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Student Satisfaction with a Web-based Collaborative Work Platform

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The present paper analyses the results of a research study on translation students' satisfaction and perceived improvement of their computer, tele- and teamworking skills by using Basic Support Cooperative Work (BSCW) software. The data were obtained from questionnaires given before and after taking part in the project. Results have proven the suitability of BSCW for telework training. The students' opinions about teamwork are now more positive and they feel more confident about their computer and translation skills. Student satisfaction is almost unanimous.

Introduction

Today, both tele- and teamworking are common in the professional world as a consequence of globalisation: translation team members rarely carry out their tasks in the same room or the same building. It is not unusual for them to collaborate thousands of kilometres away from each other.

This change is a result of the revolution in information and communication technologies which began with the telephone and the fax machine. During recent years, the computer has become the main tool for teleworking by means of applications like email, chat, videophone and online phone calls. This step forward in communications has brought teleworking to its very peak, making it easier to achieve a variety of tasks efficiently.

Translators are among the professional groups whose working methods have been most influenced by advances in communication. For many years, translators have carried out their work with a computer instead of doing it by hand. In translation agencies, the translation process is often divided into different stages, each task assigned to a different team member: terminologist, documentalist, translator, reviser and project manager. The division of the translation process into different stages is just a form of teamwork, sometimes assembly-line work, which may be completed from a distance thanks to the implementation of new technologies.

Given that professional work is highly influenced by these new communication possibilities, teleworking must occupy its rightful place in student training. This paper presents the results of an experiment carried out at the

Faculty of Translation and Interpreting of the University of Granada, Spain. Translation and Interpreting students formed teams and managed several translation projects by using a collaborative work platform. The objective was to determine the students' overall satisfaction after their collaboration on the project, taking into account every aspect of the project itself.

Conceptual Framework and Related Studies

The information and communication revolution has influenced many professional fields, including translation. This increasingly demanding market expects future professionals not only to have a broad knowledge of the subject matter of the text, but also to proficiently use a variety of computer tools. It is therefore necessary to introduce new technologies in the classroom (Archer, 2002; Askehave, 2000; Hanna *et al.*, 2000; Hong, 2002; Masiello *et al.*, 2005), especially for students preparing for prototypical telework professions.

While a command of languages is still generally considered the cornerstone of quality for the professional translator, other highly important translation tasks incorporate the wide range of opportunities offered by information and communication resources. Tasks in the translation process include documentation, terminology, desktop publishing and handling client and target reader relations.

Today, rapid access to information via the Internet has changed the task of researching the information necessary to understand a source text. Although the Internet has made this process easier, today's translators face the new challenges of developing research strategies and evaluating the quality of information, tasks previously carried out with the help of other professionals such as librarians or documentalists.

Terminology has evolved in a similar way. In the past, the fundamental issue was gaining access to obscure sources of specialised terminology. Today, on-line or CD-ROM digital resources enable translators to access a wide range of lexicons that are regularly updated and expanded. These lexicons guarantee a great degree of precision that is often superior to that expected of the specialists themselves.

Thanks to PCs, any user can construct a text of publication quality with only word processor software. Typesetting and layout have therefore been revolutionised. As a consequence, today's translators have become true multilingual communicators who base their expertise on their command of this assortment of tools. This does not mean that language competence has become less important; on the contrary, it is only one facet of the range of skills they need to acquire. Our approach, which we call the 'Professional Approach to Translator Training' (PATT), is based on these ideas (Aula.int, 2005; Olvera-Lobo *et al.*, 2007, 2008; Senso *et al.*, 2006).

Professional Approach to Translator Training (PATT)

Course modules within translator training programmes are often poorly connected so students rarely gain an insight into the role of each stage of the translation process within the process as a whole. This lack of connection

hinders training in tele- and teamwork, essential skills for modern-day translators.

Currently, the 'Professional Approach to Translator Training' (PATT) is being implemented in several courses. Students are divided into translation teams, each one in charge of managing a translation brief. Each team comprises five members, each of whom selects a different role (documentalist, terminologist, translator, reviser and typesetter, or project manager). For every new translation assignment, team members adopt different roles, so that eventually each student carries out all of the different tasks. Teachers must carefully supervise students' progress during the translation assignments. This method, implemented through the Basic Support for Cooperative Work (BSCW©) software, allows the students to gain an insight into each stage of the translation process and its role within the process as a whole before entering the job market.

Importance of tele- and teamworking

As previously stated, teleworking is crucial for translators' work. Alcina (2002) states that 'familiarising translation students with a virtual environment helps them to acquire the professional skills that will be demanded in the future, since in the current information society translator's work demands the automation of most tasks, the use of teleworking and, on many occasions, distance team working'. We believe PATT enables students to publish their results and share their tasks on the web, strengthening their teleworking skills.

The PATT has been created to ensure better overall translator training and to minimise tutorial support in translation briefs, as it is already given in other courses in the curriculum. This method best reflects the professional market: as a principle, freelance translators do not rely on other professionals to revise and control their work step by step. When freelancers need revision, they most often contact an agency or the client in order to solve specific problems, or they merely send the final product with notes indicating the problems encountered and how they solved them. A virtual environment also favours this kind of translation brief. The use of collaborative work tools allows students to share problems or questions that may arise in the course of a translation assignment both with their peers and with teachers (Alcina, 2002). Group members remain in contact during this process and can get additional information and feedback if necessary.

The PATT format also strengthens an additional aspect that is important for professional translators: active participation in a team. Several authors have stressed the importance of being able to work both individually and as a member of a large team in order to produce high-quality translation. Mayoral (2000) emphasises the necessity of working together not only with fellow translators and professionals in related fields, but also with experts in the subject matter of a given translation.

This approach also promotes self-teaching. Students can always access their tutors and technical managers for assistance, but they are personally responsible for meeting the standards and needs of the colleague who represents the next link in the chain of production.

Student satisfaction

Virtual classrooms have gained importance over recent years, which has led many universities to launch virtual platforms or environments (Butler *et al.*, 2001; Kollias & Kikis, 2004; Masiello *et al.*, 2005).

The appearance of a new didactic model, which is far from the traditional system of masterclasses, implies that teachers and researchers must evaluate the tool in order to justify the existence of the new model. Baroudi *et al.* (1986) state that a high level of user satisfaction with a given system promotes a better use of that system. In this sense, measuring the individuals' satisfaction is a clear way to validate the model. This idea is supported by several recent studies regarding users' satisfaction with virtual learning environments (Coppola, 1999; Kollias & Kikis, 2004; Masiello *et al.*, 2005).

Questionnaires are a frequently used method of research in the social sciences. They give firsthand information on the opinion of the individuals about those questions that are most relevant in the opinion of the survey designers. An effectively arranged survey facilitates fast data processing, complete confidentiality and a more objective understanding of research results. Questionnaires also make it possible to collect both quantitative and qualitative information (Kollias & Kikis, 2004). Qualitative questions serve essentially to illustrate and explain the quantitative data, which are the main sources of information derived from questionnaires. Converting this information into numbers is essential in order to apply statistical processes. Numeric coding methods for scale-type answers are commonly used. The Likert scale is one of the most widely utilised (Hong *et al.*, 2003b; Kollias & Kikis, 2004; Masiello *et al.*, 2005; Yeo *et al.*, 2002). It evaluates user satisfaction according to a scale of values. For example, satisfaction can be measured on a five-point scale by choosing between 0 (strongly disagree) and 4 (strongly agree). Numbers are managed through statistical analysis software; one of the most useful programs is Statistical Package for the Social Sciences (SPSS©) (Harvey, 1995).

Questionnaires are normally given on completion of the learning experience (Coppola & Thomas, 1999; Hong, 2002; Hong *et al.*, 2003a; Kollias & Kikis, 2004). In general, students show satisfaction with the virtual environments (Collins, 2000; Fredericksen *et al.*, 2000; Kollias & Kikis, 2004; Motiwalla & Tello, 2000; Oliver & Omari, 2001; Swan *et al.*, 2000; Yeo *et al.*, 2002). The questionnaires given at the end of the experiment also reveal other interesting results. Hong *et al.* (2003a) state that members of a virtual classroom appreciated flexibility and teamwork, felt motivated and improved their computer knowledge. Carswell (2000) notes this same idea in a study of distance learning, as does Collins (2000) in an experiment with biology students. Finally, Kollias and Kikis (2004) point out that the students use the collaborative work platform along with other cybernetic tools.

On certain occasions, questionnaires were given prior to introducing students to the didactic model. In these cases the information sought is mostly related to the students' attitude towards information technologies and their level of prior knowledge of computer tools and virtual environments (Hong *et al.*, 2003b; Masiello *et al.*, 2005). Yeo *et al.* (2002) point out that user determination to choose a system is influenced by its effectiveness and

user-friendliness. However, effectiveness and user-friendliness do not seem to be the only reasons for students to be interested in this type of environment (DeLone & McLean, 1999; Lederer *et al.*, 2000; Venkatesh & Davis, 2000). Other explanations of user satisfaction are related to their general attitudes toward technology, the quality of information, previous experience and the impact of the system's organisation.

To conclude, few existing studies try to measure the level of satisfaction of the user before and after having used a didactic model, which was the objective of the present study. Recent research carried out by Masiello *et al.* (2005) is a noteworthy example of the 'before and after' questionnaire method, but we cannot rely too heavily on this study as a reference because its field (microbiology) is so different from ours.

Methods

Data sources and data management

The aim of our study was to determine the level of student satisfaction after having participated in a translation project through a collaborative work platform. The results were obtained from questionnaires given before and after taking part in the project. The objective was to find out whether students observed a quantitative or qualitative change of their knowledge in different areas (tele- and teamworking, computers and stages on the translation process) or were more satisfied with their level of knowledge after taking part in this project.

Teachers from each course introduced the collaborative work platform and organised different work teams. These teams were composed of students who played a given role: documentalist, terminologist, translator, reviser and project manager. At times, students were required to complete more than one translation so they learnt to change roles easily. In this way it was possible to enhance the students' knowledge of the translation process. The teachers' task consisted of introducing the virtual classroom and assigning translation briefs periodically. Students had to observe the deadline proposed by the teacher and assume their roles in the translation process with a responsible, serious, team-oriented attitude.

The questionnaire aimed to address the peculiarities of virtual classrooms, including computer knowledge, tele- and teamworking. Questions from the survey were specially conceived to obtain the necessary information on these topics.

The sample group for this survey consists of 128 fourth-year students (70%), third-year students (15.5%) and second-year students (14.5%). The students were registered in the following courses: Spanish–English Translation Level 9 (45.3%), Spanish–English Translation Level 3 (24.3%), Italian–Spanish Translation Level 4 (13.3%), Russian–Spanish Translation level 1 (7%), Portuguese Level 3 (6.3%) and Russian–Spanish Translation Level 4 (3.9%). The majority of the students (73.6%) were less than 23 years old. The majority were women (82.5%). Because of the variety of courses and subjects, there was no fixed number of briefs to complete: the majority of students (67.3%) completed

fewer than four. All data from the students involved in the experiment were processed and analysed.

Data were collected through two questionnaires, one before and another after the implementation of the PATT. In this way, the individuals' perception of changes in level of satisfaction and knowledge improvement was better depicted. The practice of giving questionnaires before and after the experience is a novelty among existing research studies dealing with student use of virtual platforms (see Student satisfaction above).

The questionnaire was structured around five main topics. The first brought together all demographic information (age, gender, course, subject, deadline and number of translation briefs completed). The rest collected information about computer knowledge, translation, tele- and teamworking. The majority of the questions were closed and included ordinal answers with scales ranging from 0 (minimum) to 4 (maximum). Other questions were open-ended, requiring more detailed answers.

Data analysis

A reliability analysis (Cronbach's alpha) was applied after processing all data in two different matrixes of SPSS© 12.0 (one for pre- and the other for post-course questionnaires). Cronbach's alpha is the most widely used indicator for this type of analysis. The alpha coefficient determines the internal consistency of a scale analysing the mean correlation of a given variable with all other variables on the same scale. It produces values between 0 and $+1$, although negative values can occur indicating that within the scale there are items which measure the opposite of the others. The closer the coefficient is to $+1$, the greater the degree of internal consistency of the indicators in the scale studied. However, general agreement on the lower limit required to consider a scale reliable or not does not exist. In our study, the value of Cronbach's alpha in the pre-course questionnaire is > 0.9 (0.902), which can be considered excellent. Moreover, the value for the post-course questionnaire is 0.802, which can also be considered good. These figures clearly confirm the reliability of our questionnaires as research instruments.

The results given in the fourth section address the following procedures: frequencies, descriptive statistics, contingency tables and bivariate correlations (Spearman's rho is used for ordinal variables). Sector graphs and box diagrams from the fifth section aim to display the result in a simpler format.

Results

Questionnaires given prior to with PATT experience

Computer

Firstly, the students had to evaluate their computer knowledge assigning one value for one item of knowledge: 0 (bad), 1 (poor), 2 (adequate), 3 (good) or 4 (very good). The average was the most frequently used measurement in this study.

When comparing measures, the three first variables (Word Processors, Web Browsers and Finding Information on the Internet) produced similar values

(2.69, 2.70 and 2.55 respectively). However, Designing Web Pages and Editing and Desktop Publishing Texts gave lower values (0.60 and 0.50 respectively). Standard deviations were also similar (0.940, 0.989, 0.931, 0.799 and 0.846 respectively).

Teleworking

The averages for teleworking are illuminating. Very few students knew what teleworking consisted of (1.65) and even fewer students had any experience of it. In spite of this lack of experience, the question 'In what way does it make the translation process easier?' generated a high percentage (2.38) in response.

Teamworking

Questions regarding teamworking generally gave positive answers (good or very good): 74.8% of the students considered teamworking important or very important for the translation process. The questions measured the following: level of communication with team members, level of communication with the teacher and availability to solve technical or translation problems that other team members may have. The five possible answers for each case ranged from 0 (bad) to 4 (very good).

Translation

Table 1 shows the results from the questions regarding translation. They reflect the students' perception of the different types of knowledge that translation involves. Different stages involve these items of knowledge and, according to this, the variables are divided into five groups: Documentation (D), Terminology (T), Translation (TR), Revision (R) and Project Manager (PM) (Table 1).

Questionnaires given after with PATT experience

Computer

There is a high average for the five types of knowledge after working in the virtual classroom. The three first types of knowledge had slightly higher averages: word processors (2.57), Internet web browsers (2.59) and finding information on the Internet (2.64). The average mark of the students' self-evaluation for designing web pages was 2.11, and the average for editing and desktop publishing texts was 2.13.

Teleworking

An average rating of 2.83 corresponded to the first question (Getting familiar with teleworking thanks to the PATT), and the average for the second one was 2.91 (In what way do you consider teleworking facilitates the fulfilling of translations briefs within the PATT?).

Teamworking

There is a highly positive evaluation of teamworking variables after taking part in the PATT. Averages, from highest to lowest, were as follows: level of communication with the team members (3.04), level of communication with the teacher (2.98), availability to solve technical or translation problems that

Table 1 Translation knowledge survey prior to the experiment

		Minimum	*Maximum*	*Average*	*Standard deviation*
D	Search for and selection of terms relevant to ST topic	0	4	2.50	0.760
	Search for comparable documents on the web	0	4	2.35	0.946
	Selection for relevant documents of adequate quality	0	4	2.32	0.942
T	Elaborating ST conceptual system	0	4	1.99	1.016
	Search for and extraction of specialised lexical units	0	4	2.55	0.868
	Elaborating term files	0	4	1.99	1.226
TR	Translation decision-making	0	4	2.41	0.829
	Adapting translation to the parameters of the translation brief	0	4	2.41	0.868
	Translation of 250 words per hour	0	4	2.13	1.094
R	Translation revision	0	4	2.12	0.934
	Setting out the guidelines for translator's revision	0	4	1.47	0.966
	Edition of texts with specific software	0	3	1.12	0.898
	Re-edition and desktop publishing with specific software	0	4	0.82	0.887
PM	Distributing tasks among team members	0	4	2.34	1.103
	Coordinating team members	0	4	2.28	1.040
	Setting up delivery dates for different tasks	0	4	2.39	1.087
	Supervising team members' work	0	4	2.21	1.065

other team members may have (2.93) and availability of the other members of the team to solve technical or translation problems (2.91).

Translation

Table 2 illustrates individuals' perception of their knowledge regarding the translation process after taking part in the PATT. Generally, students had a high level of satisfaction, as shown by the predominance of averages close to Level 3. The highest levels of satisfaction after working through PATT concerned knowledge of translation revision (revision stage), followed by making translation decisions (translation stage). Lower-ranked variables included re-edition and desktop publishing with specific software (2.125), edition of texts with specific software (2.312) and elaborating term files (2.312). These tasks presumably demanded more work or created the biggest problems for the students.

Discussion

Computer

Figures 1 and 2 are box plots that compare the answers to sets of related questions. In this case, answers to questions about computer proficiency before (Figure 1) and after (Figure 2) using the virtual classroom can be compared. Figure 1 indicates a wide gap between average responses for Word processors (2.69), Browsers (2.7) and Finding information on the Internet (2.55) and the other two (Designing web pages: 0.6; and Editing and desktop publishing: 0.5). This distance has also been shown by the median (in each figure values are represented by thick horizontal lines). The median is at Level 3 in the first three questions and at Level 1 in the final two questions.

Students who participated in this study were asked to make an assessment of their computer knowledge with the following values: Much worse (value 0), Worse (1), Equal (2), Better (3) or Much better (4). According to Figure 2, students' answers are similar in four out of five (Word processors, Browsers, Designing web pages, Editing and desktop publishing) because the median is, in this case, at Level 2. In other words, students did not generally think that their participation in our didactic model had boosted their computer skills. Nevertheless, the Level 3 median in the box plot for *Finding information on the Internet* indicates that students' assessment of their ability to find information on the Internet was more positive after the experiment than before. This computer knowledge is closely linked to documentation skills. Documentation is one stage in the translation process gathering more information by searching on the Internet. The slight increase shown in this knowledge suggests that students who have worked with PATT were more capable of carrying out the different tasks in the translation process, particularly those tasks involved in the documentation stage.

The consistency between both groups of questions is also remarkable: students had already mastered the first three skills but felt unable to master the last two. It was predictable that students should report improvement in the last two areas of knowledge, where the worst averages had been recorded in the pre-course surveys. In any case, PATT does not directly include contents

Table 2 Translation knowledge survey after the experiment

|		*Minimum*	*Maximum*	*Average*	*Standard deviation*
D	Search for and selection of terms relevant to ST topic	0	4	2.75	0.733
	Search for comparable documents on the web	0	4	2.92	0.772
	Selection for relevant documents of adequate quality	0	4	2.80	0.758
T	Elaborating ST conceptual system	0	4	2.48	0.826
	Search for and extraction of specialised lexical units	0	4	2.88	0.736
	Elaborating term files	0	4	2.23	0.852
TR	Translation decision-making	0	4	2.83	0.753
	Adapting a text to the parameters of the translation brief	0	4	2.85	0.662
	Translation of 250 words per hour	0	4	2.98	0.859
R	Translation revision	2	4	2.92	0.640
	Setting out the guidelines for translator's revision	1	4	2.60	0.618
	Edition of texts with specific software	0	4	2.26	0.877
	Re-edition and desktop publishing with specific software	0	4	2.12	0.944
PM	Distributing tasks among team members	0	4	2.80	0.959
	Coordinating team members	0	4	2.91	0.896
	Setting up delivery dates for the different tasks	0	4	2.94	0.979
	Supervising the work of team members	0	4	2.61	0.899
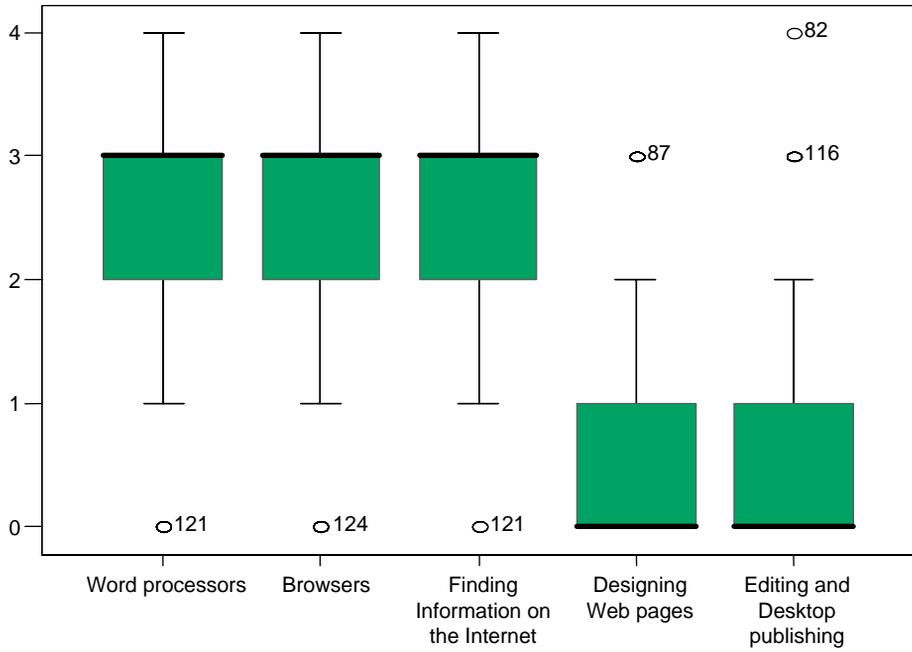
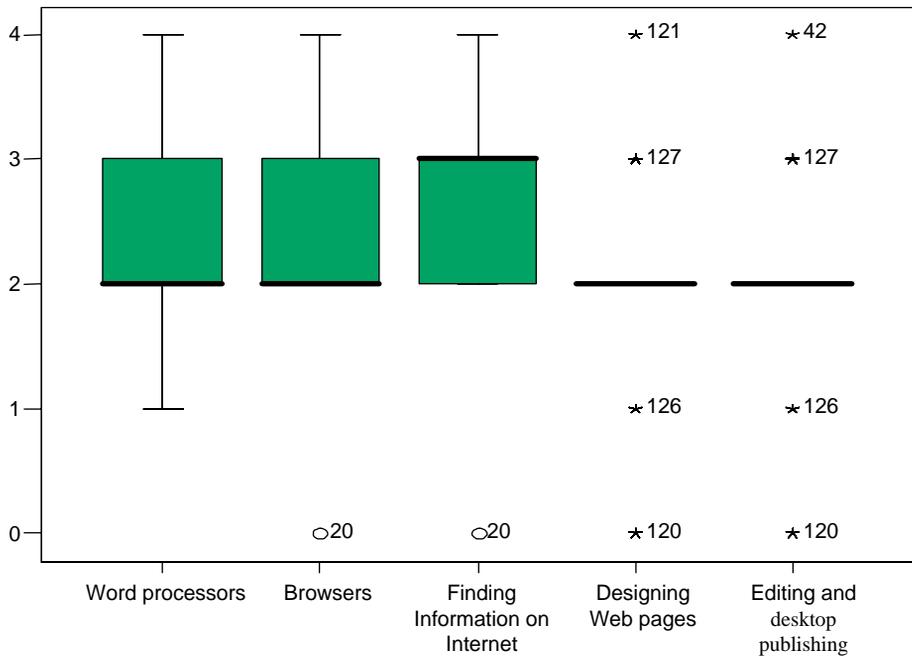**Figure 1** Previous computer knowledge

Figure 2 Subsequent computer knowledge

related to designing web pages, editing or desktop publishing. Therefore, improvement in the students' perception about their own general computer knowledge was to be expected. The results of this study demonstrate this slight upturn.

This moderate increase is better understood as follows: for the pre-course questionnaires a new category was created from the data of the five variables of computer knowledge. This variable added up the values of each of those five variables and calculated general computer knowledge. Four categories were created from the total: Minimum (up to 5 points in all), Poor (up to 10), Satisfied (up to 15) and Expert (up to 20) knowledge. In the pre-course questionnaires, the category Poor recorded the greatest number of responses (54.7%).

The same operation was performed in the post-course questionnaires. In this case, students' perceptions of their general performance were measured directly. The four new categories were: Minimum (up to 5 points in all), Poor (up to 10), Satisfied (up to 15) and High (up to 20) performance. In these questionnaires, the category *Satisfied* attracted the greatest number of responses (58.8%). These results suggest that, generally, students who had participated in our study felt capable of working with the computer. This outcome is consistent with the results obtained by Carswell (2000), Collins (2000) and Hong *et al.* (2003a).

Finally, the open-ended questions clearly showed the subjects' views of their computer proficiency. Students were asked if PATT had given them something different in comparison to traditional models. Some of their answers were: improved computer proficiency ('Knowledge of new computer tools for collaborative work and in a computerised environment'; 'use of computer tools different from those tools we are used to working with'); an increase of confidence in their own computer abilities ('more computer knowledge and a way of working totally differently, maybe more confidently') and, particularly and in accordance with the figures mentioned above, improved Internet research skills ('thanks to this method I have managed to improve my searching skills on the Internet').

Teleworking

The scarcity of subjects who had experienced teleworking before participating in the virtual classroom (an average of 0.35) has been highlighted earlier. Very few students really knew what teleworking was for (1.65). On the other hand, most of them were quite sure that teleworking would make the translation process easier (2.38). In the post-course questionnaires, mean values about familiarisation with teleworking and the facilitation of developing the translation briefs thanks to PATT showed that the practice of teleworking fulfilled students' expectations.

By variables, in the initial questionnaires most subjects reported that they knew Nothing/Little/Something about teleworking; 79% did not have any experience in teleworking; more than 50% thought that teleworking would facilitate the translation process, meaning they had a good impression of or feeling about teleworking, although they did not exactly know what it was for.

Post-course questionnaires indicated that students believed they had famil-
iarised themselves with teleworking thanks to PATT. In fact, 72.4% of the
students reported that teleworking facilitated Enough (45.5%) or Totally (26.8)
the fulfilment of translation briefs for this study.

Combined variables have also been calculated for teleworking. Three
variables from the initial questionnaires were consolidated into one and four
categories for different levels of knowledge and prior disposition to teleworking
were created. Categories were as follows: Minimum (up to 3 points in all), Poor
(up to 6), Satisfied (up to 9) and Many (up to 12). The result was that 87.1% of
students acknowledged a Minimum or Poor knowledge of teleworking.

If variables about teleworking are calculated jointly, the good impression
reported by students can be much better appreciated. In the second
questionnaires, a combined variable was created using the sum of values
from the two questions about teleworking. Four categories were created for
this variable. These categories measure different levels of student approval of
teleworking: Minimum (up to 2 points in all), Poor (up to 4), Enough (up to 6)
and Total (up to 8). Students generally believe they have familiarised
themselves Enough with teleworking. Moreover, they valued the relationship
between PATT and teleworking positively.

In the open-ended questions included in the post-course questionnaire,
students affirmed that they had familiarised themselves with teleworking ('I
have learnt exactly how teleworking works' or 'the possibility of distance
assistance'). These statements confirm the suitability of this experience, not
only for translation but also for promoting increased knowledge of telework-
ing among students. In fact, the figures demonstrate this increase in knowl-
edge, at least from the students' point of view.

Teamworking

High means in all categories related to teamworking, before and after the
experience with our didactic model, indicate that students have always
considered this aspect fundamental with regard to translation assignments.

As in previous aspects, combined variables were also created for teamwork-
ing. In the case of initial questionnaires, these combined variables measured
students' disposition towards teamworking. In the case of questionnaires
administered afterwards, these variables measured the students' level of
satisfaction with the work performed in teams. The total sum of values of the
questions corresponding to each questionnaire favoured the creation of four
equivalent extension categories for each combined variable: Very Low, Low,
High and Very High.

In the initial questionnaires, 16.7% of the subjects recorded a Low or Very
Low global disposition towards teamworking. In the subsequent question-
naires, no cases of Very Low satisfaction were recorded. Only 6.2% of the
subjects reported a Low global satisfaction towards teamworking.

Variables gathered about teamworking before and after PATT suggest that
the virtual classroom has served to improve students' overall disposition
towards teamworking and, as in the case of Hong *et al*. (2003a), it has signalled
that students are generally satisfied with this aspect of translation tasks.

Students frequently declare that the emphasis on teamworking is one of the main differences between PATT and traditional models ('I have learnt how to work in teams with unknown people'; 'It is a useful work tool because it makes teamworking easier'; and 'You really learn how to work in teams').

Translation

Table 1, which corresponds to the previous questionnaire, suggests that students felt less competent with revision than with the other steps in the translation process.

Once subjects have used the virtual classroom (Table 2), they have gained some degree of experience in almost every task (the mean is approximately 3). It is worth noting that after participating in the virtual classroom, students rated their understanding of revision at a similar level to their understanding of other tasks.

These figures suggest that subjects believe their competence with different tasks to have widened in general. This is not surprising, as students may have acquired knowledge from other classes in the interval between the administration of surveys. However, it is equally possible to conclude that through participating in the virtual environment, students have boosted their general confidence and now feel more capable of carrying out any stage of the translation process.

This last idea is confirmed by students' responses to the second round of questionnaires. Some students state that they are more familiar with the different tasks in the translation process ('a new way of working in which each member focuses on one task'; 'working in a specific field in the translation process'; or 'You focus on one task and you deepen into that task'). Moreover, this broader understanding of the translation process gives them a sense of being prepared for the professional world ('It simulates real working life' or 'It has been a very positive contribution because we worked in a real context, as if we were professional translators').

General satisfaction with the project

In addition to the students' satisfaction with multiple aspects of the project, which has been captured by the items in the surveys and the variables subsequently created during the statistical stage, it is interesting to note the degree of general satisfaction the students expressed directly and anonymously concerning the study in general. The question 'Would you recommend that other students participate in PATT?' was included in the second questionnaire. As many as 97.6% of the students recommended the use of a collaborative work platform for the virtual classroom and participation in PATT. Only 2.4% recommended not participating in the virtual classroom. This unanimity among the subjects is considerable. Undoubtedly, students have a generally positive attitude towards the new methodology. This conclusion consolidates the results of survey items regarding computer knowledge, teleworking, translation stages and teamworking, and it is consistent with the results of other studies about the same issue.

Students recommend participation in PATT and virtual classrooms for a variety of reasons (apart from those already noted with regard to computer knowledge, translation, tele- and teamworking). These include saving time ('You save a lot of time'; 'It makes work easier and you save time'), comfort ('It is a comfortable way of working'; 'It is very comfortable' or 'more comfortable'), the dynamic character of the experience ('It is a good example of teleworking and efficiency' or 'It is useful and invigorates work a lot'), usefulness ('It is a practical and useful tool' or 'the use of PATT is easy and practical') and educational value ('It is an experience that teaches you a lot'; 'it enriches your knowledge and experience' or 'You learn a lot').

Conclusions

The present paper describes a research study carried out at the University of Granada to analyse the satisfaction of students in the four-year Translation and Interpreting programme with an innovative teaching method. The aims of this project are to invigorate and technologically advance the process of translation and to expose students to real-life work environments and tasks. This satisfaction is measured in general and with regard to four specific categories: computer knowledge, teleworking, teamworking and translation tasks.

The research study created a collaborative work environment similar to that of the real professional translation process. Data from the second survey administered indicate the suitability of this method in order to teach students about teleworking from a practical standpoint.

Translation students are expected to learn how to work in teams; teamwork variables included in our study reveal that after the experience in PATT, students feel satisfied and have improved their opinion about this aspect of the process.

It is evident that the completion of translation briefs requires some computer knowledge. This was measured by surveys administered before and after the study. The results of both surveys show a slight increase in students' confidence with respect to computers. This increase may be due to their continuous practice with computer tools during the PATT project.

This study also focuses on students' perception of their own translation skills. Although this is not the main topic of the study, it is notable that students who have participated in PATT seem to report more confidence in their abilities to complete different tasks in the translation process.

In addition to demonstrating a rise in satisfaction in multiple aspects of the study, students responded quite positively to the final question, 'Would you recommend other students to participate in PATT?' This global result is consistent with the specific results stated in the other aspects evaluated as well as with results of similar studies carried out by several researchers.

The data obtained by this study suggest that using a collaborative work platform in translation teaching is beneficial, enabling students to gain confidence and feel satisfied with their work. In conclusion, further research may be necessary to confirm the effectiveness of the PATT method. It would be interesting to compare the results presented here to those obtained by other studies measuring increases in students' satisfaction and competence after

completing translation briefs in the traditional way, without the virtual communication made possible by a collaborative work platform.

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Note

1. The authors of this paper are the members of a research group (Aulaint) at the University of Granada, Spain. Our research centres on the development of an innovative e-learning model in the teaching of undergraduate students of Translation.

References

Alcina Caudet, A. (2002) Tutorizar trabajos terminológicos en un entorno virtual de trabajo colaborativo. *Sendebar* 13, 169–181.

Archer, J. (2002) Internationalisation, technology and translation. *Perspectives. Studies in Translatology* 10 (2), 87–117.

Askehave, I. (2000) The Internet for teaching translation. *Perspectives. Studies in Translatology* 8 (2), 135–143.

Aula.int. (2005) Translator training and modern market demands. *Perspectives. Studies in Translatology* 13 (2), 132–142.

Baroudi, J.J., Olson, M.H. and Ives, B. (1986) An empirical study of the impact of user involvement on system usage and information satisfaction. *Communications of the ACM* 29 (3), 232–238.

Butler, F., Whitehead, R. and Winkleman, M. (2001) Student, alumni and employer satisfaction to a collaborative learning approach. *31st ASEE/IEEE Frontiers in Education Conference*. V.1 T3B-9-T3B13.

Carswell, L. (2000) Distance education via the Internet: The student experience. *British Journal of Educational Technology* 31 (1), 29–46.

Collins, M. (2000) Comparing Web, Correspondence and Lecture versions of a second-year non-major Biology course. *British Journal of Educational Technology* 31 (1), 21–27.

Coppola, J.F. and Thomas, B.A. (1999) Seamless integration of effective teacher strategies with unique electronic classroom technology to booster student satisfaction. *29th ASEE/IEEE Frontiers in Education Conference*. V.2 12b2/1

DeLone, W. and McLean, E. (1999) Information systems success: The quest for the dependent variable. *Information Systems Research* 1 (3), 60–93.

Fredericksen, E., Pickett, A., Pelz, W., Swan, K. and Shea, P. (2000) Student satisfaction and perceived learning with on-line courses: Principles and examples from the SUNY Learning Network. *JALN: Journal of Asynchronous Learning Networks* 4 (2), 7–41.

Hanna, D.E., Glowacki-Dudka, M. and Conceicao-Runlee, S. (2000) *147 Practical Tips for Teaching Online Groups: Essentials of Web-based Education*, Madison, WI: Atwood Publishing.

Harvey, L. (1995) Keeping the customer satisfied: The student satisfaction approach. Institute of Electrical Engineers. Digest no. 1995/084, *Proceedings of the Colloquium on 'Quality in Higher Education'*.

Hong, K. (2002) Relationships between students' and instructional variables with satisfaction and learning from a Web-based course. *Internet and Higher Education* 5, 267–281.

Hong, K., Lai, K. and Holton, D. (2003a) Students' satisfaction and perceived learning with a web-based course. *Educational Technology & Society* 6 (1), 116–124.

Hong, K.-S., Ridzuan, A.A. and Kuek, M.-K. (2003b) Students' attitudes toward the use of the Internet for learning: A study at a university in Malaysia. *Educational Technology & Society* 6 (2), 45–49.

Kollias, A. and Kikis, K. (2004) Students' level of satisfaction with an on-line seminar based on a social-constructivist pedagogic design. *Proceedings of the 5th International Conference on Information Technology Based Higher Education and Training* (pp. 578–581). Istanbul, Turkey: ITHET.

Lederer, A.L., Maupin, D.J., Sena, M.P. and Zhuang, Y. (2000) The technology acceptance model and the World Wide Web. *Decision Support Systems* 29, 269–282.

Masiello, I., Ramberg, R. and Lonka, K. (2005) Learning in a web-based system in medical education. *Medical Teacher* 27 (6), 511–513.

Mayoral, R. (2000) Notes on translator training (replies to a questionnaire). *Across Languages and Cultures* 1 (2), 212–219.

Motiwalla, L. and Tello, S. (2000) Distance learning on the Internet: An exploratory study. *The Internet and Higher Education* 2 (4), 253–264.

Oliver, R. and Omari, A. (2001) Student responses to collaborating and learning in a Web-based environment. *Journal of Computer-Assisted Learning* 17 (1), 34–47.

Olvera-Lobo, M.D., Robinson, B., Castro Prieto, M.R., Muñoz Martín, R., Muñoz Raya, E., Quero, E., Murillo, M., Senso, J.A., Vargas, B. and Díez Lerma, J.L. (2007) A professional approach to translator training (PATT). *Meta Journal des traducteurs* 52 (3), 517–528.

Olvera-Lobo, M.D., Castro-Prieto, R.M., Quero-Gervilla, E., Muñoz-Martín, R., Muñoz-Raya, E., Murillo-Melero, M., Robinson, B. and Senso-Ruiz, J.A. (2008) Encouraging collaborative work training in higher education. In G.D. Putnik and M.M. Cunha (eds) *Encyclopedia of Networked and Virtual Organizations*, Hershey: Idea Group.

Senso, J.A., Olvera-Lobo, M.D., Vargas-Quesada, B.M., Castro-Prieto, M.R., Muñoz-Raya, E., Muñoz-Martín, R., Murillo-Melero, M. and Robinson, B. (2006) Evaluación del uso de una herramienta de trabajo colaborativo en la docencia de la Traducción: análisis de ficheros log. In *Conferência IADIS Ibero-Americana WWW/Internet 2006* (pp. 57–66). ISBN 972-8924-20-8. [CD_ROM].

Swan, K., Shea, P., Fredericksen, E., Pickett, A., Pelz, W. and Maher, G. (2000) Building knowledge building communities: consistency, contact and communication in the virtual classroom. *Journal of Educational Computing Research* 23 (4), 389–413.

Venkatesh, V. and Davis, F.D.A. (2000) A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science* 46 (2), 186–204.

Yeo, J.S.J., Aurum, A., Handzic, M. and Parkin, P. (2002) When technology is mandatory: Factors influencing users' satisfaction. *Proceedings of the International Conference on Computers in Education (ICCE'02)*. IEE Computer Society 2, 1023–1024.