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Guided Inquiry and Project-Based Learning in the field of specialized translation: a description of two learning experiences

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Abstract

In recent years, university offices for learning and teaching have encouraged their teaching staff to innovate and become teachers 3.0 as well as to adapt assessment methods to the European Higher Education Area. The need to adjust the learning-teaching process to the EHEA has indeed prevented us from further postponing a discussion that has been acknowledged as necessary for years: why are our students failing to learn as they should or as we would like them to? As teachers, we usually put the blame on our students and neglect the fact that we might be using the wrong approach.
In this article, we present the design of two learning experiences implemented in two specialized translation courses taught in the fourth year of the Degree in Translation and Interpreting at the University of Vigo, in Spain, and we discuss the implementation of constructivism-based tasks and techniques in the classroom. Particularly, we focus on Guided Inquiry (GI) in the Business Translation course and on Project-Based Learning (PBL) and peer review in the Scientific and Technical Translation course. The work closes with a discussion of the main results, in terms of both students' performances and their reactions to the new learning experiences.

Keywords: Constructivism, Guided Inquiry, Project-Based Learning, Translation Competence, Translator Education

1. Introduction

Undoubtedly, the arrival of the new Bologna-based degrees has confronted higher education teachers with the need to review the way we plan and design the education of our students to ensure they acquire the competences established in the syllabus. Each activity has to be understood as a learning experience in which the student plays the leading role while teachers act as facilitators. This change in roles, however, does not involve a reduction in the teachers' responsibility. On the contrary, our role becomes more challenging, as

designing a course requires encouraging students to become involved in active learning, ensuring co-operation among learners, choosing and preparing materials that align with learning needs, providing feedback, and assessing students' performances. Indeed, the need to assess the level of acquisition of competences both quantitatively and qualitatively, not only for grading purposes, but also to ensure that students are on the right path to acquiring the expected skills, makes it necessary to design classroom and home activities in a careful manner, so that they are consistent with the teaching and learning method used.

As suggested by a number of authors both in the field of general pedagogy (Biggs, 2011; Kulhthau, 1993; Kulhthau, Maniotes & Caspari, 2007), and in the field of translation pedagogy (Galán-Mañas 2011; Kiraly, 2000, 2005; Stewart, Orbán & Kornelius, 2010), constructivism-based learning theories, and particularly cooperative and collaborative learning techniques may be a good alternative to traditional methods to enable translation students to learn according to their individual abilities and learning styles. Among these techniques, Guided Inquiry (GI) activities are particularly useful for developing information literacy among future translators, while Project-Based Learning (PBL) provides an excellent framework for simulation of the working conditions in professional settings. In addition, constructivism-based learning is claimed to increase motivation and encourage self-awareness, autonomy, and responsibility among students. Finally, for teachers, constructive alignment provides a framework for an effective design of courses focused on competence rather than on content.

2. A few words on Translation Competence (TC)

Before designing a course on specialized translation, it is of paramount importance to be clear about what our students should know, or be able to do, by the end of the course, i.e. to clearly define the course learning goals. To do so, it would be helpful and time-saving to have a clear picture of what is understood as *translation competence*. Indeed, as Jiménez-Crespo (2013) argues, TC 'plays a key

role in translation education" hence "an understanding of translation competence models can not only be beneficial to comprehensive organizational efforts, but also serve as a frame of reference for all parties involved: administration, coordinators, faculty, students and future employees" (p. 41; emphasis ours).

However, this is not an easy task. A number of authors in the last three decades or even earlier have tried to describe how TC is acquired, but only a few have provided an explicit definition of the concept. Diversity of views is found even in the appropriate label used to refer to such 'competence'. While Lowe (1987, p. 57) talks about *translation ability*, a term that is also used by Pym (1991, 1992), Hatim & Mason refer to *translator ability* (1997, p. 204), Wilss (1989, p. 129) suggests *translation performance*, Nord (1991, p. 161) prefers *transfer competence*, and Toury (1980, 1995, pp. 250-51), Hansen (1997, p. 205) and Chesterman (1997, p. 147) choose *translational competence*.

The definitions of the concept are equally divergent. Whereas Wilss (1982, p. 58) refers to an 'interlingual supercompetence […] that consists of the ability to integrate two monolingual competences on a higher level', Bell (1991, p. 43) defines translation competence as 'the knowledge and skills a translator must possess in order to carry out a translation'. Pym (1992), in turn, defines translational competence as 'the combination of two skills: (i) the ability to generate a target-text series of more than one viable term for a source text and (ii) the ability to select only one target text from this series […] and to propose this target text as a replacement of source text for a specified purpose and reader' (p. 281). The author makes a clear distinction between linguistic competence and translational competence and further claims that

> there can be no doubt that translators need to know a good deal about grammar, rhetoric, terminology, world knowledge, common sense and strategies for getting paid correctly, but the specifically translational part of their practice is strictly neither linguistic, common nor commercial (Pym, 1992, p. 281).

In general, most authors focus on the definition of competence in pedagogical terms, i.e. the abilities, skills and attitudes needed to carry out an activity successfully. This results in the construction of an abstract concept that seems to be of little help unless further described. Several scholars (Bell, 1991, pp. 41-43;

Göpferich, 2009; Hansen, 1997, pp. 205-207; Hatim & Mason, 1997, pp. 205-206; Kiraly, 1995, pp. 101-105; Lowe, 1987, p. 53-55; Neubert, 2000, pp. 3-18; Presas, 2000, pp. 19-31, among others) have devoted considerable effort to dissecting competence into small components, studying how each of them works and then putting them together again. Although from a holistic point of view, this dissection is always artificial and necessarily inaccurate, it has proved to be useful in that it helps both trainers and trainees to better understand what they have to teach/learn in the process of educating/becoming translators.

Currently, one of the most widely accepted models of translation competence is that of the PACTE group, which defines translation competence as 'the underlying system of knowledge and skills needed to be able to translate' and depicts it as a combination of five sub-competences: strategic sub-competence, bilingual sub-competence, extra-linguistic sub-competence, instrumental sub-competence, and knowledge about translation. The graphic representation of the model presents the strategic sub-competence at the centre, as an element that controls all the other sub-competences involved. (PACTE 2000, 2011, p. 319). The model is completed with a series of psycho-physiological components that are not translation-specific but form "an integral part of all expert knowledge" (PACTE, 2003, p. 91).

A similar model is that proposed by Göpferich (2009, p. 21), where the author suggests a series of changes in the PACTE model, such as the division of the knowledge about translation competence into two separate categories, namely *translation routine activation competence* (knowledge about how translation functions) and *translator's self competence* (knowledge of the work market). In addition, Göpferich includes a variation in the model that we find of paramount relevance not only in the description of translation competence, but also in the analysis of translation competence acquisition: *motivation* is removed from the list of *psycho-physiological components* and placed at the level of *strategic competence* since, as she argues, the way translators apply their subcompetences depends both on their strategic competence and on 'their situation-specific motivation, which may be both intrinsic (enjoying translating), or extrinsic (payment, fear of compensatory damages, etc.)' (Göpferich, 2009, p. 23).

Finally, a third model is that included in the European Master in Translation (EMT) framework, which comprises six areas of competence. Although all of them are claimed to be interdependent, again *translation service provision* (which includes transfer competence) is placed at the centre of the model and surrounded by all the other five competences completing the model, i.e. *language*, *thematic*, *intercultural*, *technological*, and *information mining* (EMT Expert Group, 2009).

As Chodkiewicz (2012, pp. 40-41) claims, although most skills, aptitudes, knowledge and behaviours have already been mentioned in previous models, the EMT includes some new components that are rather relevant for translation competence and hence for translator education. The author mentions 'working under pressure', 'complying with deadlines and instructions' and 'proofreading and revising documents', all of which are included in the *translation service provision* category, but also other relevant issues such as 'recognizing the possibilities and limitations of machine translation' in the *technological* category, or drafting, rephrasing, restructuring, condensing, post-editing and summarizing documents in the *textual dimension* of the intercultural competence. Other components that are equally relevant, in our opinion, even if not all of them new, have to do with the *information mining* competence, such as 'knowing how to identify documentation requirements', 'knowing how to evaluate the reliability of documentary sources' and 'approaching experts'.

Comprehensive models depicting translation competence such as the ones briefly described above are not exempt from criticism by some authors, such as Malmkjaer (2009, p. 125), who considers that many of the sub-competences and components they comprise should be in fact 'prerequisites to translation or desirable states which may enhance translation (but) which, however, do not make a translator'. In part, we share Malmkjaer's view on the prerequisites to translation; however, we consider that all the activities surrounding the very action of transferring a source text (ST) into a target text (TT) – namely, prior or simultaneous acquisition of subject competence, use of appropriate tools, selection of the correct terminology, identification of the cultural background of the text and its relevance for translation – are critical parts of the TC. Hence they

cannot be learned in isolation, as discussed in section 3, because their learning requires an understanding of what translation is. Our experience as translation teachers and professional translators has shown us that there is no point in training students in the use of translation memory managers before they know what translation really is. It has also shown us that a professional translator does not perform terminology research in the same way as a student, and that a translator does not use information in the same way as other professionals (e.g. lawyers, journalists…).

Therefore, although we acknowledge that some of the above competences, such as linguistic competence, should be acquired before transfer competence, we argue, in line with the PACTE model of translation acquisition, that other competences, such as information mining competence and technological competence should be reshaped (reacquired) by students while learning how to translate (integration competence, PACTE, 2000).

3. Methodological Approach

Peschl (2011, p. 17) claims that any particular skill or competence is supported by underlying cognitive operations that are responsible for knowledge processes. These operations or capacities are classified by the author in five different levels, namely (i) the capacity to observe, (ii) the capacity to make abstractions and induction, (iii) the capacity for profound understanding, (iv) the capacity to create new knowledge and solutions, and (v) the ability to reflect. Only by strengthening these intellectual capacities can the level of skills and competences be increased.

The distinction between intellectual capacities at the abstract level and the skills and competences to be acquired could be better understood if associated with the traditional distinction between training and education (Widdowson, 1984, pp. 201-212) as it relates to translation pedagogy. As Bernardini (2004, p. 18) has suggested, while training tries 'to prepare learners to solve problems that can be identified in advance through the application of pre-set procedures', education aims at 'favouring the growth of the individual, developing her cognitive capacities, attitudes and predispositions that will put her in a position to cope with the most varying situations'. Once "educated", therefore, it will be easier for

students to get trained, for instance, in the use of the particular tools required to carry out a specific job.

The learning experiences described in this article are included in specialized translation courses taught in the last (4th) year of the Degree in Translation Studies at the University of Vigo, namely in Scientific-Technical Translation (7th semester) and in Business-Financial Translation (8th semester). The courses are taught by different lecturers who work on a coordinated basis, and the students enrolled in the courses are also different, as they belong to different A language groups. By the time they are enrolled in the courses, students have already completed several general and specialized translation courses, so they should have acquired good strategic sub-competence. In addition, they have completed terminology, documentation and IT courses that should have enhanced their instrumental sub-competence. Most of them have also spent one or more years abroad under an international exchange program, so their linguistic competence should be equally guaranteed. At the level of cognitive operations, at this point in their education process, translation students should be able to observe and to make abstractions and inductions. They should also be able to fully understand subject encyclopaedic information and to create knowledge and solutions to the problems they encounter. Ideally, they should also be able to reflect on what they do and on how they do it. In a word, they should be able to merge all the sub-competences and skills acquired throughout six/seven semesters at university, into one holistic competence, i.e. translation competence. According to our teaching experience, however, despite their being acquainted with terminology and documentation techniques and despite their ability to translate non-specialized texts, translation students have considerable difficulties in translating legal, business and technical texts, which might be in part the result of their total lack of subject-competence in these fields, but also of their inability to merge their 'isolated' research, technical and cultural sub-competences into a comprehensive translation competence. In our opinion, this is a reflection of the intellectual deficiencies in the field of education pointed out by Peschl (2011, p. 18), such as 'the lack of capacities to *generate qualitatively new* and profound knowledge (…), the lack of creative solutions to complex problems (…), or the lack of capacities in discovering, constructing as well as

understanding complex and global relationships between a large number of seemingly unrelated events or phenomena'.

It would be easy for teachers to put all the blame on students, by claiming that they have not been able to acknowledge and accept that they are responsible for their own learning and that, unless they become aware of the critical role they play in the process, any effort to train them as translators will be in vain. However, it might be more productive to acknowledge that teachers, both as educators and as facilitators of students' self-learning, play an equally critical role in the process by selecting an appropriate approach and implementing it consistently. Indeed, no theory on active, independent learning, advocates students working alone but rather that they should work with teachers to structure their learning environment and experiences (Meyer, Haywood, Sachdev & Faraday, 2008, p. 2). Furthermore, previous studies on the issue have shown that students do not become effective independent learners by themselves and that teachers should promote effective ways to learn (Artelt, Julius-McElvany & Peschar, 2003; Van Grinsven & Tillema, 2006).

In our search for an appropriate approach, we have tried to test the benefits and disadvantages of constructivism-based theories, which as Kiraly (2000, 2005, 2012) has argued, seem to constitute a good framework for the design of alternative teaching and learning methods for translation students. In the field of education, constructivism is used as an umbrella term that includes a number of learning theories sharing a set of core guiding principles. Hein (1991, pp. 1-12) summarizes the implications of these principles for the role of the educator:

- Learning is an active process in which the learner constructs meaning out of sensory input.
- Learning is a social activity: learning is associated with our connection with other human beings (teachers, peers, family, casual acquaintances).
- Learning always takes place in context: we cannot learn isolated facts and theories.
- Learning should also be based on prior knowledge (*scaffolding*), as it is not possible to assimilate new knowledge without a previous structure of knowledge to build on.
- Learning is not instantaneous and significant learning requires repeated action.
- Motivation is the key in learning.

As already mentioned above, although all the above principles are relevant in

translator education, we find it particularly relevant to emphasize motivation both as a key element in translation competence and in translation competence acquisition. As Duffy (2010, p. 353) points out, 'the students' perceived need for new knowledge is critical in acquiring it'. It is important that the teacher should be able to motivate students, to help them understand the need to acquire sub-competences that might be apparently unconnected with what they think translation is. It is equally important that motivation should be encouraged through challenging, lively activities, but also through recognition of students' effort and progress.

In addition, as Kolb (1984) suggests, it is highly relevant that students should be asked to reflect on their learning process, i.e. on the way they carry out class and home activities and on the result of such activities, on their usefulness and on their applicability to new activities. As the author suggests, an experience is not sufficient to learn. It is necessary to reflect on it, to make generalizations and to formulate concepts that can be applied to new situations. This learning must then be tested out in new situations, thus completing the *learning cycle*. The student must make the link between the theory and action by planning, acting out, reflecting and relating it back to the theory. By doing this, the students become aware of the relevance of what they have learned and feel encouraged to continue learning.

4. Learning Experiences for Translator Education

All the six principles outlined in the above section, together with the distinction between education and training and the competence models of PACTE and the EMT expert group, have been taken into account when adapting our Business Translation and Scientific-Technical Translation courses to the guidelines of EHEA. Thus, in planning, designing and implementing all the activities to be carried out during the course, we have tried to provide students with the necessary tools and strategies to solve problems on their own, instead of giving them solutions to particular translation problems they might never encounter again. Similarly, we have placed more attention on the process than on the final result, as it is the process that students will have to replicate again and again in

their professional lives, and not the product (Mossop, 1999). In addition, in line with Torrano & González (2004), the courses were planned to move from more directive instruction in the initial stages to increased independence at the end of the term, but with the idea of removing supportive guidance gradually according to students' responses rather than following a predetermined teaching path (Myhill & Warren, 2005).

The two learning experiences described below are only part of the fully adapted courses and are better understood within the context of the whole learning environment created for the courses. However, we think these experiences reflect our effort to take all the above principles in mind and to align them with the need to ensure translation competence acquisition by translation students.

4.1. Guided Inquiry in the Business Translation classroom

This learning experience was implemented in the 8th semester course Business Translation (English-Spanish) and was mainly focused on furthering the *information mining* competence of students at a general level, but also their *thematic and intercultural* competences in a field of knowledge, that of financial accounting, with which translation students are generally unacquainted. To this end, the decision was made to use an inquiry-based learning approach, more particularly a guided inquiry activity. Although the ultimate goal in the course is that students should be capable of carrying out inquiries on their own as part of the translation process, at this point in their training they still have not developed the necessary knowledge to do it. Therefore, they are guided with some clues that help them focus their information mining process.

4.1.1 Benefits of Guided Inquiry

Kuhlthau (2010, p. 20) defines *Guided Inquiry* as an inquiry that 'is guided by an instructional team to enable students to get a depth of understanding and a personal perspective through a wide range of sources of information'. Among the benefits of the activity, Kuhlthau, Maniotes & Caspari (2007, p. 70) highlight that it fosters *information literacy,* i.e. the ability to locate, assess and use information, which is clearly connected to the *information mining* competence. To learn how to seek and find information, students should first learn how the

available information sources are organized in a field of knowledge they are not familiar with. To judge the usefulness of the compiled information for the particular tasks underway they must know and apply five key criteria for evaluating sources, namely *expertise* or knowledge of the author, *accuracy* or factual correctness of a source, *currency* or date of publication, *perspective* or point of view of the author and *quality* or merit of the source. Finally, to use information, they need to understand it, to organize ideas and construe meaning from factual information.

Equal importance is attached by the authors to *Literacy competence*, understood as the ability to understand what one reads and to write in a consistent and relevant way. Guided inquiry requires students to read with a purpose in mind: to locate the requested information. It equally requires them to write and present what they have read and to share it with their peers, which demands more involvement to ensure team success.

4.1.2 Specific learning goals

As already mentioned, although the activity focus was on improving information mining competence, students were equally expected to improve their subject competence and their intercultural competence, particularly that concerned with the textual dimension. In addition, they were expected to enhance their problem solving skills, as the final tasks of the experience (tasks 3 & 4) required a considerable amount of decision-making.

In the assignment brief, the following specific goals were identified:

> *After completion of the learning experience, you should be able to:*
>
> 1. *Identify major concepts and principles in financial accounting.*
> 2. *Identify the main documents comprising financial statements in Spain and in the United States.*
> 3. *Demonstrate the ability to read, evaluate and interpret general financial information.*
> 4. *Identify and systematize similarities and differences in the accounting systems of different countries.*
> 5. *Reflect on how these differences can be dealt with in translation.*
> 6. *Extrapolate this reflection to other translation scenarios.*

4.1.3 Methodology

The 35 students enrolled in the course were arranged in groups of 4 to 5 people and asked to perform a series of tasks that were gradually revealed by the teacher throughout a period of two months. All the tasks were performed by students outside the classroom, submitted to the teacher for revision and then commented on by groups during office hours. Given the nature and difficulties of the tasks, students were expected to devote most of their autonomous work time during those two months, i.e. around 40 hours, to the activity, while classroom hours were used to perform related tasks, such as time-constrained translations, peer-review, or guided information mining and processing, among others.

First, they were asked to answer a list of questions associated with Financial Accounting. To answer such questions, students had to seek both encyclopaedic and terminological information regarding Financial Statements. Students were encouraged to use alternative sources to the Internet, including printed reference material (manuals) and real corporate documentation (corporate statements). It was also suggested that they should recruit third party cooperation, both from professional accountants and from students of other faculties and schools.

When students had successfully fulfilled this first task, i.e. when they had answered all the questions, they were informed about their second task. If the students failed to find the correct answers, however, they had to repeat the task. In this case, they were recommended to use different sources of information.

The inquiry's second task consisted in finding examples of corporate annual accounts of Spanish companies. To complete this task, students were invited to visit corporate websites of several Spanish companies and groups. In this way, students became familiar with the structure of corporate websites and were made aware of the variety of documents that companies make available to their investors and to the general public through their websites. Once they were ready with this task, they were asked to do the same with American corporations. Finally, they were asked to select two financial reports, one of a Spanish company and one of an American corporation. The main requirement was that both

companies operated in the same industry. As this was a relatively simple task, it was not common that groups were required to repeat it.

Once students had completed tasks one and two, i.e. they were familiar with general concepts of financial accounting, and they had selected the sample financial reports, they came to task 3: namely to make a comparison of the two reports. This was probably the most difficult task in the whole assignment, as it required students to use the information they had compiled during the first task and apply it to the reports selected in the second task. As in task one, the comparison involved making decisions regarding the relevance of informational texts; however, it additionally required the use of a new skill: creating new knowledge from already available information. In the comparison, students were encouraged to highlight differences and similarities between the two collections of documents that were particularly relevant for translation. Reference documents such as the Spanish *Plan General Contable*, the International Financial Reporting Standards (IFRS), the International Accounting Standards (IAS), the European Union Accounting Directives and the Accounting Standards and Statements of the US Financial Accounting Standards Board (FASB) were suggested to the groups that had not used them in task one.

To complete task three, students had to submit a comparison report, which was reviewed by the teacher and then returned to the students with comments. As in task one, groups that had submitted a successful comparison, i.e. those who had been able to identify differences and similarities between the collections of documents, received instructions for task four, while those who had failed to produce an adequate comparison were asked to repeat the task.

Task four consisted in the translation into Spanish of the Balance Sheet and the first note of the Notes to the Financial Statements of the American corporation selected by the group in task 2. After the translation had been submitted by students, revised by the teacher using the ATA Certification Program Rubric for Grading and returned to students with the appropriate feedback, students could proceed to task 5, consisting in the completion of two questionnaires. The first of them had to do with information mining and processing: students had to report

about the information sources that had been most useful for them and decide whether this matched their a priori expectations. The purpose of this questionnaire was to have students reflect on their documentation strategies, commonly based on searching isolated terms in online glossaries or other sources they find by typing the term in an Internet browser. Responses to the questionnaire showed that students had realized that this strategy was useless for task one, where they had to answer questions on a particular subject they were not acquainted with, and even more useless for task three, where they had to construe new knowledge that was not available for them either in the internet or in printed manuals at the library. Therefore, they had to make the effort to find information in alternative sources and to process it for the construction of new knowledge. What was more important, however, was that by the time they successfully completed task three, they had already realized that they did not have to go back to their old strategy to do the translation in task four, as the information processed in tasks one and three had already provided them with a considerable amount of terminology, with reliable parallel texts and with the necessary self-confidence to make decisions as to how to translate particularly problematic terms.

The second questionnaire dealt with the learning process, and students were asked to reflect about the competences they felt they had improved during the learning experience, but also about how they valued the experience in terms of team work and self-learning. Items to be valued included teamwork, knowledge construction, decision-making and usefulness for future work.

4.2 Cooperative Project Based Learning (PBL) in the Technical Translation classroom

4.2.1 Benefits of PBL

Jones, Rasmussen & Moffitt (1997) and Thomas, Mergendoller & Michaelson (1999), among others, describe PBL-projects as 'complex tasks based on challenging questions or problems that involve students in design, problem solving, decision making or investigative activities, give students the opportunity to work relatively autonomously and culminate in realistic products or

presentations' (Thomas, 2000, p.1). Other authors add further features such as authentic assessment, teacher facilitation but not direction, and explicit educational goals (Moursund, 1999), or cooperative learning and reflection (Diehl, Grove, López & Cabral, 1999).

The above definition summarizes, in our opinion, the main benefits of project-based learning for translator education in comparison to other learning approaches. In changing the role of the teacher from director to facilitator, PBL becomes learner-centred and facilitates significant learning and the acquisition, development and assessment of cross-competences. In addition, the expression of explicit learning goals contributes to increase students' motivation and the cooperative learning condition enhances students' social skills and team-work capabilities. The applicability of PBL to translator education has been addressed by a number authors in recent years (Fernández & Sempere, 2010; Galán-Mañas, 2011; Galán-Mañas & Hurtado, 2010; Inoue, 2005; Kerkkä, 2009; Kiraly, 2000, 2005; Mitchell-Schuitevoerder 2011; Stewart, Orbán & Cornellius, 2010). Wilss (1996, p. 204) suggested that 'a student translator or rather a group of student translators may learn how to translate […] through active participation in a translation project that is guided by a team of pedagogically interested professional translators and an experienced translation teacher'. Fernández & Sempere (2010, p. 141) define project-based learning as a type of learning in which 'a translation project is provided as a learning experience, and students have to face several problems that will develop different types of competences (translation-related problems, technical problems, management problems and team-work problems)'.

4.2.2 Learning goals

This learning experience covered the whole of the Technical Translation course devoted to translation from Galician, the students' A language, into English, the students' B language, and its general learning goal was to strengthen all the sub-competences comprising translation competence in a holistic manner, i.e. to merge them all in a comprehensive learning experience that prepared students for their access to the professional market. Regarding the specific learning goals of the activity, their definition in the assignment brief read as follows:

> *Through this project, students will learn to translate prototypical scientific papers from Galician into English respecting publishing guidelines of scientific journals, and to conceive the work of a translator as a multi-task process. In addition, students will learn to identify the several phases of the project, to distribute the tasks in an efficient manner, and to coordinate autonomous work so the quality of the final product is ensured.*

4.2.3 Methodology

The first decision we had to make when planning the learning experience was the selection of the project. Although we assessed the possibility of getting students involved in a real project, we discarded the idea for several reasons. As argued by García (2013, p. 494), the development by students of real translation projects involves a number of problems that have not been fully addressed to date in PBL literature in the field of translator education. Although the most relevant problem is connected with the quality of the final translation, other issues such as time restrictions, unfair competition and the like should be taken into account when dealing with real translation projects. On the other hand, literature on PBL stresses the 'realistic' nature of projects, where realistic means 'very much like real life' or 'seeming to be real', but not real.

> Projects embody characteristics that give them a feeling of authenticity to students. These characteristics can include the topic, the tasks, the roles that students play, the context within which the work of the project is carried out, the collaborators who work with students on the project, the products that are produced, the audience for the project's products, or the criteria by which the products or performances are judged (Thomas, 2000, p. 1).

Finally, the decision was made to have students work on a realistic translation project in which the process would be subject to gradual formative assessment by the teacher, while the final product would be assessed both by the teacher and by an external evaluator. We were aware, though, of the fact that our students were not professional translators and realistic as it should be, the project needed to be carefully planned, guided, managed and assessed by the teacher, to help students learn academic content, develop social skills, and create a high-quality final product. In designing the project and the activities to be carried out by the students, therefore, an effort was made to clearly define the scope of the project and the context in which it was inserted.

The nine students enrolled in the course were organized in groups of three people and received instructions to translate from Galician into English a

scientific paper on cellular automata for its publication in the international journal *Computers & Geosciences*. The project was scheduled for a period of five weeks and the estimated global time of work was 75 hours, i.e. 25 hours per student. During the period, the students had to accomplish several activities that were suggested, guided and assessed by the teacher. As opposed to the guided inquiry experience described above, in this case students were informed in advance of all the activities included in the experience, as a detailed schedule was made available to them at the beginning of the course. A detailed description of the activities in chronological order follows:

- Individual re-reading of the general bibliography of the course dealing with scientific papers. This activity was aimed at improving the intercultural competence of students with regard to its textual dimension, i.e. being able to identify the macrostructure of scientific papers both in Galician and in English and to reproduce it in a target text (1 hour).
- Individual reading of the materials specially prepared for the project followed by a group discussion thereof. Students were asked to individually identify the particular features of the selected texts and to discuss their findings with their peers. The group had to submit a final report on the activity. This activity was also aimed at improving the textual dimension of the intercultural competence (3 hours).
- Puzzles, used to distribute the work on the conceptual part of the activity among the group members. Students had to research and understand the concepts referred to in the paper, explain them to the other members of the group and make sure that all had understood them. This activity was aimed at improving the students' subject competence in the field of cellular automata (2 hours).
- Individual translation of the section "materials and methods" followed by peer-assessment (in pairs). This activity was aimed at improving transfer and revision competence. Students had to be able to identify, explain, and correct errors in their peer's translation. After peer-review was finished, students were required to submit a corrected version of their own translation, based on their peer's comments and on their own new reading of the text (4 hours).
- Group translation of the paper's 'conclusion' section, assessed by the teacher. The whole group had to submit a common (agreed) version of a short section of the paper, which was reviewed by the teacher to identify different types of problems (understanding of the ST, register, terminology, publishing guidelines…) (3 hours).
- Delivery of a first group draft of the whole paper, in which students should

take account of the corrections and suggestions made by the teacher in the previous activity. This first draft was subject to peer review between groups, after which the group had time to prepare a second draft (5 hours).

- When the second draft was ready, groups were asked to prepare an Integrated Problem and Decision Report, IPDR (Gile, 2004), i.e. a report including all the translation problems. For each problem, students had to provide evidence of the steps made to solve it, with full reference of sources consulted. The IPDRs were used in a general class discussion, where each group reported the problems encountered in the translation and the way in which they had been solved. Other groups suggested their own solutions and the teacher provided solutions to unsolved issues only when students had shown that they had done their best to find the solutions themselves (3 hours).
- Finally, each group submitted the final version of their translation, which was assessed both by the teacher and by an external expert on cellular automata using the ATA Certification Program Rubric for Grading (3 hours).
- Additionally, students had to take an individual test consisting in discussing a section of the group's final translation, explaining and justifying the decisions made by the group and suggesting personal solutions that improved the final product (1 hour).

Each of the activities included in the project was aimed at acquiring the competences required to produce a translation that would meet professional standards. Intensive group work and peer-reviews were aimed at helping students successfully identify and solve complex translation problems, whereas the individual test was aimed at assessing individual progress.

5. Results and Discussion

After full implementation of the above learning experiences, a series of conclusions may be drawn as regards the disadvantages and benefits of constructivism-based learning in the specialized translation classroom, and particularly of guided inquiry and PBL.

As regards the disadvantages, it is necessary to highlight the fact that both the design and implementation of the learning experiences proved to be highly time-consuming, particularly if compared to traditional translation teaching approaches. Time consumption affected not only the teacher but also and

particularly the students, as their active involvement in learning required much more work from them than their passive presence in the classroom. Even if students perceived that they had learned more than with a traditional method, they were reluctant to accept that it had been worth the time investment in overall terms.

The lack of experience in teamwork activities was another problem that had to be dealt with during the implementation of the experiences. As students were not used to working in real teams, they had important difficulties in working with their classmates and in accepting roles within the group unless they were grouped with their friends. In addition, students are different and not all of them show the same level of interest and involvement in class activities, irrespective of the teaching / learning approach. As a consequence, some students felt that they had to work harder while other members in the group neglected their duties. The above was particularly true in the case of high-performance students, who had more difficulties in identifying the benefits of the activity and tended to reject teamwork as unproductive and burdensome. In fact, as revealed by students' responses to the questionnaires, positive perception of the level of acquired translation competence was only detected among students with poor individual performances under traditional learning approaches. Students with good individual performances under traditional learning approaches perceived collaborative learning as a burden and claimed they would have learnt more if allowed to work alone. This was partly linked to the inability of students to identify qualitative progress in learning. Most probably, it will not be until later that they will realize that intangible competences, such as team work and the construction of knowledge are relevant for their future development as students, as translators and as individuals. In view of these results, however, an effort will be made in the future to address the lack of motivation of good-performing students in group work and find formulas that help to make these students aware of their own progress and reward their role as leaders through assessment.

Despite the above disadvantages, the revision of the assignments and translations submitted by students, both individually and in groups, revealed considerable improvements in the targeted competences, compared to the results obtained by

students enrolled in the same courses in previous years. Among tangible competence improvements the following might be highlighted:

- Higher degree of acquaintance with main text conventions for both text types, i.e. Financial Report and Scientific Paper.
- Greater awareness of the risks associated with the search and use of parallel texts.
- Awareness of the existence of alternative documentation sources.
- Decreased presence of mistranslations connected to lack of understanding of the original text.
- Awareness of the relevance of taking cultural/system differences into account.
- Fruitful reflection on subject- and type of text-bound translation strategies.
- More consistent and correct use of terminology and more successful terminology problem solving.

In addition, from the questionnaires completed by the students, and also from the very evolution of the courses, we were able to identify a series of improvements in the way students learned and worked.

- Improved teacher-student and student-student interaction.
- Increased level of motivation, effort and active involvement in the different stages of the project/task.
- Increased students' self-awareness of their difficulties in knowledge construction and increased effort resulting in a higher level of self-constructed knowledge.
- Greater awareness of the importance and advantages of real team work, beyond mere word count-based distribution of translation texts between group members.

Although these results encourage the replication of the activity in the future, the acquisition of the translation competences addressed in this paper through constructive learning would require gradual implementation of the relevant learning and teaching tools from the first year of the degree and an effort of

vertical and horizontal coordination among teachers. This would facilitate the development of a comprehensive analysis of translation competence acquisition and the design and performance of quantitative studies with control groups subjected to different methodologies to validate the conclusions derived from in-class observations.

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