

PROSPECTIVE PHILOLOGISTS' TRANSLATION ASSESSMENT TRIANGULATION: SCREEN VIDEO RECORDING AND THINK ALOUD PROTOCOL COMBINATION

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Purpose. The article strives for the enhancement of the efficiency of translation competence assessment in philologists' university training with the help of the triangulation method. It is deemed in the concurrent involvement of different assessment agents (teacher, peer and self) into integrated and collaborative translation performance evaluation from two perspectives, i.e. translation product quality and process workflow, with the use of diversified methods based on different theoretical approaches. This research aims at the study of students' video screen recording contribution combined with think-aloud protocols (TAPs) to increase the assessment objectivity and reliability of the received translation product. **Method.** A mixed research design was developed and implemented. It involved 40 third-year university students majoring in Philology, who were asked to perform a written translation of the excerpt of English popular science article in Marketing (c. 250 words) into Ukrainian in MS Word using any reference sources at hand, video record the process of their translation and accompany it with their comments. The research was completed with the questionnaire on students' attitude to the screen recording and TAP involvement into translation task performance and assessment. **Findings.** The findings of this study reported on the positive impact of screen recording on the assessment accuracy, informative value of the collected data and formative effect of triangulated assessment method on students' translation competence acquisition. **Implications for research and practice.** The received results can serve for the optimisation of the procedures of translation task difficulty measurement and competence assessment in the translation classroom.

Keywords: translation assessment; assessment triangulation; translation process assessment; translation product assessment; screen video recording; think-aloud protocols (TAPs); undergraduate philologists

Introduction

Modern globalised market requires highly qualified translators and interpreters to provide efficient communication and interaction of the representatives of different nations and cultures in various contexts and spheres worldwide. Systematic and well-structured assessment is considered a key to success in students' training intensification due to its opportunities to link language service provision industry requirements with planned learning outcomes, to integrate and consolidate teaching and learning, to estimate and correct borderline and final training results, to forecast prospective graduates' performance in the nearest future. In order to put them into effect, modern translator trainers need to search for new ways to raise assessment accuracy, objectivity and reliability in translation training. This task appears quite challenging and toilsome in view of complex and integral nature of translation competence and its dynamic acquisition process as an assessment construct.

In this vein, triangulation or cross-assessment is deemed as an advanced method of translation competence assessment enhancement. It was suggested first in sociological studies as the method of data collection and interpretation validation through cross verification from several sources and perspectives (Denzin, 1978; Patton, 1999). Consequently, Denzin (1978) suggested four types of triangulation according to the factors being diversified: 1) theory triangulation, which requires the application of different theoretical approaches to data collection and interpretation; 2) investigator triangulation, which consists in the involvement of two or more researchers to collect, process and interpret the received data; 3) data triangulation, which purports the collection of data from different sources; 4) method triangulation, which involves the employment of multiple and varied methods and techniques for data collection and interpretation (p. 102).

In the context of translation studies and pedagogy, the idea of triangulation was first adopted and used for the needs of translation process investigation and later extended to facilitate translation training by Hansen (2008). The main benefits of this method application lie in the opportunity to evaluate the received information according to different criteria and, as a result, to study the assessment construct deeper. It also helps understand better the reasons and factors influencing students' learning progress or failure, overcome

intrinsic teacher subjectivity originated from a single assessment method or assessor, prove the accuracy and reliability of the received information in case of its convergence. Moreover, triangulation concept fits within the current framework of translation teaching and assessment adopted in modern foreign and domestic universities (Korol, 2018; Korol, 2020b): 1) to arrange translation training and, therefore, its assessment on the basis of the interrelation of competence-based, social constructivist, collaborative, situational, experiential, process- and problem-based, reflective and differentiated theoretical approaches; 2) to involve different assessment agents, i.e. a teacher (hetero assessment), a student himself / herself (self-assessment) and their fellow students (peer-assessment). In case of their collaborative efforts, we can also talk about group assessment which can take different triangulated forms; 3) to assess translation competence through gauging translation process, product and service parameters from different perspectives (Kockaert & Segers, 2017). It should be noted here that in case of proper product quality and optimal process indicators we can expect minimum acceptable service quality provision; 4) to search and develop varied assessment methods and tools to be used by different assessment agents at different training stages in order to evaluate either translation process or product.

Product-directed assessment tools are mainly concentrated on the particular translation task or its fragment performance and received target text quality analysis and evaluation with the use of versatile assessment methods and techniques (holistic, analytic or combined) which can be employed by different agents. In contrast, the wide range of process-oriented translation assessment tools includes periactional (online) and postactional (offline) assessment techniques (Krings, 2005). Krings (2005) distinguishes between periactional assessment techniques of verbal and visual data elicitation in the process of translation. Individual / pair / team / collaborative think-aloud protocols (TAPs), free-form and guided self-reflection reports, translation diaries and logs, checklists, etc., presented in both hand-written and computer-mediated forms belong to the tools eliciting verbal data on the translation process. Information received in such a way is predominantly characterised with high subjectivity being based on students' self-reflection and self-assessment. Periactional assessment tools of visual data elicitation include comparatively high-tech methods of keystroke logging, eye-tracking and screen video recording. Compared to the techniques directed to verbal data elicitation they deliver actual and objective information, free of students' personal perception and interpretation. Postactional or retrospective assessment techniques include target text analysis through the studies of translator's records and notes, student's target text changes and corrections as well as retrospective verbal protocols (translation self-reports, target text commenting from the viewpoint of the translation problems encountered by the students and achieved solutions, checklist, survey or questionnaire completion, group discussion participation, etc.). In most cases, these techniques provide relatively subjective and incomplete information. Anyway, they do not affect the translation process workflow. At the same time, retrospective assessment techniques appear to be quite efficient in terms of formative assessment rather than summative one. The ways to triangulate translation competence assessment in prospective philologists' training are summarised in Table 1.

Summative or mid-course assessment of students' translation competence is usually limited to some kind of translation task performance when the received target text is graded with the help of either holistic, analytic or combined assessment scales or grids. In this case, we completely agree with Angelone (2015) that "... the translation product is a relatively shallow snapshot of student performance..." (p. 133). Therefore, translation process components connected with translation problem solving, decision-making and relevant strategy application should not be neglected, especially in terms of mid-course assessment in translation training. Since they can provide rather useful information to supplement product-oriented assessment results and contribute to their accuracy and objectivity from the viewpoint of translation assessment triangulation. Moreover, this problem gains momentum in terms of larger students' groups, growing distance or blended learning practices, partially caused by the lack of contact hours, when summative or mid-course test translation performance can be even allocated out-of-class, arising additional issues connected with the wide use of machine translation and fair play.

The conducted review of literature sources, devoted to the problem of translation process-oriented assessment tools and techniques, outlined the need to involve both objective and subjective sources of information to balance out the situation and bridge the translation product and process quality indicators for the purpose of more accurate and objective assessment. Among objective periactional process-oriented assessment tools screen video recording looks the most promising (Angelone, 2015; Angelone, 2018; Shreve, Angelone & Lacruz, 2014) due to such factors as free software availability, any operating system compatibility, application practicality and user-friendliness, high ecological validity, easiness of the received results analysis and interpretation by both students and teachers. Furthermore, this tool demonstrates high formative potential according to many researchers (Angelone, 2015; Angelone, 2018; Shreve, Angelone &

Lacruz, 2014). Thanks to the visual representation of the translation problem-solving process it helps students self-reflect, notice and correct their mistakes in the target text, especially in short-term retrospective post-task review and revision. Both students and teachers get an opportunity to observe the translation process in its natural flow and context, while fast-forward, rewind, and pause video options make data management and analysis an easy task (Angelone, 2015). In this regard, Angelone (2015) offered different ways of screen video recording use in translation classroom. It can serve for students' self-reflection and translation mistake awareness; for re-tracing the errors in the target text through the process; for introducing students to professional translators' strategies of problem solving and decision-making; for demonstrating different translation behaviour patterns combined with relevant target text samples; and, finally, for a deeper and more comprehensive assessment of students' translation performance.

Table 1. Translation Assessment Triangulation

Triangulation Type	Assessment Component and Its Diversification	
Theory	Theoretical approaches to translation assessment	Competence-based
		Social constructivist
		Collaborative
		Situational
		Experiential
		Process-based
		Problem-based
		Reflective
Investigator	Assessment agent	Hetero assessment
		Peer-assessment
		Self-assessment
Data	Assessment object	Translation product
		Translation process
Method	Assessment methods and tools	Product-oriented assessment tools: target text evaluation with the help of holistic, analytic or combined assessment scales and grids
		Process-oriented assessment tools: 1) periactional: a) of verbal data elicitation: - different TAPs; - self-reflection reports; - translation diaries and logs; - checklists;
		b) of visual data elicitation: - keystroke-logging; - eye-tracking; - screen video recording;
		1) postactional: a) connected with target text and by-product retrospective analysis; b) retrospective verbal protocols: - translation self-report; - target text commenting; - checklists; - surveys and questionnaires; - pair / group discussions and interviews.

However, in the case of screen video recording application for the purpose of assessment a teacher can only guess or predict what actually happened to a student in the process of translation according to the developed problem indicator typology (Angelone, 2018). Nevertheless, it is even more important to know if the student identified and recognised the problem type, generated possible solutions, evaluated them properly and did it as efficiently as possible in the process of translation. Such kind of information we can obtain with the use of subjective periactional tools of verbal data elicitation only, e.g. TAP. As stated by Li (2004), it is often used in translation process-oriented research in order to complement and triangulate the received data from target text quality assessment, post-task questionnaires and interviews. TAP is a specific introspection

method of data collection, which stimulates students to articulate and audio or video record their thoughts and ideas concurrently in the process of translation, focusing on the aspects of cognitive and creative activities, information search, problem solving, decision-making, translation result revision and evaluation (Kusmaul, 1995, p. 7).

According to Ericsson and Simon (1984), TAPs do not interfere into the sequence of thoughts and problem-solving phases, however, they increase the total time required for the task completion because of the time spent on verbalisation (p. 62). As reported by Jakobsen (2003), this extra time amounts up to 25% rise of typical translation duration in the case of TAP application. Some other problems are closely connected with the use of TAPs as supplementary subjective assessment tools. They often create so-called cognitive overload, especially in case of high translation task difficulty and lack of subject's previous experience in this activity performance. In addition, TAPs usually provide incomplete information on the process. Moreover, the subjects tend to keep silent in two opposite situations: when they are involved into automatic subconscious processes and when they face real translation problems that cause cognitive pressure and overload (Hansen, 2005, p. 513). The other indicators of the problems encountered by the students in the process of translation manifested in TAPs are repetitions of problematic passages and active use of different fillers (Angelone, 2020).

Despite its contradictory image and extensive criticism in modern translation studies, TAP application for translation process research is still widespread. It has been examined in pair with Translog keystroke logging to analyse its impact on subjects' translation speed, revision and segmentation (Jakobsen, 2003); in combination with retrospective comments to shed light on the experience and emotion role in the translation process (Hansen, 2005); accompanied with Translog keystroke logging and screen video recording to identify pause nature and character in the translation process (Rosa et al., 2018).

As seen by Vygotsky (2007), any thought verbalisation influences the further unfolding of thinking and problem-solving processes. On this basis, Hansen (2005) concludes that TAP application affects students' cognitive activity, translation process and product (p. 519). Accordingly, Lörcher (1991) proved the empirically positive impact of TAP application in translation training on students' problem-solving abilities and received target text quality. Finally, Pavlović (2013) suggested collaborative modification of TAP in the form of a natural dialogue, directed to translation problem discussion and solution in pairs or groups, and established its efficiency in translation university training. Due to the features and proved benefits of screen video recording and TAP discussed above, we decided to develop and verify the triangulated method of students' translation competence assessment based on their combination.

Aims and hypothesis. Taking into consideration, the existent need in translation competence assessment triangulation as the way to enhance its efficacy in a modern university setting and real practical value of screen video recording and TAPs as supplementary formative assessment tools, the given article aims at:

- 1) the examination of the opportunities provided by the combination of translation product assessment, screen video recording and students' TAPs analyses in terms of their translation performance assessment optimisation, including the development and verification of multidimensional grading method;
- 2) the studies of the students' attitude to the use of such assessment methods in their university training.

Methods

Research Design

In order to investigate the opportunities of the combination of the aforementioned assessment tools for the purposes of the enhancement of students' translation competence assessment accuracy, this survey employed a mixed research design. The descriptive qualitative research method outlined the possible application of periactional objective and subjective assessment tools for prospective philologists' translation competence assessment triangulation. Thus, the concept of triangulated mid-course assessment was developed and tested. The received results were processed and analysed with the help of quantitative research methods. Qualitative research in the form of a questionnaire was also employed for the studies of the students' attitude to the suggested and implemented triangulated assessment method.

Participants

The research participants were 40 third-year students, mostly females, aged from 18 to 20 years, majoring in Philology. They took their third out of five units of the Translation Practice from English course at the Institute of Economics, Management and Information Technologies of Poltava University of Economics and Trade during 2019–2020 academic year. This unit was focused on the acquisition of declarative and procedural knowledge concerning different translation grammatical transformations and the development of full translation skills in Management and Business Administration domain. In the second term of their third bachelor year, they took the course of Translation Practice from English in parallel with

the course of Translation in Economic and Managerial Domain. The students' English language proficiency level ranged from B2 to C1 according to the CEFR scale. All of them were native speakers of Ukrainian. The students volunteered and consented to participate in this study. They had to pass their credit in a lockdown-forced distance mode during their summer examinations that also urged the researchers to develop new assessment procedures to be reliably used out of class in equal and fair terms.

Instruments and Procedure

As one of the assignments to pass their credit in Translation Practice from English course, the research participants were asked: 1) to perform a written translation of the excerpt of English popular science article in Marketing into Ukrainian in MS Word using any reference sources at hand; 2) to video record the actions from the screen of their personal computer or another device while translating; 3) to accompany their translation with thinking aloud about the translation problems they encountered and the solutions they proposed, and the decisions they made; 4) to complete a questionnaire about their attitude to such kind of assessment procedure.

The excerpt for translation numbered 248 words. Since such source text volume corresponds to the required length of the texts used in professional translator certification examinations such as ATA, NAATI or CTTIC, containing English to Ukrainian combination (Korol, 2020a). Translation brief was to translate Marketing popular science article into Ukrainian to be published on the website representing the most successful business start-ups in the world to general public.

The source text content comprehension and translation required some domain specific subject knowledge and involved the full range of the translation problems classified by Orozco and Hurtado (2002), namely: 1) linguistic problems (acceptable equivalent selection on the basis of deep contextual analysis and background knowledge); 2) extra-linguistic problems (culture and domain-specific vocabulary units rendition with the help of relevant translation techniques and strategies); 3) transfer problems (mostly solved with grammatical transformation application); 4) pragmatic problems (translation adaptation to the situation described in translation brief and target audience characteristics).

According to PACTE (2011), the source text segments containing these translation problems should be treated as Rich Points (RP), i.e. "... the most salient, characteristic, and difficult problems in a text" (p. 327). Their rendition into the target language typically requires active cognitive, creative or information search and results in either errors or acceptable and even successful translation solutions in the target text. The latter occur due to appropriate problem-solving strategy application indicating proper translation performance originated from relevant competence and expertise, while the former can be explained with the failure in problem identification or wrong strategy involvement disclosing insufficient translation competence level. Thus, product-oriented translation assessment is limited to the analysis of RP rendition acceptability in the target text produced by the students according to the translation brief (PACTE, 2011). This idea roots from the vision of translation as the infinite problem-solving process.

In order to get a deeper insight into the nature of the problem identification and solution procedures as the indicators of translation competence level, we decided to involve two more tools: pericational objective technique of visual data elicitation (screen video recording) and subjective one of verbal data elicitation (TAP). Angelone (2015) analysed different types of screen video recording software to be used in translator training according to such features as audio, webcam recording option, scheduled recording and paused recording, post-editing and annotation options, online sharing and recording length features. As for our assessment framework, the most crucial of them should be audio recording option, which allows us to combine objective screen video recording with subjective TAP, online sharing option, unlimited record length, simple user interface and minimal system requirements. On this basis, we chose free screen recording software UVScreenCamera 6.0. It enables the video recording of both screen events and external sounds captured by a computer microphone. Students were provided with video instruction, prepared by the researchers, on how to install and utilise this software. In addition, they were asked to trial its functioning in advance to prevent any technical problems at the credit. The students were instructed to verbalise any problems they face in the process of translation through their categorisation, selection of possible ways to search for solution options, consideration of the produced solutions, and substantiation of the taken decision.

Ericsson and Simon (1984) singled out three levels of verbalisation: 1) direct verbalisation (usually presented in the form of rambling unclear formulations); 2) described, encoded and explicated thought content; 3) verbalised explanation related to previous thoughts, ideas and motives. In order to formulate and consider the given translation problem at the second and third levels, the students should possess relevant declarative knowledge (Ericsson & Simon, 1984) as some kind of prerequisite of translation skills development. Following the idea of collaborative TAP suggested by Pavlović (2013), we encouraged our students to comment on the process of either pair or team translation problem solving during our classes.

Due to such previous experience, we expected them to perform well in terms of their translation process commenting and problem articulating. Anyway, we encouraged the participants to use the so-called monodialogue technique, i.e. commenting in the form of formulating heuristic and lead questions and generating different versions in response with their further evaluation and selection.

Taking into account the chosen source text similarity to the ones offered to candidates at professional translator certification examinations such as ATA, NAATI and CTTIC and empirical data on translation duration rise in the case of TAP application (Korol, 2020a; Jakobsen, 2003) we increased basic projected translation time of 1 hour by 25%. Therefore, the students were supposed to complete their assignment within 1 hour and 15 minutes. After that, they had to send the received MS Word files with their target texts and video records of the commented process to one of the researchers' e-mails for grading and evaluating.

In a two-day period, the students received their grades and teacher feedback, specified below. Finally, they were asked to complete a questionnaire on their attitude to the format of the performed translation assessment task in Google Docs online. The questionnaire was anonymous and contained 13 questions:

1. Do you think that screen video recording influenced your translation behaviour?
 - a. Yes b. No
2. How would you characterise this assessment experience?
 - a. Positive b. Neutral c. Negative
3. Did screen video recording help you _____
 - a. manage the projected time and process better? (yes, no, I don't know).
 - b. stay focused on translation task and tuned? (yes, no, I don't know).
 - c. realise your translation habits, strengths and weaknesses? (yes, no, I don't know).
4. Did you watch and analyse your screen video record after submitting the assignment to the teacher?
 - a. Yes b. No
5. Do you think that the instruction to articulate your translation problems and their possible solutions influenced your translation outcome?
 - a) in a positive way
 - b) did not influence at all
 - c) in a negative way
6. Did concurrent commenting on the translation process help you _____
 - a) identify and classify translation problems? (yes, no, I don't know).
 - b) generate possible solutions? (yes, no, I don't know).
 - c) take optimal translation decisions? (yes, no, I don't know).
7. What was the most challenging in this translation task performance?
 - a) source text comprehension and analysis.
 - b) target text production.
 - c) target text revision.
 - d) commenting on the translation process.
8. Was the received encoded comment on your assessment translation task performance more useful to you than the traditional grade?
 - a. Yes b. No
9. Did you watch your screen video record after the arrival of the teacher feedback?
 - a. Yes b. No
10. Do you know which translation problem-solving strategies you need to develop and improve now?
 - a. Yes b. No
11. Can you explain the nature of your translation errors now?
 - a. Yes b. No
12. Do you think that such kind of assessment tasks, methods and teacher feedback promote your translation skills development?
 - a. Yes b. No
13. Would you like to have your other translation assessment tasks to be performed and evaluated with the help of this method?
 - a. Yes b. No

Data Analysis

The received data were analysed in two consecutive stages: 1) translation assessment task performance evaluation based on three sources of information concerning translation product and process and its statistical verification with the help of Spearman Rank Order Correlation; 2) processing and interpretation of information received from the students' questionnaire on their attitude to the suggested assessment and

grading procedure and its impact on their translation skills and strategies development.

The first stage involved target texts assessment and screen video records analysis including students' think-aloud patterns. The first step was directed to the target text assessment. It was based on the evaluation of prior determined source text RPs rendition into the target text according to the acceptability criterion.

Pre-translation source text analysis conducted by the researchers allowed them to single out 28 RPs taking into account students previous training content in full translation performance. Different options for their acceptable rendition were produced and fixed by the researchers and further supplemented with student-suggested appropriate ones. Source text RPs are summarised in Table 2.

Table 2. RP Distribution in the Source Text

№	Problem Type the RP entails	RP Number found in the Source Text	RP Indices in the Source Text
1.	Linguistic	15	2, 5, 8, 10, 11, 12, 14, 15, 16, 19, 21, 22, 23, 24, 25
2.	Extra-linguistic	1	6a, 6b (common nature)
3.	Transfer	9	1, 3, 4, 7, 9, 13, 17, 20, 26
4.	Pragmatic	3	18, 27, 28

The rendition of these RPs in the target text produced by the students was assessed with the use of the acceptability criterion. It is connected with the translation product quality. According to PACTE (2011), the acceptability of translation is determined with the combination of three components, i.e. the efficiency of the rendition of the source text meaning, its compliance with the target text function and target language use appropriateness. So the translation of all RPs found in the source text was marked either A (acceptable) or N/A (non-acceptable). Semi-acceptable mark in case of the lack of one or more components of acceptability was treated as N/A, since it got its further interpretation in the light of screen video recording and TAP analysis results. It should be noted here that 3 RPs (5, 11, 12) were excluded from the assessment procedure since they appeared too easy for translation (90% (36) of the students translated them in an acceptable way without any interruption of the translation flow or comments observed in their on-screen activity and audio record). At the same time, the relevant difficulty coefficient of the rest of RPs fluctuated from 0.3 to 0.7 being satisfactory.

Therefore, the next step of translation task performance assessment was the studies of the students' screen video records and think aloud patterns. For this purpose, the researchers skimmed the student's record, located its passages containing information on each RP processing and examined them. Video passage interpretation was guided by the problem indicator typology developed by Angelone (2018) and modified for the purposes of our research: 1) automatic smooth translation flow pattern, which manifests either the absence of translation problem for the student or its complete unawareness; 2) interruption of the automatic smooth translation flow with an extended pause (> 5 seconds) (p. 184). It can signal some kind of cognitive processing, being caused by different factors (O'Brien, 2006). Pauses can be accompanied with mouse hovering. The nature of such behaviour patterns can be specified from the student's TAP. Moreover, it is reflected indirectly in the target text error type. It was treated mainly as some problem identification manifestation, and could transform into external information search or not; 3) interruption of the automatic smooth translation flow with the external information retrieval. This behaviour pattern corresponds to possible problem-solution search and sometimes evaluation. If it is appropriate to the translation problem type, it should be treated as the manifestation of relevant information search strategy; 4) deviation from the established routines, e.g. revealed in the highlighting of the translated passages with different colour aiming to come back and revise them again while drafting or editing. This behaviour pattern corresponds to the solution evaluation and translation decision making.

Finally, the last step was conducted concurrently with the described above and involved the fixation of think-aloud patterns presence or absence. Only meaningful, problem-related comments were treated as present (they correspond to verbalisation type 2–3 after Ericsson and Simon (1984)).

Having summarised all these options and indicator variations we developed an assessment router to be used by the teacher for the evaluation of the students' translation performance in triangulated manner. It is presented in Table 3. The sample of its functioning is highlighted with green colour.

The points and routes defined for each RP were fixed in the individual student's assessment sheet. It also contained standardised feedback with the corrective guidelines for each route. An example of such an assessment sheet is presented below in Table 4.

The total grade was calculated according to a 100-point scale, which can be easily converted into other assessment metrics and adjusted to the individual number of RPs each source text will have. Students received back their assessment sheets together with the target text with marked and categorised RPs in it.

They were expected to review their target texts, correct the errors, analyse and respond to the teacher feedback with their own to-do list.

At the second stage, we summarised and interpreted the students' questionnaire responses in order to understand if they find the developed assessment method fruitful or not.

Table 3. Assessment Router

RP Translation	Thinking Aloud	Translation Problem Solution Manifestation	Point	Route
Acceptable	Present	Manifested	4.0	1
	Absent	Automatic flow	4.0	2
		Manifested	3.5	3
Non-acceptable	Present	Improper translation solution evaluation	3.0	4
		Improper external information retrieval	2.0	5
		Improper translation problem identification	1.0	6
	Absent	Improper translation solution evaluation	2.5	7
		Improper external information retrieval	1.5	8
		Improper translation problem identification	0.5	9
		Automatic flow	0	10

Table 4. Individual Assessment Sheet Sample

RP index	Points	Route	Route Descriptors
<i>Filled by the Assessor</i>			<p>Route 1: Well done! You've managed to provide an acceptable translation solution and comment on your decision as well.</p> <p>Route 2: Great! It was as easy as a pie for you. You've managed to solve this translation problem on the fly.</p> <p>Route 3: Good job! However, it looks like you could find a much better solution if you grounded your translation decisions. Go on reasoning!</p> <p>Route 4: What a failure! You took the wrong translation decision at the last step. Remember to evaluate all solution options produced. However, you know how to identify translation problems and generate ideas to solve them.</p> <p>Route 5: You have stopped half-way to success! Reconsider your external information retrieval sources and strategies. Where there's a task there's a way. At least, you can recognise this type of problem and that is something.</p> <p>Route 6: Never mind, work on your translation theoretical background harder and you'll be able to recognise and sort out any translation problems.</p> <p>Route 7: What a disaster! You were so close! Try to verbalise your ideas, evaluate each translation option thoroughly and you'll hit the nail on the hand because you really can recognise translation problems and know where to search for the answers.</p> <p>Route 8: There is no time to stand and stare, if you face a translation problem, you are to use external sources efficiently. Just google it! Try to articulate what your problem is and browse relevant sources.</p> <p>Route 9: Something went wrong and you saw it! Try to formulate the problem you have and find its roots. To solve the problem, you are to know what kind of problem it is. Revise your theoretical knowledge.</p> <p>Route 10: Remember literal translation never works! Analyse your source text first to know for sure what problems it contains, identify their nature, list possible solutions and make the right choice.</p>
1			
2			
...			
5			
...			
11			
12			
...			
28			
Total			
<i>Filled by the Student</i>			
Your dominating route			
Is it productive?	Yes No		
What type of translation problems have you solved best?	<ul style="list-style-type: none"> • Linguistic • Extra-linguistic • Transfer • Pragmatic 		
What type of translation problems have you solved worst?	<ul style="list-style-type: none"> • Linguistic • Extra-linguistic • Transfer • Pragmatic 		
Decide what you should do in order to improve your further translation performance:			
1.			
2.			
3.			

Results

All students' materials (target text and screen video record files) were analysed by the researchers with the help of the assessment router suggested above. The received grades were compared with the average points each student obtained during the term completing 15 individual translation activities, consistently assessed either holistically or analytically by the researchers (converted for convenience purposes into 100-point scale as well) and bare RP assessment of the credit translation based on acceptability – non-acceptability criterion only (where each acceptable RP translation contributed 4 points). These summarised data are presented in Table 5.

Table 5. Individual Assessment Results

Student ID	Bare RP assessment results	Triangulated assessment results	Average term translation performance results
I1	88	92	96
I2	80	85	88
B3	56	61	65
G4	84	92	94
Z5	92	96	96
K6	76	82	85
K7	80	86	89
K8	48	54	58
L9	76	82	85
M10	44	50	55
M11	48	56	60
N12	68	75	78
N13	92	95	96
O14	88	91	94
O15	76	84	88
P16	88	95	97
P17	36	46	56
P18	92	96	98
S19	36	45	56
C20	32	42	50
C21	60	70	76
Y22	64	75	78
V23	68	78	83
H24	52	63	68
Z25	76	82	87
Z26	88	90	93
K27	88	92	95
L28	92	95	97
M29	84	88	90
O30	88	93	95
O31	88	92	96
P32	52	60	66
S33	40	52	60
S34	60	69	74
S35	56	67	72
K36	88	91	94
C37	36	48	54
S38	88	94	96
S39	68	76	80
H40	88	92	95
Average	70.1	76.8	80.83

As we can see from Table 5 all the assessment methods fixed students' sufficient training level > 70%. However, the students' grades received from different sources and assessment methods fluctuate, where the average grade of systematic individual translation task performance appears to be the most tolerant with the

highest average value of 80.83. This can be explained with the application of less accurate analytic assessment scales, on the one hand, and aggregating longitudinal nature of the grades analysed: students translated different texts and gradually improved their performance within the academic term. RP translation assessment of the credit task turns out to be the toughest with an average value equal to 70.1, whereas the results of the suggested grading method take a medium position with an average value of 76.8. Its benefit can be seen when we contrast the results of the students with equal grades according to RP translation assessment and their grades received from the suggested triangulated method. For instance, if we consider the grade range for the students with grade 88 (highlighted with green colour in Table 5) we will notice that it varies from 90 to 95. In this case, there is an assumption that the developed assessment router allows differentiating students' current level of translation skills and strategies better being more sensitive to the students' efforts and translation behaviour that is important in terms of mid-course translation competence assessment.

The correlation between the grades received with the application of RP assessment of the credit translation, suggested assessment router and analytic scales employed for individual translation task performance during the term was analysed with the help of Spearman Rank Order Correlation calculated in the software Statistica 10.0 (see Table 6).

Table 6. Correlation of the Results Received with the help of Different Assessment Methods

Spearman Rank Order Correlations, correlations are significant at $p < 0.05000$, $N=40$			
Variable	Bare RP assessment results	Triangulated assessment results	Average translation performance results
Bare RP assessment results	1.000000	0.984289	0.979354
Triangulated assessment results	0.984289	1.000000	0.990261
Average translation performance results	0.979354	0.990261	1.000000

Therefore, the received Spearman Rank Order Correlations values range from 0.979354 to 0.990261 approaching +1 at $p < 0.05000$ for all the assessment results examined. It can be treated as the evidence of positive linear correlation existence between bare RP assessment of the translation task performance, longitudinal average analytical assessment and the suggested triangulated one. A higher correlation of average translation performance results and triangulated assessment ones (0.990261) can be explained with their common focus on the process. The first assessment method takes into account aggregating result of students' translation performance reflecting the process of translation skills acquisition during the academic term, while the second one centres around the current state of translation competence development mirroring this particular process of translation performance.

The analysis of the students' answers given in response to the questionnaire on their attitude to the suggested assessment method showed that 95% (38 students) felt the impact of screen video recording on their translation performance. In particular, all of them agreed that it helped manage the projected time and process better, stay focused and tuned while performing the translation, and realise their translation habits, strengths and weaknesses. As a result, 95% (38 respondents out of 40) treated this type of assessment as a positive experience, and only 5% (2 students) had the neutral attitude to it. It is interesting to note, that 75% of the respondents (30 students) analysed their screen video record after submitting the assignment to the teacher, although they were not asked to. To our mind, this fact proves the students' readiness to self-assess and self-analyse their translation activity and points out that screen video record can provide such an opportunity. Speaking about TAP application, about 88% of the students claimed that the instruction to articulate their translation problems and possible solutions influenced their translation outcome in a positive way, while the rest 12% (5 students) did not care about it. In this vein, according to 88% of the survey participants (35 students) TAP helped them generate possible translation solutions, 38% (15 students) stressed its usefulness for taking optimal translation decisions, and only 10% (4 students) agreed on its positive effect on problem identification and categorisation in the process of translation. However, 45% (18 students) called commenting on their translation solutions the most challenging task. To our mind, it can be explained with the necessity to coordinate two activities at a time that creates an extra psychophysiological and cognitive load. According to Angelone (2020), in the case of the translation of the texts up to 250 words TAPs must not create any additional pressure on the proficient translator. These data correlate with a comparatively low number of comments on RPs translated both in an acceptable and non-acceptable way (48% (480 cases) of them were commented on). The second biggest challenge appeared to be target text drafting for 30% of the respondents (12 students). Three students (7.5%) had most problems with source text comprehension and 7 respondents (17.5%) were worried about target text revision. This response correlates

with the substantial duration of the revision phase observed in 7 analysed patterns of screen video records. Finally, all the survey participants agreed that encoded comment on their assessment translation task performance was more useful than traditional numerical grade. Only 5% of them (2 students) did not watch their screen video record again after the teacher's feedback delivery. Then about 93% (37 students) could name the translation problem-solving strategies they needed to develop and improve. Again almost 88% (35 students) could explain the nature of their translation errors afterwards. Finally, all the survey participants were sure that such kind of assessment tasks, methods and teacher feedback promoted their translation skills development and were ready and enthusiastic to practice them in the future again.

Discussion

In this study, we tried to address the problem of the efficiency enhancement of translation competence assessment with the help of triangulation. It should be implemented from the perspectives of different theoretical approaches to translation training and learning outcomes evaluation, different agent judgement, translation product and process characteristics, varied assessment methods application. In this vein, the mid-course triangulated method of students' translation performance was suggested. It was directed to the translation product evaluation through the lenses of translation process parameters. There was an assumption that received in such a way information would provide deeper insight into the actual level of students' translation competence development being focused not only on the final list of translation successful solutions or errors but covering dynamic aspects of their translation behaviour. Since they provide clear and transparent data on both translation success and failure, these behaviour patterns should be reflected in corrective feedback, directed to the future improvement of students' translation strategies and skills. For these purposes, the procedure of translation product assessment with the help of RP determination and judgement on their translation acceptability was supplemented with screen video recording and TAPs as the objective and subjective methods of visual and verbal data elicitation correspondingly. Specific behaviour patterns and their observed indicators were used in order to evaluate the way the students deal with particular linguistic, extra-linguistic, transfer and pragmatic problems. Taking into account the main steps of translation problem solution starting with its identification / categorisation and finishing with the translation decision making, ability to ground and comment on their actions and acceptability of the received product, 10 individual translation routes were singled out and described. The idea was in granting some points for every step taken towards the acceptable translation solution. Such an approach allowed us to identify the stage of the translation process which caused the error in the target text and grant points for the appropriately taken steps. It completely contradicts conventional point deduction conducted according to the error-based analytic assessment scales widely adopted by both professional translator certification examinations (Han, 2017; Korol, 2020a) and translator trainers. Nevertheless, the suggested triangulated assessment differentiates students according to their translation behaviour patterns and habits. Thus, there is a difference between those, who are able to provide acceptable translation solution for the selected RP on the fly, without any manifestation of problem-solving activity and the ones, who generate acceptable translation solution after efficiently arranged external information retrieval. There is a distinction as well between those students, who produce non-acceptable translation solutions because of different reasons (lack of ability to identify translation problem, inappropriate external or internal information search strategies, unjustified decision making, etc.).

In such a way, the assessment scale extends and students get the opportunity to follow their individual training trajectory being supported and directed with teacher's feedback even in case of mid-course assessment. The received statistic data supplemented with students' opinion confirm the idea of the enhancement of translation competence assessment due to its triangulation. Survey participants exhibited a positive attitude to the developed assessment router and feedback presented in the individual assessment sheet.

Limitations

However, our research has certain limitations which may influence the generalisability of its results. Firstly, the suggested method was used for the assessment of English to Ukrainian full translation in Marketing domain. Secondly, it was applied only once and its further influence on the students learning outcomes can be only predicted and modelled. Hence, similar studies can be carried out in other language combinations, types of translation and domains among the different student population. Finally, its desired formative effect in the context of borderline and mid-course assessment practices is still of great interest.

Conclusions

To conclude we are to stress the productive effect of assessment triangulation in prospective philologists' university training. The application of varied alternative assessment methods and tools can contribute greatly to the increase of accuracy, objectivity and reliability of the received data. Translator

trainers' task is to select and combine efficiently such assessment instruments. Their interrelated and coherent application requires the development of the relevant assessment methods. It is also important to bear in mind that they should serve concurrently both formative and summative needs, provide opportunities for hetero, self- and peer-assessment. The conducted research demonstrated the opportunities of the combination of traditional translation product assessment in view of the translation problems contained in the source text, screen video recording as the way to fix and analyse translation problem-solving manifestations and TAPs to promote translation problem solution and provide subjective information on the translation process workflow. Its results steadily correlate with the results of translation product assessment and average results of longitudinal translation task performance by the students. However, due to the extension of the criteria to be taken into account, the suggested method features higher discriminating fineness, allows teachers to construct students' individual translation behaviour pattern and to outline the promising ways of its correction and optimisation. Further investigation should concern the distant prospect of this assessment method use and its formative effect on the translation competence acquisition by the students.

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