

A PRELIMINARY SCALE FOR ASSESSING TRANSLATORS' SELF-EFFICACY

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Abstract: Although applied self-efficacy research currently offers some promising avenues of study for Translatology (Jiménez Ivars and Pinazo Calatayud 2001; Atkinson 2012; Bolaños-Medina 2014), no specific translation self-efficacy scale (TSE) with adequate psychometric properties has been devised until now. The purpose of this study is, on the one hand, to develop a scale for assessing translators' self-efficacy following the recommended standard guidelines (Bandura 2006) and a rigorous statistical testing process which will allow us to determine its factor structure and psychometric properties in undergraduate students ($n = 74$). On the other hand, by doing so, we will also illustrate the process of developing psychometric instruments specifically designed for cognitive, empirical-experimental research in Translatology, in order to promote more efforts in this direction within our discipline. A conceptual analysis of the relevant domain of functioning was performed and a preliminary pool of 52 items was initially suggested, and later refined into 20. After conducting exploratory and confirmatory factor analyses, descriptive statistics and distributions of the items were obtained. Next, the internal consistency and the concurrent validity of TSE's five subscales were evaluated. The results indicate that TSE shows adequate levels of reliability and validity, and support its five-factor structure.

Keywords: translators' self-efficacy, translation psychology, process-oriented research, research methodology, individual differences in translation, psychometric properties

1. INTRODUCTION

It has been acknowledged that it is not always the most gifted translation student who produces the best translation or obtains the best grade. In fact, although there may be many factors at stake, it has been suggested that success is often based more on what individuals believe about themselves than on what is objectively the case (Bandura 1995; Salanova Soria et al. 2004; Pajares and

Urdan 2006), since individuals' assumptions about their own capacities to appropriately perform certain tasks seem to play an important role in the final outcome of these tasks (Bandura 1992; Schwarzer 1992). In this regard, self-efficacy accounts for people's beliefs in their own capabilities "to organize and execute the courses of action required to manage prospective situations" (Bandura 1997:2), that is, there is a sense of control over an individual's environment (Schwarzer 1992; Pajares and Urdan 2006).

Research into self-efficacy and translation becomes even more interesting if we bear in mind that not only does this construct facilitate decision-making processes, goal-setting and academic achievement, but also that self-efficacious people are likely to be highly motivated and seem to persist longer and to invest more effort once an action has been initiated (Bandura 1995). Furthermore, at the same time, they recover faster from setbacks.

It is therefore not surprising that self-efficacy has recently started to attract the attention of researchers from the translation and interpreting field (Albin 2012, 2013; Atkinson 2012; Bolaños-Medina 2014). In the last few years, not only has research on translators' self-efficacy already yielded some interesting results, but it also seems to offer some promising avenues of study in the short term. However, in order to pursue such research efforts, the development of a task specific self-efficacy psychometric scale for translators, with proven adequate psychometric properties that can guarantee a suitable predictive value, becomes all-important; only thus can translators' self-efficacy be adequately quantified and correlated with other key factors. Such an instrument would allow us to determine empirically, for instance, to what extent translators' specific self-efficacy beliefs can influence their performance, or even whether programs deliberately designed to foster translation self-efficacy in university training settings can boost not only trainees' sense of expertise but also certain patterns of behavior actually linked to expertise development.

Translatology has traditionally borrowed measurement tools from other areas of knowledge, due to its lack of background experience in empirical research. As a matter of fact, it is high time this situation changed. In Alves and Hurtado Albir's words (2010:34):

The major problem faced by cognitive approaches to translation, and by empirical-experimental research related to it, is precisely the validation of its own instruments of data collection. The field needs to design its own instruments for data collection (questionnaires, standard charts, etc.) and put them to the test in exploratory and pilot studies in order to guarantee the reliability of data to be collected.

The purpose of this study is, on the one hand, to develop a scale for assessing translators' self-efficacy following the recommended standard guidelines (Bandura 2006) and a rigorous statistical testing process which will allow us to determine its factor structure and psychometric properties in undergraduate students. We have defined translation self-efficacy as individuals' beliefs in their competence to successfully perform the courses of action needed to produce an acceptable translation for a given translation brief – which may entail regulating their motivation, thought processes, performance level or emotional states (Bandura 2006). On the other hand, by thoroughly describing the steps we followed in order to develop this scale, we will illustrate the process of creating psychometric instruments specifically designed for cognitive, empirical-experimental research in Translatology, in order to promote more efforts in this direction within our discipline.

First, recent developments of self-efficacy research in general are presented, followed by a review of those occurred in Translatology in particular. Then, previous attempts to accurately measure self-efficacy in the translation arena are outlined. Subsequently, after describing the research methods, the main results are explained and analyzed.

2. SELF-EFFICACY

Self-efficacy does not share the major properties ascribed to personality traits (Bandura 1997); it is rather a cognitive factor, a context-dependent cognitive mediator of action (Bandura 1982). In terms of cognitive functioning, the stronger the perceived self-efficacy, the higher the goal challenges people set for themselves, the firmer their commitment to them and the more successful types of anticipatory scenarios they picture (Bandura 1995). The mediator role of self-efficacy in decision-making has also been documented, especially by influencing goal setting, as well as attentional and information analysis processes. Thus, self-efficacious individuals are more likely to rule out wrong strategies while persisting in more appropriate solutions and interpreting possible errors as informative, instead of weakening (Tabernero 2004).

In order to obtain a better insight into self-efficacy, the differences between this notion and related constructs such as self-concept, self-esteem and self-evaluation of performance will be briefly explained in the following paragraphs.

An individual's self-concept can be understood as what he or she thinks about the self. In contrast, self-esteem comprises the positive or negative evaluations of the self, and particularly how individuals feel about it (Smith and Mackie 2007). In this sense, the self-concept can be viewed as the cognitive part

of the self and self-esteem may be seen as the affective portion of the self (Hamachek 1992).

On the other hand, while both self-efficacy and self-concept account for individuals' judgments on their own capabilities, the latter emerges as a more complex construct incorporating both cognitive and affective responses towards the self and is highly influenced by social comparison (Bong and Clark 1999). Moreover, self-efficacy focuses on the perceived competence in terms of implementing the cognitive skills and behavioral actions that are required for adequate performance for a given ability or skill, i.e., it is used in reference to a specific goal.

Finally, it has been acknowledged that individuals' self-concept is socially negotiated and modified through self-evaluation, being self-evaluation of past performance an influential form of this kind of self-assessment activity. However, even though self-efficacy also implies a similar sort of evaluation, it always refers to prospective situations, not to past performance.

Past decades of research on the influence of self-efficacy beliefs in academic functioning have supported Bandura's (1986) claim that self-efficacy beliefs play an influential role in human agency (Pajares 2003). From a pedagogical point of view, nurturing a sense of self-efficacy in students constitutes a key factor in any educational level, since such positive self-beliefs will have a beneficial influence not only in the short term but also as individuals' progress through their academic development and professional careers. In Bandura's words (1986:417), "students who develop a strong sense of self-efficacy are well equipped to educate themselves when they have to rely on their own initiative".

Four main sources of self-efficacy have been described: mastery experiences, vicarious experiences provided by social models, social persuasion and physiological and emotional states (Bandura 1994). Although successes tend to boost people's self-efficacy and failures to undermine it, "a resilient sense of efficacy requires [mastery] experience in overcoming obstacles through perseverant effort" (Bandura 1995). A key factor in vicarious experiences is the perceived similarity to the models that "transmit knowledge and teach observers effective skills and strategies for managing environmental demands" (Bandura 1995:4) through their expressed ways of thinking and behaviors. Likewise, individuals can also be persuaded that they have what it takes to master given activities. Finally, as for physiological and emotional states, what matters is the way they are perceived and interpreted, since affective arousal can be taken as an undermining behavioral factor or an energizing facilitator of action.

As for academic self-efficacy, it is noteworthy that mastery experience seems to be its most influential source, albeit the strength of the different sources usually depends on contextual factors (i.e. gender, ethnicity, academic

ability and academic domain) (Usher and Pajares 2008). The relationship of students' self-efficacy, competence, motivation and academic performance constitutes a relevant field of research (Pajares 1996). The association between self-efficacy and competence is well documented in the scientific literature. Thus, self-efficacy is seen as dealing primarily with cognitive perceptions of competence (Hughes, Galbraith and White 2011). Self-efficacy is used as an outcome with regard to competence and effective communication skills. In this sense, students with greater communication competence tended to show higher levels of communication self-efficacy (Song et al. 2015).

On the other hand, as a key construct of social cognitive theory, self-efficacy appears to be a significant variable because it affects student motivation and learning (Bandura 1997). Thus, Bandura (1997) defends the importance of knowing self-efficacy judgments to explain how people develop an implicit interest in tasks for which there was initially no intrinsic motivation. In different life contexts, self-efficacy is positively correlated with mastery goal orientation and intrinsic motivation (D'Lima, Winsler and Kitsantas 2014). The power of self-efficacy as intrinsic reinforcement has been highlighted by De Young (2000), who indicates that the key lies in the fact that when individuals feel capable of carrying out a type of behavior, they experience an intrinsic satisfaction resulting from their own competence, which promotes personal development. Furthermore, it has also been found that improving self-efficacy expectancies increases motivation and output in learning tasks: students with higher self-efficacy expectancies tend to have a higher academic motivation, they achieve better results, are capable to self-regulate their learning in an efficacious way and show higher intrinsic learning motivation than other students (González and Tourón 1992).

Finally, Buch, Säfvenbom and Boe (2015) highlight the relationship between self-efficacy and intrinsic motivation claiming that with increasing levels of intrinsic motivation, subjects may be more inclined to act on their self-efficacy beliefs, resulting in increased perception of competence.

3. RECENT DEVELOPMENTS OF SELF-EFFICACY RESEARCH IN TRANSLATOLOGY

Self-efficacy has been more frequently addressed in terms of interpreting, perhaps due to the immediacy of such an activity, but also partly as an effort to understand individual differences which may be linked to potential success among interpreter students. It is widely accepted that interpreting is "a complex task often approached by students with negative expectations, even when they do possess the specific abilities required to perform it" (Jiménez Ivars, Pinazo

Calatayud and Ruiz i Forés 2014:171; Chiang 2009), hence the importance of considering students' beliefs in their own abilities to reach interpreting goals.

Jiménez Ivars, Pinazo Calatayud and Ruiz i Forés (2014) gathered several concepts used in interpreting research which imply the significance of a positive self-perception for this task, and which somehow prove the acceptance by the academic community of self-efficacy's pertinence as an object of study. These include "confidence in success", "optimism", "expectancy of goal attainment", "good self-concept" and "self-confidence", which is precisely the more frequently cited one from 1985 (Moser-Mercer) until now.

For instance, as early as in 2001, Jiménez Ivars and Pinazo Calatayud suggested that self-efficacy could act as a modulator of the effect of students' anxiety on interpreting performance. Later on, Bontempo and Napier (2011) addressed self-efficacy in a study on interpreters' perceived confidence in accredited sign language interpreters and found that emotional stability is a predictor of interpreter's self-perceived competence. At the time, the need to measure closely related concepts such as "confidence in success" was already felt by Shaw (2011) and was fulfilled by using a psychometric instrument which combined this construct with a variety of other scales, such as the Achievement Motivation Inventory (Schuler et al. 2004). More recently, Mashady, Fatollahi and Pourgalavi (2015) found a significant positive relationship between self-efficacy and note-taking inclination – an important aspect of interpreting ability – in 53 junior and senior undergraduate translation students and concluded that "learners' self-efficacy should be more considered in interpreter training programs at B.A. level" (Mashady, Fatollahi and Pourgalavi 2015:2366).

Macnamara's theoretical work (2012) represents another significant contribution in this line of research. In this model of interpreter cognitive aptitudes, self-efficacy is included as one of the social-cognitive aptitudes guiding operational suitability, since "individuals with higher levels of self-efficacy are often more mentally organized, more flexible in their thinking, and generally less anxious" (Macnamara 2012:12).

In the translation arena, self-efficacy has only recently begun to attract academic interest. Notwithstanding, other closely related constructs such as self-awareness and self-confidence (Hönig 1991; Kussmaul 1995; Tirkkonen-Condit and Laukkanen 1996; Wilss 1996) have already been considered. As our understanding of language and our capacity for symbolic thought increase during childhood, human beings develop a capacity for self-awareness and a sense of personal agency which lie at the centre of other self-referent phenomena and constructs, such as self-efficacy (Bandura 1997) and self-confidence. For Kussmaul (1995:32), "it is through self-awareness that translators gain self-confidence." Hönig (1995) also stressed the fact that those

translators who are more aware of what happens in the process of translation will be therefore more confident in their work.

Through the analysis of Think-Aloud Protocols, it became clear that some subjects often came up with quite adequate solutions that were subsequently lost, most likely due to the insecurity of the translator (Kusmaul 1995). Moreover, Kusmaul (*ibid.*) suggests that self-confidence is one of the prerequisites for creative translation. Furthermore, confidence and translation quality seem to be positively related (Tirkkonen-Condit and Laukkanen 1996).

During the last five years, the first works properly dealing with translation self-efficacy have been published. Interestingly, Albin (2012:9; 2013) found that “translators with high self-efficacy evaluate themselves against money and prestige criteria, while professionals with deficient self-efficacy are mostly self-referenced”, which seems to point to the importance of certain social factors in the translation profession. She also found that high self-efficacy and a favorable attributional style correlate with high level management and Computer Aided Translation (CAT) skills.

Atkinson's research (2012) on freelance translators' psychological skills has given self-efficacy a leading role in the study of the relationship between job ability and motivation, job constraints, and subsequent job performance in translation. He even claimed that occupational self-efficacy showed itself to be the “flagship” variable of the group of variables related to psychological skills (Atkinson 2012:271) he analyzed in the framework of his doctoral thesis.

In fact, self-efficacy constitutes one of the three components of Atkinson's model of psychological skill, together with attribution style and locus of control, and he expressly relates it to the attitudinal area of the psycho-physiological components described by PACTE (2003). He found that occupational self-efficacy usually grows with experience, that it correlated fairly strongly with career motivation and that it tends to predict job satisfaction and income rank. When it is considered a motivational feature, a lack of self-efficacy could act as a constraint; moreover it “is an adaptive skill up to a point, and beyond this, overly high self-efficacy would become a liability” (Atkinson 2012:260). According to Atkinson (2012:260):

These observations and approaches suggest that if occupational self-efficacy can be encouraged to grow while [translation] students are still in the relatively protective environment of a training institution, this provides the advantage of allowing them to deal with challenges in a constructive way. Additionally, when problems arise, they are able to get guidance relatively easily from tutors and peers, which will most probably in turn increase their self-efficacy, particularly around negotiation and communication. Students who have been through such a process are most

probably better prepared (in terms of psychological skill) than those who have not.

In a survey of the cognitive, affective and behavioral factors of students' attitudinal patterns towards CAT, Bolaños-Medina and Isern-González (2012) found a relatively high level of insecurity in translation students when it came to using such tools; moreover, their performance tended to be lower when they worked under teachers' surveillance. Both factors led these authors' attention towards the study of specific self-efficacy as a variable potentially mediating computer performance of students majoring in translation (Isern-González and Bolaños-Medina 2014), as is the case in other computer teaching domains (Gist, Schwoerer and Rosen 1989). A similar conceptual evolution was followed by Haro Soler (2013). After analyzing the role of self-confidence in up to fifteen different models of translation competence, she found that this topic was only addressed in four of them and then only superficially. A further revision of the specialized literature made her ponder the suitability of self-efficacy for the study of translation students' confidence in their translation ability, given that it accounts for domain specificity. Interestingly enough, she also referred in her work the conclusions of a discussion group: according to students, translation teachers, fellow students and the curriculum itself are the sources of academic self-efficacy that more often stand in the way of an adequate development of their self-confidence as translators.

The results of an exploratory correlational study ($n = 108$) based on self-report measures (Bolaños-Medina 2014) also suggest that self-efficacy is a construct of relevance for translation process-oriented research, which has shown significant positive correlations with participants' proficient source language reading comprehension, tolerance of ambiguity and perceptions of meeting the necessary requirements to become professional translators; but also with their ability to find background documentary information and the fact that they know when to stop searching for a solution for a translation problem.

Finally, a close interrelationship between self-efficacy and expertise has been described in general terms. Ho (2010), for example, found a positive relationship between perceived self-efficacy and expertise, with the latter defined as a consistently superior performance shown when accomplishing certain domain-specific tasks (Shreve 2006). Muñoz-Martín (2014) also highlighted the link between self-efficacy and translation expertise by specifically including self-efficacy as one of the minimal set of components of self-concept, which in turn is one of the five situated dimensions of translation expertise, together with knowledge, problem-solving skills, adaptive psychophysiological traits and regulatory skills. However, despite the increasing

interest of researchers for translation expertise, no specific empirical study has explored its connections with translators' self-efficacy yet.

Furthermore, translators' self-efficacy beliefs are likely to be built mainly on their continuous metacognitive monitoring activity, which "determines whether the outcome of a process has been successful" (Shreve 2009:262) and assesses the extent to which the process itself has been useful in solving a problem, thus constituting a central skill for the development of expertise. In fact, in the translation arena, as is the case in other fields, it has been found that expertise also implies the ability to appropriately judge one's own performance (Hansen 2003); i.e., those translators who obtain the best results in translation tasks seem to gauge best the quality of their own work.

Future research efforts should focus on whether task specific self-efficacy correlates with translators' success in performing a translation task – hence the importance of developing a solid psychometric instrument to measure translation self-efficacy. The results of such a line of study will be a valuable resource for both the training of student translators and the development of professional translators' expertise.

4. TOWARDS A SCALE OF TRANSLATORS' SELF-EFFICACY

Specific self-efficacy has been defined as an individual's belief in his or her competence to successfully resolve issues in specific situations (Salanova Soria and Martínez Martínez 2008). Nowadays, it is widely recognized that the nature and scope of self-efficacy can change not only throughout people's lives and at any one stage of an individual's life, but also in different situations and tasks (Bandura 1997; Pajares and Urdan 2006). In this sense, self-efficacy is specific to each particular domain of activity; hence the importance of developing and applying specific scales for specific domains, since specific self-efficacy measures have been found to be a more powerful predictor than general self-efficacy ones (Salanova Soria et al. 2004). Following Bandura (1997), efficacy beliefs need to be measured in terms of particularized judgments of capability, which can vary according to different realms of activity, different levels of task demands and under situational circumstances. In Pajares's (1996:6) words: "the optimal level of specificity of any efficacy assessment depends on the complexity of the performance criteria with which it is compared [but] judgements of competence need not be so microscopically operationalized that the assessment loses all sense of practical utility."

Even if self-efficacy has only recently attracted academic interest in our field of research, a methodological trend can already be detected: early works have turned to previously validated general self-efficacy scales. The most

widely used general scales in translation and interpreting studies are Baessler and Schwarzer's (1996) 10-item scale of General Self-efficacy (used in Mashady, Fatollahi and Pourgalavi 2015; Bolaños-Medina 2014; Jiménez Ivars, Pinazo Calatayud and Ruiz i Forés 2014); Schyns and von Collani's (2002) 20-item Occupational Self-efficacy Scale, measuring how confident people feel about the fact that by using their skills they will achieve successful results in their jobs (used in Atkinson 2012; Atkinson and Crezee 2014); Kim and Park's (2001) 28-item Academic Self-efficacy Scale, assessing an individual's conviction that they can successfully achieve a certain proficiency in a specific academic subject area (used in Lee 2014); and the 8-item New General Self-efficacy Scale (2001) of Chen, Gully and Eden (used in Bontempo and Napier 2011; Atkinson 2012). However, although all these scales were selected because of their relatively solid psychometric properties, they all share a common disadvantage: their lack of specificity.

On the other hand, although scarce, some efforts have been recently made in our discipline in order to construct a specific self-efficacy scale for translators and interpreters. Among them, Lee's Interpreting Self-efficacy Scale (2014) for undergraduate trainee interpreters (no level of study is specified) undoubtedly constitutes the most rigorous approach to date. Based on Albert Bandura's social cognitive theory and using as a starting point Kim and Park's (2001) Academic Self-efficacy Scale, Lee devised an initial pool of 63 items in the form of a self-report questionnaire, from a review of the literature on self-efficacy instruments and interpreting competence; later on, they were reduced to 21 items out of internal consistency, reliability and exploratory factor analyses in a sample of students from three universities in Seoul. They established acceptable concurrent validity, although with only one variable of interest.

Previous efforts in constructing specific self-efficacy scales in our field include Zareai (2010) and Jiménez Ivars, Pinazo Calatayud and Ruiz i Forés (2014) scales. Zareai (2010) devised a 26-item scale to study a virtual correlation between self-efficacy and translation quality; nonetheless, "these items were constructed without a comprehensive conceptual analysis of the domain of functioning in question (...) and without providing reliability and validity information, a criticism often levelled at a number of self-efficacy studies" (Lee 2014:186). As for Jiménez Ivars, Pinazo Calatayud and Ruiz i Forés (2014), they aimed to assess the impact of self-efficacy on the performance of trainee interpreters, and so they adapted the Spanish version of the Baessler and Schwarzer's (1996) scale of General Self-efficacy ad hoc, by respecting its original structure and by tailoring six out of its ten original items to account for the specificities for conference interpreting. Surprisingly, no statistical data allowing us to gauge the solidity of such an adapted scale are offered in their work.

Stemming from the fact that people with low computer self-efficacy, i.e. low confidence in successfully performing computer-related tasks, show a poor performance in these tasks (Marakas 1998), Isern-González and Bolaños-Medina's (2014) developed a preliminary Basic Computer Self-efficacy Scale for translators for didactic purposes. Such a scale differs from other computer self-efficacy psychometric instruments in the specificity and degree of depth of its contents, adapted to the required computer-related competences of translators. It was devised following Bandura's guidelines (2006) and a conceptual analysis mainly based on the basic guide of the computer course for first year students majoring in translation and interpreting at the University of Las Palmas de Gran Canaria. This instrument, which is currently under revision in the framework of a pilot study, could be useful to assess the potential influence of students' perceived computer self-efficacy on their learning achievement and on their use of Computer-Assisted Tools.

Finally, to our knowledge, no specific translation self-efficacy scale has been devised until now.

5. METHODS

5.1. Participants

A total of 74 (23 men and 51 women) undergraduate students in the fourth year of a Translation and Interpreting degree took part in this study. Students in their final university year were selected because they have already had an extensive formal training in translation. All of them took English as their first language and their age ranged between 20 and 38 years, mean age 22.51 years ($SD = 3.14$).

5.2. Scale Construction and Procedure

The process of developing the TSE questionnaire in the study followed as far as possible a standard, step-by-step procedure developed by Bandura (2006) for implementing valid and reliable self-efficacy measures. First, we determined the instruments' rationale and aim: the need for a specific translation self-efficacy psychometric scale to be used for research purposes in Translatology and for the educational assessment of student translators. Several steps were taken in this preliminary phase of instrumentation.

Then, a conceptual analysis of the relevant domain of functioning was performed, so that the scale could be targeted to factors that have a considerable impact on the translation process. In a field where there is no clear academic consensus about an ultimate theoretical model of translation itself to guide

applied avenues of research, nor even a coherent set of standardized translation tasks for research purposes (Muñoz Martín 2014) – which has been claimed as a precondition to study all factors involved in translation expertise – such an endeavor becomes rather complex. So, a meticulous review of the literature related to translating as a process, as a competence and as a complex task (Nord 1991, 1997; Kussmaul 1995; Kiraly 1995, 2000; Reiss and Vermeer 1996; PACTE 2003; Alves and Hurtado Albir 2010; Hurtado Albir 2011) was carried out, in an effort to ensure items accurately reflect this construct. We have operationally defined translation self-efficacy as a set of different simple tasks – with different levels of task demands – involved in the translation process, in order to provide subjects with a set of items so that they could rate the strength of their beliefs in their ability to execute the requisite activities (Bandura 2006). Thus, a draft TSE scale was instrumented, containing a preliminary pool of 52 items based on the literature review; consequently, three experts translators and university trainers and an expert of educational psychology evaluated it for content and face validity.

The preliminary pool of items dealt with diverse tasks encountered every day by professional translators, ranging from the analysis of text genre conventions to translation problem identification, from target text revision to terminology and documentation management, as well as stress control, to name but a few of the tasks covered. After all the participants had completed the TSE scale, together with the other three self-report questionnaires which had also been scheduled in order to check its validity – and which will be explained below –, the analysis of statistical data led researchers to refine the TSE scale into a 20-item instrument with better psychometric properties.

Five factors have been extracted. Communicative and Pragmatic Competence as a factor refers to the ability to use language appropriately in different social situations, and comprises several skills, such as analyzing both ST production and TT reception communicative situations, identifying the text genre of a given document or analyzing the skopos or the main function which is to be preserved in a translation assignment. Self-evaluation and learning are directly related to recognizing translation mistakes and building up expertise through the lessons to be learnt from every translation assignment. Problem-solving is one of the main competences of translators and involves identifying translation problems, generating and evaluating different alternative solutions and implementing appropriate decision-making in order to solve such problems. As for Client-related issues, this refers to the degree of interpersonal communication skills which translators should also possess so that they can deal with their clients adequately throughout the process, for instance, by justifying previously-made decisions or even by knowing how to successfully prove the quality of their work to a potential client. Finally, Strategic Competence entails

elaborating a global scheme of the translation assignment, and, at the same time, devising a general strategic plan in order to carry out a given translation assignment successfully by adapting to its specific working conditions in a flexible way.

As for the rating scale, a five-point Likert scale ranging from “cannot do at all” to “highly certain can do” was used, following Bandura’s guidelines for constructing self-efficacy scales (2006). Participants were asked to assess to what extent they felt capable of performing several translation-related tasks directly linked to translation competence through the following instruction: “Please rate how certain you are that you can perform the tasks discussed below involved in the translation process of a non-specialized text.”

In order to minimize response biases, several steps were taken: the self-report survey was completed without personal identification “to reduce social evaluative concerns” (Bandura 2006:314) and was not labeled; participants were told that all responses were to be treated in a confidential manner and that their answers would be recorded with a code number. Also, their cooperation was requested and the importance of their contribution was stressed. Students were asked to complete the questionnaires as honestly as possible. One researcher was present during the administration of the instruments and provided students with the necessary support to successfully complete them. Once they had finished completing the questionnaires, we explained the research goals to the students.

5.3. Other Measures

The following three constructs were also measured through self-report questionnaires given to participants in order to evaluate concurrent validity. Thus, assessing the relationship of the instrument under evaluation to other validated tests measuring theoretically related constructs, which have been previously applied to the same population sample, allowed test developers to determine concurrent validity.

5.3.1. General self-efficacy

The Spanish adaptation of the General Self-efficacy Scale (Sanjuán, Pérez and Bermúdez 2000) was used to assess general self-efficacy. The scale consists of 10 items rated on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Results have shown evidence of reliability ($\alpha = .91$).

5.3.2. Competence

To assess competence we used the competence subscale of the Spanish version of the Basic Psychological Need Scale in academic context (León et al. 2011). It consists of five items that were rated according to a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The reliability in the present study was $\alpha = .91$.

5.3.3. Intrinsic motivation

To measure intrinsic motivation, we used three dimensions from the Spanish version of the Academic Motivation Scale (Núñez, Martín-Albo and Navarro 2005), which assess intrinsic motivation toward accomplishment, intrinsic motivation toward knowledge, and intrinsic motivation toward stimulation, each one comprising 4 items. Participants rated their degree of agreement on a 7-point Likert-type scale ranging from 1 (does not correspond at all) to 7 (corresponds exactly). The global alpha for the variable intrinsic motivation was .95.

5.4. Data Analysis

The development of the final scale included four major steps. First, we conducted exploratory (EFA) and confirmatory (CFA) factor analyses. For these purposes, we used the software packages SPSS 21 and AMOS 21, respectively. The EFA and CFA are recommended when developing a new assessment instrument (Fabrigar et al. 1999). Second, we analyzed descriptive statistics and distributions of the items. Third, we examined the internal consistency of the scale. Finally, the concurrent validity of the five subscales of the TSE was evaluated through bivariate correlation with general self-efficacy, competence, and intrinsic motivation because we had hypothesized that there would be significant positive correlations among TSE's different factors and the abovementioned constructs. Correlational magnitude was considered using Cohen's (1988) criteria with .10 to .29 representing low, .30 to .49 moderate, and $>.50$ high correlations.

6. RESULTS

6.1. Exploratory Factor Analysis

We conducted an exploratory factor analysis to assess the underlying structure of the scale. We selected a direct oblimin rotation,¹ as all underlying domains were expected to correlate to represent an overall translation self-efficacy measure. The KMO measure of sampling adequacy² was .69 which is well above the minimum required level of .60 (Tabachnick and Fidell 2007). Bartlett's test of sphericity was used to check inter-correlation; in this case it was significant at $p < .001$. Thus, the sample is adequate and both indices supported the factorability of the data.

As for the initial analysis of the eigenvalues³ (excluding values < 1), it yielded 15 components, accounting for 75.75% of explained variance (respective percentages of variance explained by these 15 components were 19.89; 2.89; 2.62; 2.14; 1.90; 1.79; 1.71; 1.66; 1.56; 1.52; 1.43; 1.31; 1.23; 1.15; 1.11). However, Floyd and Widaman (1995) argued that the use of eigenvalues greater than 1.0 can lead researchers to overestimate the number of factors, which suggests identifying the meaningful factors using the scree plot technique.⁴ Considering the scree plot, the percentage of explained variance, and the theoretical relevance of the components, we extracted five factors, which would account for 50.77% of explained variance. We excluded loadings $< .40$. See *Table 1* for items and factor loadings. All items showed acceptable item-total correlations ranging from .41 to .68, and communality values $> .50$.

Table 1

Preliminary scale of Translation Self-efficacy with factor loadings for exploratory factor analysis and descriptive statistics of all the items

Item	M	SD	Skewness	Kurtosis	Factor loadings
Factor 1: Communicative / Pragmatic Competence					
1. Analyzing both ST production and TT reception communicative situations (t2)	3.51	.745	.259	-.266	.56
2. Identifying the text genre of a given document (t3)	4.00	.860	-.664	-.029	.58
3. Analyzing the <i>skopos</i> or the main function which will be required for a given TT (t7)	3.73	.727	-.412	.200	.52
4. Decision-making about the instrumental aspects of the translating task during the whole process (t22)	3.22	.896	-.093	-.040	.51

Table 1 (continued)

Factor 2: Self-evaluation and Learning					
Item	M	SD	Skewness	Kurtosis	Factor loadings
5. Recognizing translation mistakes as a whole (t33)	3.68	.862	-.500	.364	.73
6. Recognizing translation mistakes as far as ST comprehension is concerned (t34)	3.56	.882	-.005	-.673	.71
7. Recognizing translation mistakes as far as TT production is concerned (t35)	3.69	.905	-.701	.803	.73
8. Learning from every translation assignment (t48)	4.12	.843	-.659	-.243	.71
Factor 3: Problem-solving					
9. Identifying translation problems (t11)	3.74	.877	-.470	-.325	.57
10. Generating different alternative solutions for translation problems (t12)	3.49	.781	-.220	-.357	.56
11. Evaluating different alternative solutions for translation problems (t13)	3.40	.968	-.409	.078	.67
12. Appropriate decision-making in order to solve translation problems (t14)	3.40	.740	-.585	.597	.61
Factor 4: Client-related Issues					
13. Appropriate decision-making during the whole process as far as the client is concerned (t23)	3.38	.932	-.417	-.637	.53
14. Justifying previously-made decisions to the client (T38)	3.42	1.013	-.532	-.224	.69
15. Appropriately dealing with the client during the whole process (t43)	3.55	.862	-.699	.868	.46
16. Performing a translation test which successfully shows the quality of your work to a potential client (t51)	3.19	.961	-.583	.004	.50
Factor 5: Strategic Competence					
17. Elaborating a global scheme of the translation assignment, accounting for: communicative situation, <i>skopos</i> , deadlines, recipients' expectations, etc. (t8)	3.38	.855	.121	-.558	.63
18. Elaborating a general strategic plan from order a global scheme of the translation assignment in to carry out the translation successfully (t9)	3.11	.855	-.216	-.540	.47
19. Explaining the determinant aspects of a given translation assignment and the steps taken during the whole process (t37)	3.42	1.007	-.268	-.474	.42
20. Adapting to the working conditions of every translation assignment in a flexible way (t49)	3.73	.799	-.297	-.223	.51

6.2. Descriptive Statistics

Both univariate and multivariate normality of the items were analyzed. Univariate skewness and kurtosis were lower than the recommended thresholds (skew < 2 , kurtosis < 7 ; West, Finch and Curran 1995). In *Table 1* the descriptive per sample can be observed. The Mardia's Kurtosis multivariate coefficient for the sample was 29.46, $p < .001$ indicating the absence of multivariate normality.

6.3. Confirmatory Factor Analysis

We applied CFA to validate the factor structure of the 20-item TSE scale. The model included five latent variables: Communicative/Pragmatic Competence, Self-evaluation/Learning, Problem-solving, Client-related issues and Strategic Competence each with four observed variables. All latent variables were allowed to correlate. The factorial structure of the scale was assessed using the diagonal weighted least squares (DWLS) standard procedure and the polychoric correlation matrix⁵ as input because the items are categorical or discrete variables that were answered in a Likert-type scale (Flora and Curran 2004). This estimation method was used because it has no limitations regarding the size of the sample and does not require multivariate normality (Olatunji et al. 2007).

The fit for the model was evaluated with a combination of absolute and relative fit indices including the p value associated with the chi-square statistic. The chi-square statistic is an absolute model fit test and, as it is sensitive to sample size, the ratio of chi-square to degrees of freedom (χ^2/df) was used to judge the fit of the model (Jöreskog 1969). In a "perfect" model, this ratio is 1.0, and ratios less than 2.0 are typically considered acceptable (Carmines and McIver 1981). However, these absolute fit indices are affected by the sample size because they are based on simple variations on chi-square, so a combination of relative fit indices and the standardized root mean square residual⁶ (SRMR) was used to minimize this problem. As recommended by Hoyle (1995), the incremental fit index⁷ (IFI) and the comparative fit index⁸ (CFI) also were selected to assess model fit. IFI and CFI values above .90 are considered indicative of minimally acceptable model fit (Bentler 1995). Browne and Cudeck (1993) recommended using the root mean square error of approximation (RMSEA) as an index of closeness of fit. A RMSEA of .05 or less indicates that the model based on the sample data represents a "close population fit", whereas a value less than .08 indicates a "reasonable fit" (Jöreskog and Sörbom 1993).

Initially, a CFA was conducted for which no cross loadings were postulated and all factors were allowed to correlate freely. Results generally indicated a poor fit for the model, $\chi^2 = 237.23$, $df = 160$, $p < .001$, $\chi^2/df = 1.48$, $IFI = .89$, $CFI = .89$, $RMSEA = .08$ and $SRMR = .09$. Due to the inadequate fit of the model, we proceeded to respecify it. Firstly, we analyzed the modification indexes of the program that recommended the correlation of the measurement errors of items 23 and 43 from the subscale of Client-related issues, and items 48 and 49 from the subscales Self-evaluation/Learning and Strategic Competence. This resulted in two correlated residuals added to the model. With these additions, the fit indexes suggested that the model showed a better fit with respect to the data. In this analysis, the chi-square statistic was significant ($\chi^2 = 217.68$, $df = 158$, $p < .001$), and the fit indices were the following: $\chi^2/df = 1.37$, $IFI = .92$, $CFI = .92$, $RMSEA = .07$, $SRMR = .08$. All factor loadings were significant ($p < .001$) and ranged from .42 to .88. Thus, the results from the CFA supported the five-factor structure of the TSE.

6.4. Analysis of Internal Consistency Reliability

Alpha coefficients were calculated to evaluate the internal consistency of the scale and the five factors. The alpha value of the scale was .92 indicating an excellent reliability. Factors were associated with adequate internal consistency, with alpha coefficients equaling .73, .88, .83, .78, and .75 for Communicative/Pragmatic Competence, Self-evaluation/Learning, Problem-solving, Client-related issues and Strategic Competence, respectively. Therefore, the results showed acceptable and good levels of internal consistency for all factors.

6.5. Correlation Analysis

We tested construct validity further by examining three correlates of translation self-efficacy: general self-efficacy, competence, and intrinsic motivation. Pearson r correlations were computed between scores on the TSE subscales and measures of the three correlates. It is important to note that the internal consistency of the three measuring instruments was excellent. See *Table 2* for a summary of findings.

Concurrent validity with the five factors of the TSE scale indicated moderate and high correlations with each correlate. As hypothesized, the general self-efficacy has a positive and significant relationship ($p < .001$) with the 5 factors of the TSE scale with Pearson values between .38 and .45. Competence showed to be positively associated with the translation self-efficacy subscales with Pearson values .45 and .53 ($p < .001$). Finally, intrinsic

motivation showed positive and significant moderate correlations ($p < .001$) with the translation self-efficacy five subscales with values between .31 and .38. Thus, the correlations among TSE subscales and the three correlates supported the concurrent validity of the scale.

Table 2

Correlations between all variables and alpha above the diagonal

Scales	1	2	3	4	5	6	7	8
1. Communicative/ Pragmatic Competence	.73	.53**	.60**	.65**	.67**	.41**	.53**	.36**
2. Self-Evaluation/ Learning		.88	.52**	.50**	.49**	.43**	.47**	.38**
3. Problem-solving			.83	.56**	.52**	.38**	.59**	.38**
4. Client-related issues				.78	.61**	.45**	.51**	.38**
5. Strategic Competence					.75	.42**	.45**	.31**
6. General Self-efficacy						.91	.67**	.40**
7. Competence							.91	.38**
8. Intrinsic motivation								.95

** $p < .001$

7. FINAL CONSIDERATIONS

Although the need for a solid translation self-efficacy scale had already been suggested, previous attempts to create one were not rigorous enough in their methodology. The main goal of the current research was to develop a measure for assessing translators' self-efficacy and to determine its factor structure and psychometric properties in undergraduate students of fourth year in Translation. The results indicated that the TSE scale showed adequate levels of reliability and validity. With respect to the reliability of the scale, the results showed acceptable and good levels of internal consistency for all subscales. Regarding the validity of the scale, results from the CFA supported the five-factor structure of the TSE scale. Moreover, concurrent validity was confirmed by the correlations among TSE subscales and the three correlates: general self-efficacy, competence, and intrinsic motivation. Additionally, it has been our intention to address one of the major problems encountered by empirical-experimental research in our field: the lack of its own reliable instruments for data collection. Thus, by thoroughly describing the steps we followed to

develop the TSE scale, we have illustrated the process of creating psychometric instruments specifically designed for cognitive, empirical-experimental research in Translatology in order to promote more efforts in this direction within our discipline.

Nevertheless, there is still room for improvement. A higher level of consensus from the academic community about the theoretical basics of translation, and the wide variety of tasks and specific competences it involves, would undoubtedly enrich the conceptual analysis which represents the cornerstone of the development process of this kind of instrument. Meanwhile, perhaps a wider series of semi-structured interviews could be conducted with domain experts, both from the academic and the professional fields, in order to improve construct and face validity. Furthermore, more groundwork would be welcome so as to identify other related constructs which could be valuable to gauge the concurrent validity of a specific self-efficacy scale for translators.

Trying to generate a new scale for the same purpose, this time by phrasing items inspired by existing related measures – which could be relevant for the assessment of single concepts embedded in a so-called translation process model – instead, could also be worthwhile. Notwithstanding, empirical approaches to translation do not constitute a mature enough research domain so as to offer many specific psychometric instruments of interest for such an endeavor. Another exploratory path involves carefully selecting a more general self-efficacy scale and mimicking its skeleton as a point of departure for the development of a translation-specific self-efficacy instrument; but, by adapting vague items not precisely designed to measure the main object of study, we may run the risk of leaving out treasured information. A combination of the two abovementioned approaches could also be a sound way to face this challenge.

Despite the limitations of this preliminary study, mainly related to the lack of a measure of the stability of the scale – planned to be obtained through a test-retest analysis in the next stage of our research program – and to its restricted geographic representativeness and sample size, the implications of its findings are worth consideration. It not only shows a valid path of scale construction in detail, but it also provides a ready to use instrument which, although liable to be refined when applied to a larger population size, can already offer some useful data in the framework of translators' and translation students' self-efficacy research programs. Possible cases in point here could include its relationship with performance and expertise. Moreover, in the academic context, the TSE scale could also help translator trainers to assess students' translation self-efficacy beliefs; by doing so, it could contribute as well to design better programs which incorporate adaptations and modules particularly addressed to strengthen specific areas of self-efficacy beliefs among trainees. Finally, it

could also prove useful as an instrument for the assessment of self-efficacy conscious translator training courses.

Notes

¹ Rotation is a procedure in which the factors are rotated in an attempt to achieve a simple structure. The oblimin rotation method assumes that the factors or dimensions are correlated.

² The Kaiser–Meyer–Olkin (KMO) statistic is a measure of sampling appropriateness to assess the adequacy of the correlation matrix for factor analysis.

³ The eigenvalue is a measure of how much of the variance of the observed construct a given factor explains. Any factor with an eigenvalue ≥ 1 explains more variance than a single observed variable.

⁴ The scree plot technique is used in factor analysis to visually assess which dimensions or factors explain most of the variability in the data.

⁵ The polychoric correlation matrix is used in a factor analysis when the model includes ordinal variables.

⁶ SRMR is an absolute fit index for which a value of .06 or less indicates an excellent fit and a value of .08 or less indicates a good fit (Hu and Bentler 1999).

⁷ IFI was chosen because it tends to be consistent and not to vary in small samples and further, it indicates model fit improvements per degree of freedom in comparison to a baseline, independence model.

⁸ CFI was chosen because its range is bounded between 0 and 1 and it is easier to interpret than other fit indices (Hoyle 1995), and it indicates reductions in poor fit.

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