coefficient of proficiency in students' translations performed by hand and with the help of CAT-tools (SDL Trados) from English into Ukrainian

Translation by hand			Translation with the help of CAT-tools (SDL Trados)		
Coefficient of proficiency (pre-test)	Coefficient of proficiency (post-test)	increase	Coefficient of proficiency (pre-test)	Coefficient of proficiency (post-test)	increase
0.64	0.68	0.04	0.74	0.82	0.08

The comparison of the students' average results obtained before and after the experimental teaching allows to state that there is a substantial increase in students' proficiency in translating texts from English into Ukrainian with the help of CAT-tools while the increase in students' proficiency in translating texts from English into Ukrainian by hand is definitely low and can't be regarded even as a satisfactory one. The increase in students' proficiency in translating texts with the help of SDL Trados is de-facto even higher as before the experimental teaching the students didn't have any skills of using CAT-tools which was the reason of conducting the pre-test not at the very beginning of the experimental teaching but during the third class.

In order to complement the quantitative results of the study with the qualitative ones, at the end of the experimental teaching a questionnaire was administered to the students to find out their attitude to the methodology developed and the outcomes obtained. The students had to evaluate the methodology and outcomes according to the five-point grading scale: 5 – excellent, 4 – very good, 3 – good, 2 – satisfactory, 1 – unsatisfactory.

The average result totalled to 4.16 which means that the students evaluated the methodology and the teaching outcomes as 'very good'. This indicator is given without points scored for question 10 as it was aimed at finding out whether the students had some preliminary experience in the use of CAT-tools (3.17) so the answers to this questions do not reveal the attitude to the developed methodology of teaching.

The results of the questionnaire show that the students believe they acquired all the necessary skills of using such a CAT-tool as SDL Trados (4.17), they felt confident that they could easily master other CAT-tools if it is needed (4.17), their skills in translating social and political texts improved greatly (4.5), their motivation for translation work increased (4.08), interest in CAT-tools rose (4.25), translator's confidence increased (4.08), typing speed grew due to the regular fulfilment of the tasks in class and at home (3.67). The students also gained more confidence in translating social and political texts (4.25) and now felt that they met the requirements of employers (3.58). They evaluated very

positively the choice of the CAT-tool they had to work with (4.5) and the choice of the texts was quite good as well (3.92). They also stressed that it was expedient to introduce CAT-tools into the process of teaching other translation courses (e.g. translation of patents, etc.) – 4.75.

The students also had to express their impressions of the experimental teaching and to provide their suggestions as to the further improvement of the methodology in the form of open questions. Their impressions turned out to be purely positive. In general, they can be summed that the developed methodology was interesting and extremely useful for successful employment. The students especially emphasised the instructor's approach to the classes, strict and logical explanations how to use the programme and highly positive learning environment during the classes so that very often after the end of the classes the students didn't want to go home.

The suggestions included the desire to diversify the subject area of texts for translation, to reduce the amount of home tasks, to continue the study of CAT-tools in the next academic year, to obtain access to CAT-tools from their personal computers and to simplify the procedure of doing home tasks. Special students' complaints were connected with the state of hardware at the university computer class. In particular, the students stressed the necessity of buying new computers with modern software.

Discussion

The results of the experimental teaching prove that the hypothesis preconceived at the very beginning of the study is confirmed. Students' proficiency in translating social and political texts from English into Ukrainian with the help of CAT-tools increased sufficiently both qualitatively (they reached the Bespalko coefficient of proficiency at 0.8 level) and quantitatively (they translated texts of greater volume during the same time limits). The students also revealed very positive attitudes to the developed methodology of teaching which averaged 4.16 points out of 5. The results obtained correlate well with the previous researches (Alotaibi, 2014; He, 2014). Thus, the study devoted to the application of computer-assisted translation tools to the teaching of scientific and technological translation English to Chinese showed that training in the use of CAT-tools enables students to deal better with scientific and technological features and to gain higher scores (He, 2014). The research aimed at exploring expectations and attitudes of the translation students in teaching CAT-tools (Alotaibi, 2014) revealed very positive students' perception due to which the author deems integrating modern translation technologies into the translator training programme as highly recommendable.

At the same time the students demonstrated the insufficient increase in translating texts of the same subject area by hand so the natural question arises: why did they have so little progress in translating by hand? We can assume that the answer lies in the absence of the motivation component while performing such translations as the students had been persistently complaining about this task during the whole semester and repeatedly asking to cancel this type of translation. Even the possibility of obtaining an additional mark that could improve their overall result by the end of the semester didn't provide a substantial stimulus for performing this kind of task. Here we should note that the majority of the fifth year students were already employed which resulted in the change of motivation stimuli. As the obligatory employer's demand included CAT-tool skills rather than excellent marks in the diploma, the chance to master them was a powerful stimulus for the students which motivated them to attend classes and to do home tasks and tests with the help of SDL Trados. Despite the students' complaints about the difficulty of translations to be performed and about the volume of home tasks consuming too much time, they still agreed that all these tasks were useful and doing so many tasks contributed greatly to the development of their CAT-tool and translation skills.

Conclusions

The need for introducing modern technologies into the Ukrainian translator training programmes is evident and incontestable. The present paper is one of the first steps in achieving this goal as the methodology of teaching CAT-tools to students majoring in philology was empirically tested yielding the data important for further research in the field.

On finishing the course "Modern Translation Technologies. CAT-tools", based on SDL Trados, which included four thematic blocks (translating files of various formats, creating and managing term bases, creating translation memories based on existing translations (alignment) and managing them, managing translation projects) and three sub-systems of exercises (preparatory exercises, exercises for developing skills in translation with the help of CAT-tools, exercises for developing abilities in translation with the help of CAT-tools) ,the students managed to achieve the desired level of proficiency which amounted to 0.82 under Bespalko scale. They also showed increased quantitative performance having translated texts of larger volume within the same time limits (45 minutes).

Taking into account the results of the conducted pilot experiment, we can state that the methodology of teaching students majoring in philology to translate social and political texts from English into Ukrainian using CAT-tools (SDL Trados) proved to be efficient. The perspective of future studies in this area lies in improving the methodology by means of introducing more CAT-tools including the cloud-based ones and in implementing the developed methodology into the structure of other translation courses with further experimental testing.

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