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Rethinking professional translation roles: the localisation of mobile applications

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Abstract

The ever-increasing popularity of the mobile application (app) localisation market makes it essential to review localisation training in the translation technology classroom. There is clearly a need for translator trainers to adopt appropriate teaching methodologies so that students will be ready for their future professional endeavours. The present study aims to investigate the students' perception of a mobile app localisation module on an undergraduate course. Building on an action research methodology, qualitative and quantitative data drawn from discussion groups, direct observation and a final questionnaire, our study reveals that students were highly satisfied with the mobile app localisation module and felt that this training programme was useful in helping them to adapt to the growing demands of the localisation market.

Keywords: localisation; translation technology; action research; social constructivist approach; mobile application

Resumen

A vueltas con los perfiles profesionales traductores: la localización de aplicaciones móviles

La creciente popularidad del mercado de la localización de aplicaciones móviles (app) hace necesario replantearse la inclusión de estos contenidos dentro del aula de traducción y tecnología. En consecuencia, los docentes han de adoptar metodologías de enseñanza adecuadas para que los estudiantes puedan enfrentarse a su futuro mundo profesional. El objetivo de este estudio es conocer la percepción de los estudiantes hacia un módulo de localización de aplicaciones móviles dentro de un programa de grado. Bajo la metodología de la investigación-acción, así como a través del análisis de datos cualitativos y cuantitativos extraídos de grupos de discusión, la observación directa y un cuestionario final, nuestro estudio concluye que los estudiantes se muestran muy satisfechos con el módulo de localización de aplicaciones móviles y consideran que las tareas realizadas son necesarias para hacer frente a la creciente demanda del mercado de la localización.

Palabras clave: localización; tecnología de la traducción; investigación acción; enfoque socioconstructivista; aplicaciones móviles

1. Introduction

The 21st century has seen the growth of technology leading to changes in the way information is accessed and communication technology is used. Translation has made us a multilingual society where almost everything can be translated. The Internet and other technologies have impacted the entire translation ecosystem: they affect both the micro environment (i.e. the translation tools and platforms) and the macro environment of translation processes, with an expansion of text genres and translation practices (Biau Gil 2006; O'Hagan 2013). As a consequence, there is a demand for translation professionals who are expected to acquire a 'sophisticated skillset' (Rodríguez-Castro 2018).

Localisation is now unquestionably one of the most promising fields for translation students. Schäler (2011) defines it as «the linguistic and cultural adaptation of digital content to the requirements and locale of a foreign market, and the provision of services and technologies for the management of multilingualism across the digital global information flow» (Schäler 2011: 157). Together with the well-known Computer-Assisted Translation (CAT) tools, localisation tools require a more specific and technical training, since a higher degree of technical expertise is needed (Esselink 2006; Rodríguez-Castro 2018). In fact, they could be considered CAT tools in themselves, insofar as they allow translators to speed up their work, but localisation tool software is more specialised, providing a powerful set of features adapted to different digital products, such as websites and software. Academic institutions are aware of the growing demand for localisation, as it «can be a source of prestige and modernity for the discipline [Translation Studies]» (Torres del Rey 2019: 229, 255) and many of them offer learning programmes that focus on the processes, tools and development of strategies involved in localisation (Baños and Toto 2013; Bernal Merino 2015; Torres del Rey, 2019).

Whereas translation technology training has been extensively studied (Bowker 2015; Doherty and Morkens 2013; Duoxiu 2010; O'Hagan 2013; Plaza Lara 2014; Rodríguez-Castro 2018), there are comparatively fewer studies with an emphasis on the provision of localisation training. Since the eColore project (2002-2009), a wide range of training practices have emerged. However, it is not possible to define or describe a single didactic approach *per se*, as there are different products and different types of localisation, and didactic approaches will depend on the above-mentioned parameters. Bernal-Merino (2015), Granell (2011) and O'Hagan and Mangiron (2013) offer examples where video games are the focus of the localisation training, and where different issues with regard to training are posed (challenges and difficulties, and topics to be covered in the curriculum). Other authors, such as Jiménez Crespo (2013), take a functionalist approach from a pedagogical perspective. Jiménez Crespo's proposal, mainly based on web localisation, delves into the different localisation profiles and what is called a model of localisation competence. There are also examples of training based on personal experiences, such as Austermühl (2006). This author

describes how he implemented a software and web localisation course at the University of Mainz (Germany). Based on clearly differentiated translation and localisation tasks, his approach exposes students to different types of texts and tools involved in software and website localisation (Austermühl 2006: 80). Other studies focused on web localisation training include those by Díaz Fouces (2012) and Mata Pastor (2005); and others that look more specifically at multilingual web accessibility, e.g. Rodríguez Vázquez (2016), and Torres del Rey and Morado Vázquez (2019). Along the same lines, there are studies that provide examples of pedagogical approaches in the field (Bermúdez Bausela 2005; Díaz Fouces 2012; Jiménez Crespo and Tercedor 2012; Odacıoğlu and Köktürk 2015; Odacıoğlu et al. 2016; Torres del Rey 2019). However, the number of studies about mobile app localisation training is very small, despite the fact that mobile apps are a recent example of the fast-paced localisation industry (Arnaíz Urquiza and Álvarez-Álvarez 2017; Sánchez Ramos and Morado Vázquez 2015).

   Given this situation, and due to the dearth of studies that focus on mobile app localisation training, we carried out a study that sought to address the following questions:

1) How can a mobile app localisation module be implemented in a Localisation course?
2) Given that mobile app localisation is an emerging trend in the localisation market, what is the attitude towards including a mobile app localisation module in the Localisation course?
3) What is the participants' attitude towards the organisation of the module and the teamwork performance involved?

   In order to cater to the localisation industry's demands and in view of the lack of research into mobile app localisation training, this article presents a study carried out at undergraduate level. The paper is structured as follows. After a brief overview of localisation in Section 2, Section 3 describes the main difficulties mobile app localisation raises in terms of practical teaching. These difficulties provide an opportunity for trainers to reflect upon the best way to integrate these elements into the translation classroom, the previous knowledge required, the technical and linguistic needs, as well as student expectations when faced with these new professional challenges. Section 4 puts forward a teaching proposal to address mobile app localisation and gives a detailed description of the study, which is built on the social constructivism and action research methodology, and involves a group of students who have signed up for the 4th – year optional Localisation course as part of the Degree in Modern Languages and Translation (University of Alcalá, Madrid) during the 2017/2018 academic year. The article ends with the main results of the research (Section 5), including the students' perceptions, and provides the field of translation studies with insights to fuel the existing debate on new realities in professional translation. Based on quantitative

and qualitative data, and the implementation of discussion groups, our study aims to provide a methodological framework for mobile app localisation teaching.

2. Localisation

The growth of the World Wide Web (WWW), together with social, political and economic changes, has significantly increased the need for localised content. The emergence of the industry-oriented discipline known as localisation dates back to the late 1970s, when leading US computer companies started producing for foreign markets. By the 1980s, the localisation industry was able to report strong growth and wider recognition (Schäler 2007). Localisation has become essential to the commercialisation of digital products and it has also gained ground in the academic field. Therefore, an increasing number of graduate and postgraduate programmes have turned their attention to it (Veiga Díaz 2013). Nevertheless, despite these efforts, localisation does not enjoy the popularity in academia that the marketplace demands, with the exception of those who are in direct contact with the professional world as clients and businesses (Drugan 2013: 99).

Many scholars have offered definitions for the term localisation. An example is Esselink (2000: 1): «Generally speaking, localisation is the translation and adaptation of a software or web product, which includes the software application itself and all related product documentation». In 2004, Anthony Pym, in his book *The Moving Text: Localisation, translation and distribution*, did not refer to products, but 'texts'. According to him, 'text' is the key concept; 'translation' is not consigned to being just one step in the localisation process, but instead occupies a more influential role. Pym (2004: 1) defines localisation as «the adaptation and translation of a text (like a software program) to suit a particular reception situation». Other more recent studies discuss the controversial conceptualization of the term (Jiménez Crespo 2019; Vazquez Rodríguez 2018).

Unlike the first edition (published in 1998) of the Routledge Encyclopedia of Translation Studies, the second edition by Mona Baker and Gabriela Saldanha published in 2011 includes an entry for localisation. It was written by Reinhard Schäler, main researcher at the Localisation Research Centre at the University of Limerick (Ireland), who defines it as:

> the linguistic and cultural adaptation of digital content to the requirements and locale of a foreign market, and the provision of services and technologies for the management of multilingualism across the digital global information flow (Schäler 2011: 157)

Indeed, in the same entry Schäler (2011: 157) goes on to explain that:

> what makes localisation, as we refer to it today, different from previous, similar activities, [is] namely that it deals with digital material. To be adapted or localized, digital material requires

tools and technologies, skills, processes and standards that are different from those required for the adaptation of traditional material such as paper-based print or celluloid (…).

The localisation industry deals with very specific tasks, which ideally should be carried out by trained professionals. Localisation is linked to translation, but it goes further, since it also encompasses precisely technical specificities (Folaron 2006). It is outside the scope of our research to provide a detailed description of the different types of localisation. However, it should be highlighted that the ever-widening range of digital products such as software and video games has expanded the localisation market significantly. Moreover, it is worth noting that there are new challenges the different types of localisation (web localisation, software localisation, and video game localisation) entail in terms of processes, tools and translator training (Jiménez Crespo 2013; Odacıoğlu and Köktürk 2015).

Localisation opens up a wide range of possibilities for trainee translators, as they are essential agents in the localisation process. Our graduates must be aware of the client needs that they will encounter, as well as the skills and knowledge that they will require to successfully carry out localisation tasks. Localisation teaching, and hence mobile app localisation, presents several challenges for the translation classroom as regards the localisation process itself and the characteristics of the localised product. For instance, as Sandrini (2005) points out, localisation, and more specifically website localisation, deals with new formats and multimedia content as well as textual content. In parallel with this, localisation projects involve the use of specific tools, which allow the translator to extract the translatable content from a website or software program. In addition to the challenges raised by the localisation product and process in general, there are also challenges of a pedagogical nature, such as technical limitations (the need for specific software programs, appropriately equipped computer rooms), reference materials and background research, and the limited number of teaching hours. Furthermore, the need for a connection between the business and the academic aspect cannot be understated, because in order to satisfy the needs of the marketplace, our students need to develop those skills which will allow them to successfully join the localisation workforce. This connection can be established through training programmes within the academic field, such as courses given by professionals, as well as through work experience programmes in localisation companies.

Several studies have dealt with the main differences between translation and localisation, and the place localisation occupies within Translation Studies (TS). Although there are authors who consider localisation as another example of translation (Mazur 2009), there is a consensus to state that it is a sub-discipline within TS (Folaron 2006; Jiménez Crespo 2013, 2019; Odacıoğlu 2017). Certain studies have focused on describing the necessary professional and technical skills which translators need to develop in the field of localisation (DiFranco 2003; Folaron 2006; Jiménez Crespo 2013; Roturier 2015).

In our opinion, the main difference between localisation and translation can be found in the process, which implies the use of specific tools, and in the final product itself, together with the diversity of linguistic-textual and non-linguistic content. On the one hand, the transfer process in localisation is directly interwoven with technical aspects, as well as being characterised by a constantly changing work flow, which generates a dynamic relationship between the different players involved (translators, project managers, engineers, etc.), and which is known as 'agile localisation'. According to the type of localisation, a diverse range of content (linguistic-textual, multimedia elements and cultural aspects) and formats (.html, .xml. .svg, .po, etc.) is translated and adapted. Equally, translators may end up working with different programming languages. In website localisation, for example, where the translator must be familiar with common programming languages in dynamic website design. There are software tools and specialised localisation programs that facilitate the transfer task (i.e. SDL Passolo, in the specific case of software localisation), separating the translatable text from the code. On the other hand, in the localised product, the focus is on a dynamic and constantly updated digital product which must be adapted from a linguistic and cultural perspective in order to satisfy the demands of a specific market.

Under this scenario, translator training has been adapting to these new challenges. Translation technology training has covered different issues in the last few years, such as the translation technology curriculum (Bowker 2015; Duoxiu 2010; Plaza Lara 2014; Rodríguez-Castro 2018) and pedagogical approaches to MT learning (Sánchez-Gijón and Torres-Hostench 2014). In the same vein, and due to the popularity of localisation, different studies have been carried out to introduce localisation into translator training in order to conceptualise localisation among translation theories (see Introduction). These are examples of recent translator training practices meeting new technological challenges in a more specialised market. For instance, some studies focused their attention on designing specific localisation modules in university contexts (Baños and Toto 2013; Granell 2011). Some other publications, such as those by Sandrini (2005), Mata Pastor (2005) and Torres del Rey and Vázquez de Aldana (2014), offer a descriptive account of the main challenges that website and software localisation pose in translator training.

3. Mobile app localisation

Among the different products that are localised (software, websites, videogames, etc.), the commercialisation of mobile telephones or smartphones is at a peak (Demand Gen report 2016). Therefore, the numerous apps designed for them are becoming products in enormous demand in the digital marketplace. Ray (2016: 31) provided a daunting statistic for 2017: «With a billion tablets already online and four billion smartphones predicted to be in use worldwide by 2017, mobile is the next frontier for companies to implement and fine-tune the global customer experience». The smartphone is more than just a means of communication; it is a device providing

a multitude of services and leisure channels via an infinite choice of available apps. In recent years, we have witnessed increasing sales of these devices, which have spread throughout the international marketplace. Part of the commercial success of these products is due to their sale in a large number of countries, in particular Asian countries such as China and South Korea (Schäler 2012), thereby increasing the number of potential users.

A mobile device is defined as a small-size, multifunctional system, which has some processing capacity, permanent or intermittent connection to the internet, and limited memory (Guevara Soriano 2010). In accordance with this definition, there is a multitude of mobile devices, from portable audio players to GPS devices, including smartphones and tablets. Our study will focus mainly on smartphones, one of the mobile devices whose acquisition and use has increased most in the last few years. As Schäler (2012) states, an ever-increasing number of mobile apps are being designed in languages other than English, and these have to be localised for specific linguistic markets in order to generate profits for the companies. As a result, new openings are preparing in the professional market for translators (Schäler 2012).

In our view, and based upon studies about the challenges and difficulties that localisation presents (Folaron 2006, Roturier 2015; Sánchez Ramos and Morado Vázquez 2015), mobile app localisation shares some similarities with software localisation, but it also has specific characteristics of its own, since the world of mobile apps is constantly changing in terms of styles, versions and gadgets (Andersen 2019).

With respect to the textual content, the main difference lies in access to the material that has to be localised. In mobile app localisation, translators tend to work with XML files, in contrast to software localisation, where they face various localisable elements in the form of source code or binary files. The textual content will depend on the platform on which the app is running. Taking Android as an example, there is a folder called 'res' (resources). Inside this folder, the 'values' folder contains textual material in the form of the so-called 'strings' (i.e. strings.xml file). Normally this type of file can be translated using a CAT tool. Closely related to the textual content, and as in the case of software translation, certain issues have to be taken into account, such as register and terminology. For instance, it is advisable to bear in mind which platform the app has been developed for (Android, iOs). Nowadays, different developers offer help guides or even language portals, such as that of Microsoft, in order to facilitate the translator's job. Therefore, terminological consistency according to the type of platform is of utmost importance (Palomares 2012). An important issue to be taken into account is the lack of context; as mentioned earlier, translators work with strings, which on many occasions make the comprehension of the text content to be more difficult.

Regarding non-textual content (i.e. images, icons, colour) mobile app localisation follows the same rationale as software localisation, that is to say, these components have to be linguistically and culturally adapted to a specific market. When it comes to the mobile app process, more differences emerge when compared with software localisation. For instance, there are size restrictions. Although there is a wide range of

smartphones sizes, it is generally true that the screen size tends to be small. This technical issue, which is part of the internationalisation process of product development, can be a challenge for the localiser. In this respect, the localiser must, unless otherwise specified, be aware of and adhere to localisation guidelines, so that translations are no longer than that permitted by the internationalisation stage.

Another notable difference can be observed in the localisation process itself and the localisation tools. As in the case of software localisation, the localiser can work with CAT tools, given that the great majority of them recognise the .xml extension included in the res file and will extract the translatable text. The main difficulty is that there is a scarcity of specific software for mobile apps (i.e. Android MultiTools, Applanga) in comparison with software localisation (SDL Passolo, Alchemy Catalyst or cloud-based platforms, such as OneSky or Smartling), and the process itself can involve more technical knowledge, such as decompiling, compiling and signing the apk file (i.e. Android).

4. Implementing the mobile apps localisation module: method

The study was implemented as part of a module devoted to mobile app localisation, within the Localisation course, taught in the 2017-2018 academic year (Degree in Modern Languages and Translation, University of Alcalá, Madrid). This module is the last teaching module in the syllabus, so students have already built up a solid base of theoretical and technical knowledge about software localisation.

4.1. Method

Our study will try to answer the research questions proposed by carrying out what is known as action research. This methodology has gained considerable importance in educational contexts, and is characterised by the active role the teacher assumes as principal researcher and agent of change (Latorre 2003; Merriam 1998). Action research is carried out in real classroom situations with the principal aim that it will lead to innovation and adjustments for the classroom syllabus. According to Cohen and Manion (1985), action research is participative, that is to say, teachers and learners take a direct or indirect part in the research; it is also collaborative, insofar as teachers and the learners work together; situational, since it deals with a real problem in a specific context; and self-evaluating, because it involves a continuous assessment of all the changes that take place.

There is a wide range of qualitative and quantitative instruments whose suitability for the study will be determined by the type of research. With respect to qualitative research, the most commonly used instruments are interviews, focus and discussion groups and direct observation by the researcher (i.e. the instructor). For our study, discussion groups and direct observation by the researcher were used. As for quantitative

data collection, we used a final questionnaire, which complemented the information obtained from the qualitative data.

The data was collected through three different processes:

a) Two sessions of three hours each, where the six groups worked on the task assigned. In this context, the course instructor was what Massey and Brändli (2016: 184) would call 'a minimally invasive facilitator', answering questions, clarifying doubts during the sessions and using note-taking as the main instrument for gathering data, and providing scaffolding to work on as a group.
b) A two-hour discussion group session, where the groups discussed the activity proposed with the aim of gaining insight into the main difficulties they encountered using the different tools, the solutions put forward and their final evaluation of the tool. The course instructor guided and organised the session.
c) A final questionnaire to examine translator trainees' perception of the module and how it was organised.

A social constructivist approach was followed in order to implement the mobile app module. In terms of training, this approach ushered in by Kiraly (2000) argues in favour of project-based real translation work, such as tasks performed under situational approaches. Kiraly's approach represents one of the most influential theories in translation training, aiming towards the constructing of knowledge, a shift from knowledge transfer to knowledge construction and from teacher-oriented approaches to methodologies focused on the learner. Social constructivism attaches considerable importance to collaborative work, active learning, and authentic tasks and projects. The learning environments endorsed by social constructivist theories are collaborative contexts where students can work on situations that resemble the professional reality. This fosters interaction with technologies and fulfilment of the roles involved in professional translation, such as project managers, terminologists, reviewers, etc. Orchestrating a social constructivist classroom involves different factors. An appropriate physical environment will be necessary, together with an interaction framework for students who – in their role as translators, project managers or terminologists, for example – will be able to work and interact with other participants and employ technological and language resources. The right environment will facilitate the construction of learning based on interaction and responsibility shared between team members.

4.2. Procedure

A total number of 30 undergraduates participated in the study (25 females and 5 males). They all signed up for the optional course 'Localisation' (Degree in Modern Languages and Translation, University of Alcalá, Madrid), and had completed and passed the compulsory course called 'Translation Technology'. All of the participants

were Spanish native speakers. The mobile app module took place over two weeks, two days per week, and with a total of 6 teaching hours plus 2 additional hours devoted to the final wrap-up session. The participants were divided into six groups of five students, and they could choose their own partners.

The activity involved the localisation of a mobile app (Traffic Jam) from English into Spanish using two different tools: 1) a CAT tool installed on the translator workstations (SDL Trados 2016); and 2) a specific mobile app software for Android called Android MultiTool. Traffic Jam is a free game app developed for Android. Due to time constraints, students were asked to localise the textual content included as part of the interface (i.e., text included in the different menus or the text messages). To do this, three groups worked with SDL Trados 2016 and the other three groups worked with Android MultiTool and SDL Trados 2016. The last two hours of the module were devoted to a discussion group session in which students gave an oral presentation on the localisation process, the idea being to exchange information about how each group had carried out the activity. Prior to the activity, the trainer devoted one session of two hours to discussing the main challenges and difficulties that mobile app localisation involves. These have already described in Section 3. Students were fairly familiar with the main concepts related to localisation and file formats, as wells as other types of localisation (i.e. web localisation, software localisation) and tools, as the mobile app module was set at the end of the semester.

Due to the team work structure of the activity, students were able to explore the different tools in groups and to interact with each other. Groups 1, 2 and 3 localised the app using a CAT tool (SDL Trados 2016), and Groups 4, 5 and 6 performed the same activity using Android MultiTool and SDL Trados 2016. Each group was encouraged to divide tasks, with different members being responsible for organising, planning and assigning the different tasks involved in the mobile app localisation process (translating, selecting terminology, testing, etc.). For the communication tasks between the participants the course used a Virtual Learning Environment (VLE) on the Blackboard institutional platform, and where the participants of each group created discussion forums and conversation threads related to the tasks and activities to be carried out. It was up to them to exchange information or discuss problems with the group performing the same task, i.e. the one using the same tool.

5. Results and analysis

As mentioned above, direct observation and a discussion group session were the two main qualitative data collection tools. As for quantitative data collection, a final questionnaire was also distributed to evaluate students' perception of the experience of engaging in a project-based task to localise a mobile app.

5.1. Qualitative analysis

The first research question was addressed using the qualitative data collection method previously described (direct observation and a discussion focus group session). A descriptive analysis was carried out on the data collected, namely:

(a) notes taken by the instructor during the two-hour sessions, in which the teacher made notes of all the comments and doubts students voiced during the activity
(b) and the two-hours discussion group session: the instructor assuming the role of facilitator intervened in the debate only to guide and bring the discussion back to some specific points (i.e., problems during the localisation process, advantages and disadvantages of using a CAT Tool or a more specific localisation software) or to link comments between the participants.

The general picture that emerged from the data analysis suggests that students were aware of the different advantages and disadvantages of using two different tools when working with mobile app localisation.

Groups 1, 2 and 3 reported that the experience was highly satisfactory, given that all the students agreed on the advantages that the CAT tool gave them (i.e., code is protected and a translation memory can be used). However, technical knowledge is also required, since at times it is necessary to create filters and to be familiar with .xml language and regular expressions for the creation of these filters. As mentioned earlier, all students had passed the compulsory course called 'Translation Technology' and were familiar with the creation of filters and the use of regular expressions. The main problem noted was the lack of context to check whether the app worked in a smartphone, for students could not use any type of emulator as they only worked with decontextualised strings (.xml file). Some of the comments were:

• Group 1: «The main disadvantage when working this tool [SDL Trados 2016] tool is that we do not have an emulator to run the application and check final result»
• Group 2: «After seeing the presentation of other groups working with Android Multitool, it seems that SDL Trados Studio is a good option if we work only with the strings, but maybe Android is better as the final product, that is, the mobile app in Spanish can be checked»

Groups 4, 5 and 6 carried out the task with a mobile app localisation tool by the name of Android MultiTool, which also involved using SDL Trados 2016 to translate the textual material. Apart from the need to know .xml language and the use of CAT tools to translate the strings (xml file), other technical knowledge is required when installing this program and managing other format types such as .apk files. Apk stands for 'Android Application Package', in order words, it is a file designed for the Android operating system and the installation of mobile apps. In the discussion group session,

Groups 4, 5 and 6 explained the procedure they had followed to localise the app: after decompiling the apk file, they used SDL Trados 2016 to translate the xml file including the textual material, which was placed in res\values\strings.xml. After translating the xml file, they placed it in the appropriate folder, compiled the apk folder, signed it and ran it in Android Multitool to see the localised app. Most of the comments concerned several technical issues related to Android Tool.

- Group 5: «When trying to decompile the original apk file with the Android Multitool software, the program showed an unknown error after installing the apk: apparently, it could not find the file in the computer»

Next, all the groups explained how they had carried out the task. It was concluded that a more specific localisation tool like Android MultiTool seemed to be most appropriate, as it included the possibility of running the localised app to see the final product, and it was a specific mobile app localisation tool. In summary, based on the findings of the discussion group session, participants were aware that they need to be familiar with different tools in order to face the different localisation challenges they might encounter.

The discussion group session activity resulted in an extensive debate that clearly outlined the main challenges posed by mobile app localisation. The students' reflection on the activity was a good way to evaluate the module itself. The students presented a variety of points of view about the different tools, and expressed wide-ranging opinions, incorporating critical thinking and reflections on new professional paths and technology. We include some of the students' comments for illustration:

- Student A: «Using Android MultiTool was a challenge as I had never used this software. I didn't know about .apk files either. I think I need to know more about mobile apps localisation as I've read a lot about job opportunities about it»
- Student B: «I've learnt different ways of sorting out mobile apps technical problems. I thought that using a CAT tool was enough, but we need to know more tools to localise different products»

As a first conclusion, it was clear that carrying out this activity reflected positively on the teaching of the course and the methodology. Overall, in view of the outcomes presented in this section - such as the awareness that mobile app localisation is an emerging trend into the localisation industry - the teaching framework, the group work and the discussion group session were suitable due to the fact that the students had previously acquired the required technological background during the «Translation Technolog» y subject. Secondly, the teaching methodology employed certainly allowed students to further develop skills related to teamwork and to interactions between team members and the course instructor. Finally, the debate session allowed for a pooling of thoughts about the work completed using the different tools.

5.2. Quantitative analysis

In order to address the second and third research questions, a questionnaire was distributed. It consisted of 9 questions in English using a 5-point Likert scale ranging from 1 (I strongly agree) to 5 (I strongly disagree) and an open question. The questionnaire was distributed among the students after they had finished the module. This questionnaire was divided into three sections, which focused on an evaluation of the methodology used (items 1-3), the learning environment (items 4-7), and students' motivational factors (items 8-10). The results for methodology showed that teacher instruction was appropriate (Table 1). The role of the instructor as facilitator was perceived as being useful, addressing the doubts and questions raised by the students.

Table 1. Evaluation of the methodology used

Items	Strongly agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly disagree (5)
1. The teacher provided me clear instructions about the activity	73.33%	26.66%	-	-	-
2. The teacher guided me to better understand and perform the activity	86.66%	13.33%	-	-	-
3. The teacher gave me feedback about the activity that helped me understand my strengths and weaknesses of my performing	86.66%	10%	3.33%	-	-

With regard to learning environment, group and collaborative work, as well as active learning and hands-on sessions (Table 2), they were viewed as an enriching activity, and just a small percentage of the participants gave a neutral response (item 4, 6.66% I strongly agree; 80% I agree; 13.33% Neutral). This is quite relevant, as sometimes students are reluctant to work in groups (Martínez Carrasco 2017). It is worth highlighting that group work was chosen since developing teamwork skills at university level is considered essential in order to enter the professional market (Volkov and Volkov 2015). Working with other partners empowered the participants' performance and made them feel confident when they had to share and take decisions (item 5, 93.33% I strongly agree; 6.66% I agree). As a learning environment, the final activity in the form of discussion groups was highlighted as relevant for the teaching content (item 6, 93.33% I strongly agree; 6.66% I agree).

Following the social constructivist approach very closely, the module on mobile app localisation principally aimed at developing knowledge by means of a student-centred methodology as opposed to a teacher-oriented approach. In doing so, our approach attached considerable importance to collaborative work, active learning, and authentic tasks and projects as Kiraly's approach suggests. In parallel with this state-

ment, item 7 was highly positive since all of the students stated that they preferred the module organized in groups compared with a traditional teaching classroom.

Table 2. Evaluation of the learning environment

Items	Strongly agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly disagree (5)
4. Group work was an excellent medium to carry out the activity	6.66%	80%	13.33%	-	-
5. Group work made me feel confident when sharing different points of view with other students	93.33%	6.66%	-	-	-
6. Discussion group activity helped me understand the main concepts of the activity	93.33%	6.66%	-	-	-
7. I would prefer a more traditional class focused on theory and a hands-on session	-	-			100%

With respect to motivation (Table 3), students found the module useful for their professional career (item 8, 96.66 % I strongly agree; 3, 33% I agree). Although it may seem an obvious result, item 8 was included as the 'Localisation' course is very limited in time (6-credit course). The main aim was to find out whether students considered the mobile app module useful for the course and for future localisation training within the course. Item 9 suggested that the mobile app module increased participants' general interest in the Localisation course.

Finally, students had to answer the open question «is there any other comments you would like to add?» (item 10). Their comments confirmed what was highlighted during the discussion group, since participants stated they were barely aware of the specific localisation tools and the technical specificities (i.e. apk files, compilation and decompilation process) of mobile localisation involved. Other comments concerned the positive attitude towards the distribution in groups.

Table 3. Evaluation of students' motivation

Items	Strongly agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly disagree (5)
8. I believe I can apply what I have learnt during the module	96.66%	3.33%	-	-	-
9. Mobile apps localisation module organization increased my interest	76.66%	13.33%	10%		

6. Conclusion

From the point of view of language service providers, as well as from a training perspective, the localisation industry continues to expand. As Bernal Merino highlights (2015: 223), translators assume new roles as a result of the industry specialisation, and translator training must evolve in order to meet the new challenges. The emergence of mobile app localisation is one such example. Although studies and localisation training proposals have been put forward over the last few years (Granell 2011; Sandrini 2005; Mata Pastor 2005; Odacıoğlu and Köktürk 2015; Torres del Rey and Vázquez de Aldana 2014), studies devoted to mobile app localisation are scarce (Sánchez Ramos and Morado Vázquez 2015). With the purpose of contributing to the localisation training research that already exists, our work has described how we implemented and carried out a localisation module focused on mobile app localisation.

Framing the teaching within a social constructivist approach and applying an action research methodology, qualitative and quantitative data suggest students' general satisfaction with the module and enable us to draw some conclusions about the three research questions. With regard to the first question, we can conclude that the social constructivist approach was effective. Qualitative data suggest that students worked in an environment facilitating the construction of learning based on interaction and responsibility shared between group members. As far as the second and third questions are concerned, and mainly based on the quantitative data (questionnaire), participants appear to be aware that knowing how to deal with the localisation of digital products is essential. In this same vein, the organisation in groups and the oral presentations were appreciated as positive elements by the students.

In the light of the results obtained, we consider that our work offers a starting point for future mobile app localisation training research and makes a contribution to the existing literature on translation technology training in general.

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