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Monitoring student self-efficacy in a translation company simulation

A multilevel model approach

Abstract

This observational study tests a survey instrument for measuring translation students' self-efficacy. A previously designed domain-specific self-efficacy scale is used to monitor the development of students' self-efficacy in a one-year-long translation company simulation course. With multilevel modelling, the trajectories of domain-specific self-efficacy for project management and translation-related tasks are contrasted with general self-efficacy. Differing trajectories of general and domain-specific self-efficacy measures illustrate the sensitivity of the domain-specific self-efficacy scale. At the same time, the results point to a need for more granular grades of difficulty in some translation-related items. In addition, students' initial levels of general self-efficacy were found to predict initial levels of domain-specific self-efficacy but not the rate of change. Finally, translation company simulation experience was found to be associated with a considerable rise in translation students' project management self-efficacy, a more moderate rise in translation-related self-efficacy, and a modest rise in general self-efficacy.

1 Introduction

Translation company simulations provide translation students with a learning environment where they set up translation organisations and produce translation services in a simulated translation market (Olvera-Lobo et al. 2008; Buysschaert et al. 2018; Kerremans/Egdom 2018; Kiraly/Massey/Hofmann 2018; Zappatore 2020). In a learning-by-doing approach, they aim to enhance translation graduates' employability by including situated, project-based and collaborative learning where students take on real-life tasks or real-life-like simulated tasks. They integrate various translation-related skills, management skills, transversal skills, and entrepreneurial skills, a combination that makes up a large part of the professional component in translator education curricula (Egdom et al. 2020). Such realistic self-organising learning environments are likely to enhance the students' domain-specific skills and their awareness of their capabilities.

The graduates' actual ability to carry out domain-specific tasks – conceptualised as skills, competence, or expertise – is central to their employability and success in their

future profession. However, the broad scope of translation company simulation activities, the collective nature of the participants' efforts, and the aspiration to avoid interruptions in the simulation's flow pose challenges for monitoring students' progress using the traditional construct of competence. Robinson, Olvera-Lobo and Gutiérrez-Artacho (2016: 338) describe the challenges and opportunities involved in assessing project-based cooperative and collaborative learning in a learning environment that simulates a translation workplace. Using a competence framework, they propose criterion-based self-assessment and peer-assessment of team products and team processes to complement evaluation by teachers. This study attacks the monitoring problem from a different angle and explores a complementary solution: survey-based measurement of students' self-efficacy (Bandura 1997).

While the bulk of contributions to translation pedagogy concentrate on developing and assessing domain-specific competences and transferable skills, the psychological side of graduates' employability has attracted less attention. This study focuses on the psychological aspect of employability and explores how translation students' self-efficacy changes during a one-year-long translation company simulation course. It introduces into translation pedagogy a survey-based method for measuring and a longitudinal multi-level modelling method for analysing trajectories of students' self-efficacy in collaborative project-based translation courses. To this end, the study tested a survey scale for measuring translation students' progress in two central domains of translation service provision: project management tasks and translation-related tasks; for the development of the scale, see Konttinen (2021). The sensitivity of the domain-specific self-efficacy instrument was tested by contrasting the students' domain-specific self-efficacy against their general self-efficacy (Schwarzer/Jerusalem 1995). In addition, the potential of general self-efficacy as a predictor of domain-specific self-efficacy was tested by modelling students' initial general self-efficacy as a conditioning variable.

Apart from the general aim of testing the domain-specific self-efficacy scale and the method of longitudinal multilevel modelling as instruments for translation company simulation pedagogy, this study addresses two specific research questions:

RQ1: How does students' domain-specific self-efficacy for project management and translation-related tasks and their general self-efficacy change over time in a one-year-long translation company simulation course?

RQ2: Is it possible to predict differences in students' initial level and rate of change in domain-specific self-efficacy based on their general self-efficacy at the beginning of the course?

The first research question explores the potential benefits of translation company simulation pedagogy. The second research question investigates the connection between general self-efficacy and domain-specific self-efficacy. Apart from their theoretical interest, the answers to the second research question may have practical implications, for example, when choosing a measure for use in learning analytics (Siemens 2013) or when assigning course participants into student companies.

The remainder of Section 1 discusses aspects of the self-efficacy construct and provides a brief outline of translation company simulation pedagogy. Next, Section 2 introduces the materials and methods of the study, and Section 3 presents the results. Finally, Section 4 discusses the results, followed by a conclusion in Section 5.

1.1 Self-efficacy and other constructs of self-perceived ability

A person's self-efficacy can be defined as their "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura 1997: 3). As self-efficacy can be conceptualised as perceived competence, it is related to other theoretical constructs that rely on the concept of competence, such as self-concept and self-esteem (Schunk/Pajares 2005). Self-efficacy and self-concept can be understood to "differ in the extent to which competence contributes to their composition" (Hughes/Galbraith/White 2011: 278). In this view, self-efficacy is associated with cognitive perceptions of competence, while self-concept combines affective perceptions and perceptions of competence.

As a primarily cognitive assessment of one's capability to perform a task, self-efficacy also differs from the construct of self-esteem: "Perceived self-efficacy is concerned with judgements of personal capability, whereas self-esteem is concerned with self-worth" (Bandura 1997: 11). Finally, "[s]elf-confidence is the degree to which an individual believes that he or she will be successful but does not define the abilities or skills that this belief is about" (Rowbotham/Schmitz 2013: 2). The principal difference between the constructs of self-confidence and self-efficacy can thus be seen in their generality: for a self-efficacy belief, the object's scope is narrower and more contextualised than for self-confidence.

Self-efficacy beliefs vary in three critical dimensions that need to be considered when designing self-efficacy scales: magnitude (task difficulty), strength (respondent's certainty of successful performance), and generality (the generalisability or transferability of the belief across tasks and situations) (Bandura 1997, 2006; Chen/Gully/Eden 2001).

While self-efficacy was initially understood to be a domain-specific and task-specific phenomenon, it has also been conceptualised more broadly as a "generalized sense of self-efficacy that refers to global confidence in one's coping ability across a wide range of demanding or novel situations" (Scholz et al. 2002: 243). Thus, self-efficacy can be seen as a psychological state that is related to one's capabilities in domain-specific tasks and contexts and is susceptible to change due to new experiences. Alternatively, it can be understood as a relatively stable trait-like conception of one's ability in general. Both state-like domain-specific self-efficacy for project management and translation-related tasks and trait-like general self-efficacy are explored in this study. While general self-efficacy is understood to be malleable (Eden/Aviram 1993), it is expected to be influenced by new efficacy information to a lesser degree than domain-specific self-efficacy (Smith et al. 2006). Furthermore, students' general self-efficacy is expected to influence how they perceive their ability to cope with new challenges. Thus, general self-efficacy may be a useful predictor of domain-specific self-efficacy.

In the context of translation pedagogy, maybe one of the most interesting features of the self-efficacy concept is a hypothesised cause-and-effect relationship between self-efficacy and behaviour, a virtuous circle where self-efficacious students are likelier to experience academic success, which leads to higher self-efficacy, and, again, to improved academic behaviour (Caprara et al. 2008; Wäschle et al. 2014: 105). Compared to low initial self-efficacy, stronger self-efficacy should thus lead to better performance which is accompanied by a higher rate of growth in self-efficacy. While this study can capture only the self-efficacy aspect of the cycle, a comparison of initial levels of general self-efficacy with the trajectories of domain-specific self-efficacy may provide some indication whether the virtuous cycle hypothesis is supported in the case of learning new tasks in the translation company simulation.

1.2 Self-efficacy and competence

Due to the flexibility of the self-efficacy concept, a self-efficacy belief can refer to many kinds of objects; for example, a person's perceived capability to achieve change in weight, exercise, smoking, or nutritional habits (Bandura 1997: 23). However, in the context of translation pedagogy, the most interesting object of a self-efficacy belief is competence, the "proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development" (European Communities 2008: 11). It should be noted that the above definition of competence also includes the notion of "proven ability", referring to externally-assessed competence, while a self-efficacy belief refers to self-assessed competence.

As self-efficacy beliefs can have an impact on, for example, a person's perseverance, cognitive efficiency, and resilience (Bandura 1997; Schwarzer/Warner 2013), a rise in the strength of a self-efficacy belief may influence performance even if the level of competence stays the same. This potential real-life impact of self-efficacy beliefs may explain why some competence models in translation studies conceptualise self-efficacy and related phenomena, such as self-concept and self-confidence, as a skill or a component in a competence model. For example, the multicomponent PACTE model (Albir et al. 2020) reserves a place for psycho-physiological components, and the TransComp model includes "the translator's psycho-physical disposition (intelligence, ambition, perseverance, self-confidence, etc.)" (Göpferich 2009: 23). In Kelly's (2005, 2007) competence model, equal status is granted to psycho-physiological competence and other competences.

In this vein, in his study on how psychological skill relates to freelancer translators' success in their work, Atkinson (2012: 1–2) used self-efficacy as one of three indicators of 'psychological skill' (the other two being the locus of control and attribution style) and characterised it as "the attitude towards new challenges in one's life or work". In this definition, the role of actual competence as the foundation of self-efficacy beliefs is less prominent, and the role of a psychological "can do" attitude (Prieto/Altmaier 1994: 483) comes to the fore.

In one of the earliest mentions of self-efficacy in translation and interpreting studies, Ivars and Calatayud listed self-efficacy as one of the coping strategies in managing stress and anxiety in interpreting and defined it as "the belief in one's capability to execute required actions and produce outcomes for a defined task" (Ivars/Calatayud 2001: 114) . Interestingly, the definition also included another dimension, namely "the real amount of personal resources" (Ivars/Calatayud 2001: 114) for the task at hand. In the context of interpreting or translation, such personal resources can be understood as competences or skills. Thus, in this view, self-efficacy refers to a combination of the belief in one's capability and the actual competence that underlies this capability.

In contrast, Haro-Soler and Kiraly (2019) elaborate on a terminological distinction made in Haro-Soler (2018, 2019) that separates the belief in one's capability and the capability itself. They propose that the terms self-efficacy belief and self-efficacy be given distinctive meanings, in opposition to current usage in the literature on educational psychology: "[T]he abilities that a person actually possesses to perform a specific task will be referred to […] as self-efficacy; whereas the individual's perception of these abilities will be referred to as self-efficacy beliefs" (Haro-Soler/Kiraly 2019: 261). While it is essential to recognise that there are two dimensions in the self-efficacy construct, this kind of terminological separation risks losing sight of the fact that it is precisely the combination of holding a self-efficacy belief and possessing the underlying ability that is a predictor of translation professionals' potential to carry out professional tasks. If self-efficacy is conceptually separated from the construct of self-efficacy belief, it would mean little more than a person's competence for a task.

To avoid conceptual and terminological confusion, this study follows established usage in educational literature. Thus, it employs the terms self-efficacy and self-efficacy belief to denote a person's perception of their abilities, while it refers to the object of a self-efficacy belief as competence.

While self-efficacy beliefs are subjective, they are likely to carry relevant information about a person's competence and potential performance that is not readily available to external assessors. Therefore, it might be tempting to use self-efficacy measures as a proxy for gauging changes in the level of competence. However, several conditions may create disparities between a self-efficacy belief, the underlying competence, and performance (Bandura 1997: 61), and the relationships between self-efficacy, competence, and performance remain an empirical matter to be studied separately for each context.

In translation and interpreting studies, few studies have explored the relationships between self-efficacy, competence, and performance. Based on a statistical analysis of a self-efficacy survey and graded course assignments, Doherty and Kenny (2014) conclude that self-efficacy measures and end-of-module assignments of a machine translation course do not measure the same thing but are complementary instruments for measuring learning. On the other hand, in the context of volunteer translation, O'Brien (2016) uses a self-efficacy questionnaire to gauge the effects of a simulation exercise for a crisis scenario in which translation was required. She finds that increases in self-efficacy, documented through an analysis of self-efficacy ratings, can be validated

through a holistic quality evaluation of translations produced by the participants. The most comprehensive study to date is Lee (2018), which explores the relationship between students' interpreting self-efficacy and their performance levels. Using self-efficacy data from a validated interpreting self-efficacy scale (Lee 2014) and teacher-ratings, peer-ratings and external ratings of students' interpreting performance on a statistically sound instrument for assessing undergraduates' consecutive interpretations (Lee 2015), he found a strong positive relationship between interpreting self-efficacy and performance.

1.3 Self-efficacy scales in translation studies

Bolaños-Medina and Núñez (2018) analyse previous efforts to construct domain-specific self-efficacy scales within translation and interpreting studies. Validated self-efficacy scales have been designed for interpreting by Lee (2014) and for translation by Bolaños-Medina and Núñez (2018), who use a standard step-by-step procedure presented in Bandura (2006) to develop a domain-specific scale for translators' self-efficacy, and by Yang, Cao and Huo (2021), who develop an instrument for measuring self-efficacy in student translators and language and non-language students in an English-as-a-foreign-language environment. While these self-efficacy scales are narrowly focused on one activity, a self-efficacy scale that is broader in scope and comprises both project management and a range of translation-related tasks was developed by Konttinen (2021). As the scope of translation company simulation activities covers the whole translation service provision workflow, this broader scale was used in this study.

1.4 Translation company simulations as drivers of self-efficacy

In the present job market for translation professionals, it is not enough to train translation students for a narrow translator role. Graduates of translation programmes may need to shoulder roles that incorporate project management, translation, and quality assurance tasks. In other words, translator education programmes need to develop "translation service providers" (Biel 2011). Such a broad view guides the pedagogy in simulated translation companies, for example, the Master's level 20 ECTS course Multilingual Translation Workshop (MTW) at the University of Turku, the setting of this study.

The pedagogical approach and practical organisation of the MTW were laid out in Konttinen et al. (2017) and in Konttinen, Salmi and Koponen (2021), and an overview of simulated translation company pedagogy was provided in Egdom et al. (2020). A brief outline of the pedagogy is presented here to provide context for the self-efficacy survey in this study:

- Self-organising student companies with a number of working languages carry out collaborative translation project workflows in projects initiated by actual or simulated clients. The students take on various roles required for running a translation company, for example, project manager, translator, reviser, proofreader, or post-editor.

- Teacher input is provided as brief lectures, ad hoc support for problem-solving, feedback on client communication and the products of translation processes, and facilitation of reflection in student company team discussions.
- Visits and consultations by translation professionals and representatives of translation companies provide insights into the realities of the translation market and in the translation industry.

The students' experience of the MTW can be expected to enhance their self-efficacy in several ways. Bandura (1997: 79–115) suggests that potential sources of self-efficacy include enactive mastery experiences, vicarious experiences provided by social models, verbal persuasions and allied types of social influences, and physiological and affective states. In the context of translator training, Haro-Soler (2017) investigates teaching practices that may enhance translation students' self-efficacy. They include positive and constructive feedback, a student-centred approach, scaffolding, continuous assessment, promotion of student participation, and supporting students' awareness of their level of performance. Finally, Haro-Soler (2019) discusses the role of vicarious learning in the translation classroom in enhancing students' self-efficacy beliefs and stresses the benefits of providing information about the careers of previous students, presentations by students on translation projects, and role play.

All of the above practices belong to the repertoire of the MTW course. Successful completion of collaborative translation projects is likely to provide mastery experiences in the various roles of the translation workflow. A large part of student company activities take place online, in Zoom calls, on translation management platforms, and over messaging apps such as Slack or Trello. Online collaboration in translation projects has been shown to enhance self-efficacy (Yang/Guo/Yu 2016). Feedback from simulated and authentic clients, teachers, and other students in the student company provide verbal persuasions. Visiting translation professionals and graduates of the translator education programme bring opportunities for vicarious learning. Finally, self-reflection as part of the course work presents opportunities for the students to understand their strengths and weaknesses. It can thus be expected that the strength of domain-specific self-efficacy may rise during the MTW translation company simulation.

2 Materials and methods

The data for this study were collected during a one-year-long translation company simulation, the MTW, at the University of Turku. The MTW is part of a Master's level translator education programme, described in detail by Konttinen, Salmi and Koponen (2021). In the spring term and autumn term 2020, the students responded to a self-efficacy questionnaire with 19 items. During a 17-week period with 14 weeks of active study in the spring term, the students completed the survey questionnaire on three occasions: at the beginning of the first course module in January (time point 0), in the middle of the module in March (time point 1), and at the end of the module in May (time point 2). After a 17-week

summer break, they completed the questionnaire twice in the 14-week-long autumn term: at the beginning of the second module in September (time point 3) and at the end of the module in December (time point 4).

As a potential ceiling effect (Taylor 2010) for some translation-related items was suspected in Konttinen (2021), which used a 5-point Likert type response scale, this study employed a broader 10-point response scale ranging from 1 (I strongly disagree) to 10 (I strongly agree). In addition, a separate "I don't know" option was included to be used when the meaning of the statement was not apparent to the respondent. In the statistical analysis, responses with "I don't know" were treated as missing data. The statements were available both in English and Finnish.

2.1 The respondents and the data

The data were collected using the online survey tool Webropol, with the consent of the respondents. The participants were informed that the data would be treated anonymously and not be used for determining course grades.

Of the 26 course participants, 24 students took part in the survey at least twice. Altogether, 23 students responded to the survey at the beginning of the course, providing a baseline of their initial general self-efficacy, a measure used to construct an independent variable INITGESE, discussed below. The responses of these 23 students are included in the statistical analysis. The median age of the respondents was 27. The age of the oldest respondent was 52, and the age of the youngest participant was 23. There were three male and 20 female respondents.

The resulting data set consists of 110 valid responses on general self-efficacy, 107 valid responses on project management self-efficacy, and 109 valid responses on translation-related self-efficacy, by 23 students at two or more time points. Due to "I don't know" responses on some of the items needed to aggregate a score for project management self-efficacy, three individual responses on project management self-efficacy were dropped as missing values, one at time point 0 and two at time point 1. For the same reason, one response on translation-related self-efficacy at time point 1 was dropped. Even though the data set is not fully balanced, that is, with the same number of time points for all participants, the robustness of the multilevel modelling method (see below) concerning missing measurements allows the use of all available responses in the analysis.

2.2 The measures

2.2.1 General self-efficacy

The items in the Generalized self-efficacy scale (Table 1) by Schwarzer and Jerusalem (1995) were used as a measure of General self-efficacy (GE SE). The dependent variable General self-efficacy was constructed as the mean of the scores for the items. The internal reliability of the subscale was analysed with Cronbach's alpha statistic. The va-

lues of Cronbach's alpha at time points 0, 1, 2, 3 and 4 were 0.944, 0.970, 0.952, 0.964 and 0.939, respectively, suggesting high internal consistency.

Statement
I can always manage to solve difficult problems if I try hard enough.
If someone opposes me, I can find the means and ways to get what I want.
It is easy for me to stick to my aims and accomplish my goals.
I am confident that I could deal efficiently with unexpected events.
Thanks to my resourcefulness, I know how to handle unforeseen situations.
I can solve most problems if I invest the necessary effort.
I can remain calm when facing difficulties because I can rely on my coping abilities.
When I am confronted with a problem, I can usually find several solutions.
If I am in trouble, I can usually think of a solution.
I can usually handle whatever comes my way.

Table 1: General self-efficacy items

2.2.2 Project-management self-efficacy

The mean score of four items in a subscale on project management self-efficacy was used to aggregate a Project management self-efficacy (PM SE) measure (Table 2). The item codes refer to the coding used in Konttinen (2021). Cronbach's alpha values for the total scale at time points 0, 1, 2, 3 and 4 were 0.886, 0.891, 0.892, 0.926 and 0.887, respectively, suggesting high internal consistency.

Item code	Statement
STRATOP1	I would be able to set up a translation organisation (e.g., a translation company/department).
STRATOP2	I am able to lead a translation organisation (e.g., a translation company/department).
CORGEN1	I am able to work as a project manager in translation projects.
CORPOS2	I am able to keep account of the receivables and payables of a translation company.

Table 2: Project management self-efficacy items

The items represent an expansive view of a project manager's responsibilities, as many of the activities take place at the level of the translation organisation, not within an individual translation project. There are three reasons for this. First, graduates of a Master's level translator education programme should be able to work as independent freelancers who need to take care of administrative and management tasks and as project managers who manage individual translation projects with numerous participants. Second, the graduates should be able to take up executive positions in translation organisations, at least later in their careers. Third, exploratory and confirmatory factor analysis reported in Konttinen (2021) showed that the four items on self-efficacy for organisational planning and execution, leadership, project management, and financial tasks adequately represent a dimension that comprises a wide range of more detailed project management tasks.

2.2.3 Translation-related self-efficacy

The mean score of five items in a subscale was used for a Translation-related self-efficacy (TR SE) measure (Table 3). As a departure from the concise scale reported in Konttinen (2021), an additional item on post-editing was included in the Translation-related self-efficacy score, as post-editing was considered to have gained established status as a translation-related skill in the translator education programme at the University of Turku; for a description of the status of post-editing in the programme, see Konttinen, Salmi and Koponen (2021). Cronbach's alpha values for the total scale at time points 0, 1, 2, 3 and 4 were 0.903, 0.871, 0.874, 0.845 and 0.879, respectively, suggesting high internal consistency.

Item code	Statement
CORPRO1	I am able to work as a translator in a translation project.
CORPRO2	I am able to work as a post-editor in a translation project.
CORPRO3	I am able to revise translations in a translation project.
CORPRO4	I am able to work as a proofreader in a translation project.
CORPRO5	I am able to assess the quality of a translated text.

Table 3: Translation-related self-efficacy items

2.2.4 The variable TIME

To model growth in the above three dependent variables, the square root of the variable TIME (time points 0, 1, 2, 3 and 4), centred at the beginning of the MTW, was used as the independent variable. This transformation of the time variable "corrects" nonlinearity in longitudinal data; see, for example, Singer and Willett (2003: 207–212). The linearity assumption of multilevel linear modelling was checked visually using ordinary least squares fitted trajectories of the self-efficacy categories, and two alternatives for representing TIME were tested. Overall, the square root of TIME performed slightly better than the untransformed version. This may be partly due to deceleration in the rate of change when self-assessments approach a ceiling set by the maximum score of 10. In Section 3, when presenting the final results in a graph, TIME is transformed back to its original form by taking a square of TIME, rendering slightly curved trajectories (Fig. 1).

2.2.5 Initial general self-efficacy (INITGESE)

A dichotomous independent variable for initial General self-efficacy (INITGESE) was constructed by dividing the 23 responses on General self-efficacy at time point 0 into two groups, using the median (6.6) as the cut-off point. The 11 responses below the median were labelled Low INITGESE and assigned the value 0, while the 12 responses at or above the median were labelled High INITGESE and assigned the value 1. INITGESE is used as an individual-related time-invariant variable and only for modelling Project management self-efficacy and Translation-related self-efficacy.

2.3 Longitudinal multilevel modelling

Longitudinal multilevel modelling (MLM) was used to analyse the change in the self-efficacy categories. Longitudinal multilevel models are hierarchical, with two or more nested levels, and measurements (*j*) are nested within individuals (*i*). For discussions of the method and instructions on its use, see, for example, Singer and Willett (2003) and West, Welch and Galecki (2014). An accessible demonstration of the MLM method can be found, for example, in Kwok et al. (2008).

This study uses a "step-up strategy" for model building (West/Welch/Galecki 2014: 40), starting with an unconditional means-only level-1 model, adding a slope to arrive at an unconditional growth model, and, for the domain-specific models, finally introducing a time-invariant variable INITGESE as a level-2 condition. The primary interest lies in the fixed effects that describe average trajectories, but also random effects are studied to gauge the amount of individual variation around the trajectories. The full model is presented here (Equations 1–4), with Project management self-efficacy as an example. For each self-efficacy measure (Tables 6, 7 and 8), all the steps leading to the full model were tested.

The full model, in two levels, can be expressed in the following form:

$$PM\,SE_{ij} = \beta_{0i} + \beta_{1i}TIME_{ij} + \varepsilon_{ij} \quad (1)$$

$$\beta_{0i} = \gamma_{00} + \gamma_{01}INITGESE_i + \zeta_{0i} \quad (2)$$

$$\beta_{1i} = \gamma_{10} + \gamma_{11}INITGESE_i + \zeta_{1i}, \quad (3)$$

where we assume that

$$\varepsilon_{ij} \sim N(0, \sigma_\varepsilon^2) \text{ and } \begin{bmatrix}\zeta_{0i}\\ \zeta_{1i}\end{bmatrix} \sim N\left(\begin{bmatrix}0\\0\end{bmatrix}, \begin{bmatrix}\sigma_0^2 & \sigma_{01}\\ \sigma_{10} & \sigma_1^2\end{bmatrix}\right). \quad (4)$$

A level-1 submodel (Equation 1) describes how each individual's self-efficacy changes. The trajectory of each individual (level-1) is described by two parameters: an individual-specific intercept (β_{0i}) and an individual-specific linear growth parameter, or slope (β_{1i}). β_{0i} is the estimated self-efficacy score for the *i*th individual at the first measurement when $TIME_{ij}$ equals 0. β_{1i} is the average change in the score between time points for the *i*th individual. The error term (ε_{ij}) represents the portion of individual *i*'s outcome that is unpredicted at time point *j*.

A level-2 submodel (Equation 2 for the intercept of the level-1 model and Equation 3 for the slope of the level-1 model) describes the variability in the individual growth curves and relates interindividual differences to a predictor (INITGESE). At level-2, γ_{00} is a grand mean intercept, and γ_{10} is a grand mean slope of the overall regression line. The coeffi-

cients ζ_{0i} and ζ_{1i} are deviations of the individual-specific scores from the grand mean intercept and slope, respectively.

The following assumptions (Equation 4) are made for the residuals: the level-1 residual ε_{ij} is assumed to be independent, homoscedastic, that is, constant across the time points, normally distributed, and has a mean of 0. The level-2 residuals ζ_{0i} and ζ_{1i} are assumed to conform to a multivariate normal distribution and have a mean of 0. Normality in the distributions of raw residuals was inspected visually using normality plots, and the homoscedasticity assumption was evaluated by plotting raw residuals against the predictor. The assumptions were found to be met.

An alternative composite form of the full model (Equation 5) combines level-1 and level-2 in one equation. It comprises a fixed part (first set of square brackets) and a random part (second set of square brackets).

$$PM\,SE_{ij} = \left[\gamma_{00} + \gamma_{01} INITGESE_i + \gamma_{10} TIME_{ij} + \gamma_{11} INITGESE \times TIME_{ij}\right] + \left[\zeta_{0i} + \zeta_{1i} TIME + \varepsilon_{ij}\right] \quad (5)$$

While the intercept γ_{00} and slope γ_{10} in the fixed part, together with the predictor $INITGESE_i$, determine the average change trajectory, the residuals, ζ_{0i} and ζ_{1i}, in the random part allow an individual *i*'s trajectory to vary around this average. Further, the level-1 residuals, ε_{ij}, allow the individuals' data to be scattered randomly about the trajectory (Singer/Willett 2003: 83).

The modelling steps were conducted using the IBM SPSS Statistics 27 software, with maximum-likelihood estimation. After testing with unstructured (UN) covariance structure as a baseline, the first-order autoregressive structure with homogenous variances (AR1) was used for modelling. The band-diagonal shape of AR1 renders it potentially suitable for modelling growth processes (Singer/Willett 2003).

Intra-class correlations (ICC) were calculated (Equation 6) for the unconditional means models in each self-efficacy category. The ICC describes the proportion of the between-individuals variance of the total variance.

$$ICC = \frac{\sigma_0^2}{\sigma_0^2 + \sigma_\varepsilon^2} \quad (6)$$

3 Results

3.1 Descriptive statistics

Descriptive statistics of the three self-efficacy categories (Table 4) show an overall increase in the mean self-efficacy scores during the MTW course, except for time point 3. A possible explanation for the slight dip, which is discernible even when comparing only students who responded both at time point 2 and 3, may be the impact of a 17-week-long summer break between the two time points.

	GE SE					PM SE					TR SE				
	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4
Valid	23	21	23	21	22	22	19	23	21	22	23	20	23	21	22
Missing	0	0	0	0	0	1	2	0	0	0	0	1	0	0	0
Mean	6.22	7.34	8.20	7.91	8.54	3.30	6.04	7.13	6.79	7.66	6.22	7.78	8.50	8.36	8.86
Std. Deviation	1.69	1.72	1.25	1.15	0.88	1.86	1.95	1.65	2.12	1.66	1.76	1.41	0.87	1.08	0.95
Skewness	-0.48	-0.76	-0.91	-0.41	-0.42	0.87	-0.12	-0.89	-1.07	-1.86	-0.94	-0.91	-1.24	-2.35	-1.07
Std. Error of Skewness	0.48	0.50	0.48	0.50	0.49	0.49	0.52	0.48	0.50	0.49	0.48	0.51	0.48	0.50	0.49
Kurtosis	-0.12	0.76	0.55	-0.28	-0.31	0.83	0.15	1.46	1.37	4.65	0.74	0.21	1.76	7.07	1.29
Std. Error of Kurtosis	0.93	0.97	0.93	0.97	0.95	0.95	1.01	0.93	0.97	0.95	0.93	0.99	0.93	0.97	0.95
Minimum	2.90	2.90	5.20	5.50	6.60	1.00	2.00	2.50	1.00	2.25	1.60	4.80	6.00	4.60	6.20
Maximum	9.10	9.90	9.90	9.90	10.00	8.25	9.75	9.75	10.00	9.75	9.20	9.80	9.80	9.40	9.80

Table 4: Descriptive statistics of the responses at time points 0, 1, 2, 3 and 4 on three self-efficacy categories: General self-efficacy (GE SE), Project management self-efficacy (PM SE), and Translation-related self-efficacy (TR SE)

Except for Project management self-efficacy at time point 0, all self-efficacy measures are right-skewed; that is, there are more responses at the higher end of the scale, counterbalanced by a smaller number of relatively low scores.

At the beginning of the MTW, the mean scores for both General self-efficacy and Translation-related self-efficacy start at a relatively high level (6.22). At the end of the MTW, Translation-related self-efficacy reaches the highest mean score (8.86) of all three categories, with decreasing standard deviation across time points. The growth rate in General self-efficacy is slower than in Translation-related self-efficacy, but it reaches a high mean score of 8.54. Project management self-efficacy differs from the two other categories in that the mean score starts at a low value (3.30) and grows fastest of all three categories throughout the MTW course, reaching a mean score of 7.66 at time point 4.

The reduction in variability of Translation-related self-efficacy towards the end of the course suggests that it may be approaching a ceiling imposed by the theoretical maximum of 10 in the response scale. A closer look at the items used to aggregate the dimension Translation-related self-efficacy (Table 5) shows that the item that is the strongest driver of the mean score towards the ceiling is the item CORPRO1 “I am able to work as a translator in a translation project.” The mean of CORPRO1 reaches the level of 9 already at time point 1 and has little room to grow further. A similar ceiling effect was reported for CORPRO1 in Konttinen (2021), and it was hoped that in this study, a wider response scale would remedy the problem. However, there seems to be a tendency to use the whole scale range, possibly due to the large difference between the students’ self-efficacy for translation-related items and their self-efficacy for project management items. As for the other items in the translation-related subscale, also CORPRO3 and CORPRO4 reach a mean score above 9 (9.2 and 9.1, respectively) but not before time point 4.

	CORPRO1					CORPRO2					CORPRO3					CORPRO4					CORPRO5				
	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4
Valid	23	20	23	21	22	23	21	23	21	22	23	21	23	21	22	23	21	23	21	22	23	21	23	21	22
Mean	7.4	9.1	9.3	9.2	9.4	5.8	7.0	8.3	8.0	8.8	6.0	8.1	8.8	8.8	9.2	6.0	7.8	8.5	8.4	9.1	5.8	7.0	7.6	7.4	7.9
Std. Deviation	1.8	1.1	0.8	1.3	1.2	2.1	2.1	1.1	1.6	1.2	2.1	1.6	1.0	1.4	1.2	2.3	1.7	1.1	1.3	1.1	2.1	1.9	1.2	1.3	1.1
Minimum	2	6	7	5	5	2	1	6	3	6	2	5	7	4	5	1	4	6	5	7	1	4	4	5	6
Maximum	10	10	10	10	10	9	10	10	10	10	9	10	10	10	10	10	10	10	10	10	9	10	9	9	9

Table 5: Descriptive statistics of survey items in the subscale TR SE

3.2 Modelling General self-efficacy

As a baseline, an unconditional means model (Model 1.0 in Table 6) for General self-efficacy was fitted first. The grand mean of the initial status for all individuals across the time points is 7.661. The proportion of variance in initial status (1.044) and the within-person variance (1.435) at level-1 is of particular interest here as they are used for calculating the ICC (0.421). The ICC shows that about 42 % of the variation in General self-efficacy takes place between individuals. There would thus be some room to introduce level-2 conditions to predict a portion of the between-individual differences. However, as the primary role of the General self-efficacy measure is to provide a baseline for interpreting the trajectories of the domain-specific dependent variables Project management self-efficacy and Translation-related self-efficacy, no level-2 predictors were used for General self-efficacy.

Next, an unconditional growth model for General self-efficacy (Model 1.1) was fitted with a random slope. In Model 1.1, the grand mean at time point 0 is high (6.271), but the average rate of growth (1.146) is relatively low. All fixed effects and random components of Model 1.1 are statistically significant ($p < 0.05$).

In addition to the statistical significance of the components in the models, three goodness-of-fit statistics (Singer/Willett 2003), likelihood ratio test of Deviance, the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC), were used as criteria for choosing the final model. All three statistics favour Model 1.1 over Model 1.0, and Model 1.1 was chosen.

GE SE		Parameter	Model 1.0	Model 1.1
Fixed effects				
Initial status β0i	Intercept	γ_{00}	7.661***	6.271***
			(0.242)	(0.261)
Rate of change β1i	Intercept	γ_{10}		1.146***
				(0.243)
Variance components				
Level-1	Within-person	$\sigma_\epsilon 2$	1.435***	.516***
			(0.217)	(0.098)
Level-2	In initial status	σ_0^2	1.044**	
			(0.398)	
	Intercept + sqrt time (AR1 diagonal)	σ^2		1.137**
				(0.380)
	AR1 rho	ρ		-0.458*
				(0.190)
Goodness-of-fit				
	Deviance		386.3	334.7
	AIC		392.3	344.7
	BIC		400.4	358.2

Table 6: Multilevel models for General self-efficacy; * p < 0.05; ** p < 0.01; *** p < 0.001; Std. error in parentheses

3.3 Modelling Project management self-efficacy

The first model fitted was the unconditional means model for Project management self-efficacy (Model 2.0 in Table 7). The ICC for Project management self-efficacy is 0.275; that is, about 28 % of the variation in Project management self-efficacy is situated between individuals.

The next step was to fit an unconditional growth model for Project management self-efficacy (Model 2.1). The fixed effects were statistically significant, the initial status was 3.586, and the rate of change was 2.150. As for the level-2 variance components, AR1 rho was not significant at the p < 0.05 level (p = 0.98), while the two other components were significant (p < 0.01).

In Model 2.2, the predictor INITGESE was added to condition initial status. In the model, a higher level of INITGESE raises the initial level of Project management self-efficacy at time point 0 (2.871) by 1.331. All fixed effects and random effects were significant at the level p < 0.05, except for AR1 rho, which was significant only at the level p = 0.05.

To test the effect of INITGESE on the rate of growth in Model 2.3, INITGESE was fitted to condition both the initial status and the rate of change. In this model, INITGESE

as a predictor of the rate of change is not significant (p = 0.652), and INITGESE as a predictor of initial status is significant only at the level p = 0.057.

PM SE		Parameter	Model 2.0	Model 2.1	Model 2.2	Model 2.3
Fixed effects						
Initial status β_{0i}	Intercept	γ_{00}	6.176***	3.586***	2.871***	2.955***
			(0.328)	(0.322)	(0.399)	(0.439)
	INITGESE	γ_{01}			1.331*	1.373
					(0.493)	(0.685)
Rate of change β_{1i}	Intercept	γ_{10}		2.150***	2.162***	2.033***
				(0.295)	(0.269)	(0.390)
	INITGESE	γ_{11}				0.246
						(0.539)
Variance components						
Level-1	Within-person	σ_ϵ^2	4.123***	0.845***	0.863***	0.862***
			(0.635)	(0.160)	(0.167)	(0.177)
Level-2	In initial status	σ_0^2	1.564*			
			(0.738)			
	Intercept + sqrt time (AR1	σ^2		1.620**	1.275*	1.273*
	diagonal)			(0.571)	(0.503)	(0.501)
	AR1 rho	ρ		-0.387	-0.449	-0.451*
				(0.234)	(0.230)	(0.228)
Goodness-of-fit						
	Deviance		478.5	375.2	367.4	367.2
	AIC		484.5	381.2	379.4	381.2
	BIC		492.5	389.2	395.4	399.9

Table 7: Multilevel models for Project management self-efficacy; * p < 0.05; ** p < 0.01; *** p < 0.001; Std. error in parentheses

In comparing likelihood ratio tests of the Deviance statistics, Model 2.2 performs significantly better than the nested simpler models 2.0 and 2.1, while its Deviance statistic is not significantly weaker than that of Model 2.3. Also, the goodness-of-fit index AIC presents Model 2.2 with the best score. The BIC index that in larger samples favours parsimony even more than the AIC (Singer/Willett 2003: 121) shows the lowest score for the unconditional growth model 2.1 but also presents a somewhat more favourable value for Model 2.2 than for Model 2.3. Based on a consideration of all indicators, Model 2.2 was chosen as the preferred model, as it is the only conditional model with significant values for both fixed effects and random effects and is supported by the comparison of Deviance statistics and by AIC.

3.4 Modelling Translation-related self-efficacy

For Translation-related self-efficacy (Table 8), the unconditional means model (Model 3.0) was fitted first. The ICC for Translation-related self-efficacy is 0.266; approximately 27 % of the variation in Translation-related self-efficacy is situated between individuals.

An unconditional growth model for Translation-related self-efficacy (Model 3.1) was fitted next. In the fixed effects, the initial status is 6.330, and the rate of change is 1.330. All fixed effects and random effects are significant.

In the next model, 3.2, the predictor INITGESE was added to the growth model to condition the initial status. Again, all fixed effects and random effects are significant.

Finally, Model 3.3 includes INITGESE as a predictor for both initial status and rate of growth. However, INITGESE as a predictor of the rate of change is not significant, while all other components are significant.

In comparing Deviance statistics, Model 3.2 performs significantly better than the other nested models, and the goodness-of-fit indices BIC and AIC present it with the best score. As it also is the only conditional model with significant values for all components, Model 3.2 was chosen as the final model.

TR SE		Parameter	Model 3.0	Model 3.1	Model 3.2	Model 3.3
Fixed effects						
Initial status β_{0i}	Intercept	γ_{00}	7.939***	6.330***	5.789***	5.675***
			(0.210)	(0.247)	(0.295)	(0.329)
	INITGESE	γ_{01}			1.033**	1.250**
					(0.364)	(0.449)
Rate of change β_{1i}	Intercept	γ_{10}		1.330***	1.329***	1.420***
				(0.228)	(0.109)	(0.297)
	INITGESE	γ_{11}				-.174
						(0.413)
Variance components						
Level-1	Within-person	σ_ε^2	1.760***	0.509***	0.519***	0.520***
			(0.267)	(0.098)	(0.098)	(0.104)
Level-2	In initial status	σ_0^2	0.640*			
			(0.299)			
	Intercept + sqrt time	σ^2		0.981**	0.762*	0.754**
	(AR1 diagonal)			(0.348)	(0.308)	(0.307)
	AR1 rho	ρ		-0.538**	-0.588***	-0.586***
				(0.172)	(0.165)	
Goodness-of-fit						
	Deviance		393.9	323.3	313.9	313.7
	AIC		399.9	333.3	325.9	327.7
	BIC		408.0	346.7	342.0	346.5

Table 8: Multilevel models for Translation-related self-efficacy; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; Std. error in parentheses

3.5 Fixed effects models of self-efficacy in the MTW

Filling in the estimates for the average trajectories of self-efficacy presented in Tables 6, 7 and 8, the selected models for General self-efficacy (GE SE), Project management

self-efficacy (PM SE), and Translation-related self-efficacy (TR SE) can now be summarised in Equations 7, 8, and 9. The focus here is the overall development in the self-efficacy categories, and only the fixed effects that describe average trajectories during the MTW course are included.

$$\text{GE SE} = 6.271 + 1.146(TIME)_{ij} \tag{7}$$

$$\text{PM SE} = 2.871 + 2.162(TIME)_{ij} + 1.331(INITGESE)_{i} \tag{8}$$

$$TR\ SE = 5.789 + 1.329(TIME)_{i} + 1.033(INITGESE)_{i} \tag{9}$$

The results are illustrated in Figure 1. To use growth models for linear change despite possible nonlinearity in the growth curves, the variable TIME was transformed by taking its square root. This transformation is reversed by taking the square of TIME at all time points while preserving the predicted scores on the y-axis. Fitting a quadratic function through the resulting coordinates renders slightly curved change trajectories.

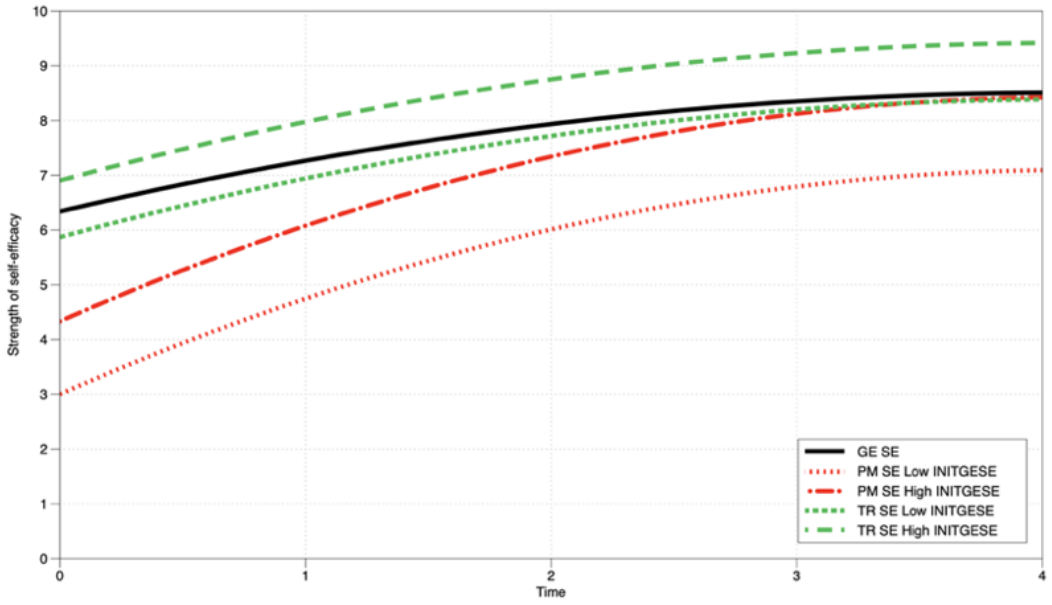

Figure 1: Change trajectories of self-efficacy in the categories General self-efficacy, Project management self-efficacy, and Translation-related self-efficacy

In Figure 1, General self-efficacy (GE SE) starts at a relatively high initial level (6.271) and increases at a low rate (1.146). Translation-related self-efficacy (TR SE) for students with low INITGESE starts at a relatively high level (5.789) and increases at the second-highest rate (1.329). The initial level of TR SE is influenced by the initial level of General self-efficacy (INITGESE) so that those who belong to the group with the higher level of initial General self-efficacy (High INITGESE) have a 1.033 unit higher initial level of Translation-related self-efficacy than those in the group with Low INITGESE. Project

management self-efficacy (PM SE) for students with Low INITGESE starts at a low level (2.871) and grows at the highest rate (2.162). The initial level of PM SE is influenced even more by the initial level of General self-efficacy than Translation-related self-efficacy so that those in the group with High INITGESE have a 1.331 unit higher initial level of Project management self-efficacy than those in the group with Low INITGESE.

4 Discussion

The study's overall objective was to test the suitability of the self-efficacy monitoring instrument and the analysis method. The results show a positive association between the length of time spent in the simulation and the strength of the students' self-efficacy beliefs. While new efficacy information – for example, failure to accomplish a task or negative feedback – can also lead to weakening perceptions of self-efficacy, the positive relationship between time and strength of self-efficacy was expected, as the MTW includes pedagogical elements that are not only likely to enhance students' self-efficacy but also strengthen their competences. Thus, the overall growth in the self-efficacy measures – but also the slight dip in self-efficacy after the summer break – follow a pattern that can be explained by students' participation in the simulation.

This observational study cannot claim a direct causal link between students' exposure to simulation pedagogy and a rise in their self-efficacy. Some part of the changes may, for example, be due to other courses in the programme, concurrent working-life experiences, or other influences. Despite this limitation, however, the results demonstrate that the tested research instrument and the analysis method are suitable for monitoring self-efficacy in a self-organising learning environment and capable of producing interpretable results.

A further limitation of this study was the potential ceiling effect in the subscale Translation-related self-efficacy (primarily caused by the item CORPRO1 "translation"). As the students in the MTW course are Master's level students who have already taken several translation courses, the level of their translation competence and self-efficacy for translation can be expected to be relatively high at the beginning of the MTW. Another factor that may have contributed to the ceiling effect is the long duration of the MTW course.

An attempt was made in this study to remedy the possible ceiling effect in the scale reported in Konttinen (2021) by replacing the 5-point response scale with a 10-point scale. However, this solution was unsuccessful for the translation item CORPRO1. While it is preferable to make the self-efficacy scale as concise and straightforward as possible in order to minimise attrition in a multi-wave longitudinal survey, to limit ceiling effects, it may be advisable to adjust the magnitude (task difficulty) and generality of the Translation-related self-efficacy subscale by adding translation-related items representing grades of difficulty and levels of specificity.

As for RQ1, the results show that the students' General self-efficacy, Project management self-efficacy and Translation-related self-efficacy increased during the one-year-long MTW course. The students' General self-efficacy started at a relatively high level and experienced the smallest growth. This was expected, as a person's General self-efficacy is conceptualised as a "relatively stable, trait-like, generalized competence belief" (Chen/Gully/Eden 2004: 376) that is continuously tested in everyday situations. Both domain-specific state-like self-efficacy measures grew faster than General self-efficacy. Translation-related self-efficacy started at the same level as General self-efficacy but grew to reach the highest score of all three self-efficacy categories. While the students' familiarity from earlier courses with translation-related activities may explain the relatively high initial level, the results show that even this high level can rise during a translation company simulation. On the other hand, project management tasks are introduced in the MTW as a new skill set not included in other courses in the translator education programme. The students will thus have both developed their competence in project management and processed a large amount of new efficacy information on their ability to take care of project management tasks. As expected, self-efficacy for project management showed the fastest growth rate.

A comparison of the trajectories of General self-efficacy and the domain-specific self-efficacy measures shows that the domain-specific self-efficacy measures can tap into more detailed information about students' development than a global self-efficacy measure. Global self-efficacy measures are convenient to use, as there is no need to tailor them for each specific context. However, the differing trajectories of the three self-efficacy measures demonstrate that a global self-efficacy scale is not sensitive enough to replace domain-specific self-efficacy scales, as it misses relevant information about students' experience in a translation company simulation environment.

As for RQ2, a higher level of initial General self-efficacy, INITGESE, was associated with a higher initial level of Project management self-efficacy and Translation-related self-efficacy. This result supports the assumption that a higher level of General self-efficacy enhances one's assessment of the likelihood of success regardless of domain.

It can be hypothesised that strong general self-efficacy entails more risk-taking, more resilience in the face of difficulty, faster development of domain-specific competence, and, in turn, a rise in domain-specific self-efficacy. However, no significant relationship was found between the initial level of General self-efficacy and the growth rate in either domain-specific self-efficacy category. Thus, this result did not support that stronger general self-efficacy would lead to a virtuous circle of perceived self-efficacy and ever-higher levels of domain-specific competence and self-efficacy.

5 Conclusion

The finding that the initial level of General self-efficacy is a predictor of the initial level of Project management self-efficacy and Translation-related self-efficacy has a practical application when setting up translation company simulation courses, as the level of initial

General self-efficacy can be used as a criterion for allocating students into student companies. Other practical applications for all tested self-efficacy measures include their use as a benchmarking instrument when changes are planned in the pedagogy or the organisation of the course, or as instruments for learning analytics.

Maybe the most interesting future use of the self-efficacy instrument and the multilevel modelling method tested in this study is for investigating in longitudinal studies the relationships between various measures of self-efficacy and externally-assessed competence. While the results of this study cannot provide insight into the relationships between self-efficacy and actual competence, the methods and the measures tested here can be used to explore such connections.

Data Availability Statement

The data that support the findings of this study are openly available in Open Science Framework (OSF) at https://doi.org/10.17605/OSF.IO/6JBM2

References

Albir, Amparo Hurtado; Anabel Galán-Mañas, Anna Kuznik, Christian Olalla-Soler, Patricia Rodríguez-Inés, Lupe Romero (2020): "Translation competence acquisition. Design and results of the PACTE group's experimental research." *The Interpreter and Translator Trainer* 14 [2]: 95–233 – https://doi.org/10.1080/1750399X.2020.1732601 (31 October 2021)

Atkinson, David (2012): *Freelance translator success and psychological skill: A study of translator competence with perspectives from work psychology.* Unpublished doctoral dissertation. Auckland: University of Auckland – https://researchspace.auckland.ac.nz/bitstream/handle/2292/18723/whole.pdf?sequence=2 (31 October 2021)

Bandura, Albert (1997): *Self-efficacy: The exercise of control*. New York: W. H. Freeman

Bandura, Albert (2006): "Guide for constructing self-efficacy scales." Frank Pajares, Tim Urdan (eds): *Self-efficacy beliefs of adolescents.* Greenwich: Information Age Publishing, 307–337

Biel, Łucja (2011): "Training translators or translation service providers? EN 15038:2006 standard of translation services and its training implications." *The Journal of Specialised Translation* [16]: 61–76 – http://jostrans.org/issue16/art_biel.pdf (31 October 2021)

Bolaños-Medina, Alicia; Juan L. Núñez (2018): "A preliminary scale for assessing translators' self-efficacy." *Across Languages and Cultures* 19 [1]: 53–78 – https://doi.org/10.1556/084.2018.19.1.3 (31 October 2021)

Buysschaert, Joost; María Fernández-Parra, Koen Kerremans, Maarit Koponen, Gys-Walt van Egdom (2018): "Embracing digital disruption in translator training: Technology immersion in simulated translation bureaus." *Revista Tradumàtica* 16: 125–133 – https://doi.org/10.5565/rev/tradumatica.209 (16 June 2021)

Caprara, Gian Vittorio; Roberta Fida, Michele Vecchione, Giannetta Del Bove, Giovanni Maria Vecchio, Claudio Barbaranelli, Albert Bandura (2008): "Longitudinal analysis of the role of perceived self-efficacy for self-regulated learning in academic continuance and achievement." *Journal of Educational Psychology* 100 [3]: 525–534 – https://doi.org/10.1037/0022-0663.100.3.525 (26 January 2022)

Chen, Gilad; Stanley Gully, Dov Eden (2001): "Validation of a new general self-efficacy scale." *Organizational Research Methods* 4 [1]: 62–83 – https://doi.org/10.1177/109442810141004 (31 October 2021)

Chen, Gilad; Stanley M. Gully, Dov Eden (2004): "General self-efficacy and self-esteem: Toward theoretical and empirical distinction between correlated self-evaluations." *Journal of Organizational Behavior* 25 [3]: 375–395 – https://onlinelibrary.wiley.com/doi/abs/10.1002/job.251 (31 October 2021)

Doherty, Stephen; Dorothy Kenny (2014): "The design and evaluation of a statistical machine translation syllabus for translation students." *The Interpreter and Translator Trainer* 8 [2]: 295–315 – https://doi.org/10.1080/1750399X.2014.937571 (31 October 2021)

Eden, Dov; Arie Aviram (1993): "Self-efficacy training to speed reemployment: Helping people to help themselves." *Journal of Applied Psychology* 78 [3]: 352–360 – https://psycnet.apa.org/doi/10.1037/0021-9010.78.3.352 (31 October 2021)

Egdom, Gys-Walt van; Kalle Konttinen, Sonia Vandepitte, Maria Fernandez-Parra, Rudy Loock, Joop Bindels (2020): "Empowering translators through entrepreneurship in simulated translation bureaus." *Hermes* 60: 81–95 – https://doi.org/10.7146/hjlcb.v60i0.121312 (31 October 2021)

European Communities (2008): *The European Qualifications Framework for Lifelong Learning (EQF).* Luxembourg: Office for Official Publications of the European Communities – http://relaunch.ecompetences.eu/wp-content/uploads/2013/11/EQF_broch_2008_en.pdf (31 October 2021)

Göpferich, Susanne (2009): "Towards a model of translation competence and its acquisition: The longitudinal study TransComp." Susanne Göpferich, Arnt-Lykke Jakobsen, Inger Mees (eds): *Behind the mind: Methods, models and results in translation process research.* Copenhagen: Samfundslitteratur, 11–37

Haro-Soler, María del Mar (2017): "Teaching practices and translation students' self-efficacy: A qualitative study of teachers' perceptions." *Current Trends in Translation Teaching and Learning E* 4: 198–228 – http://www.cttl.org/uploads/5/2/4/3/5243866/cttl_e_2017_6.pdf (31 October 2021)

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Haro-Soler, María del Mar (2018): *Las creencias de autoeficacia del estudiantado de traducción: una radiografía de su desarrollo.* Unpublished doctoral dissertation. Granada: Universidad de Granada – http://digibug.ugr.es/bitstream/handle/10481/53590/29157663.pdf?sequence=4 (31 October 2021)

Haro-Soler, Maria del Mar (2019): "Vicarious learning in the translation classroom: How can it influence students' self-efficacy beliefs." *English Studies at NBU* 5 [1]: 92–113 – https://doi.org/10.33919/esnbu.19.1.5 (31 October 2021)

Haro-Soler, Maria del Mar; Don Kiraly (2019): "Exploring self-efficacy beliefs in symbiotic collaboration with students: An action research project." *The Interpreter and Translator Trainer* 13 [3]: 255–270 – https://doi.org/10.1080/1750399X.2019.1656405 (31 October 2021)

Hughes, Amanda; David Galbraith, David White (2011): "Perceived competence: A common core for self-efficacy and self-concept?" *Journal of Personality Assessment* 93 [3]: 278–289 – https://doi.org/10.1080/00223891.2011.559390 (31 October 2021)

Ivars, Amparo Jiménez; Daniel Pinazo Calatayud (2001): "'I failed because I got very nervous'. Anxiety and performance in interpreter trainees: An empirical study." *The Interpreters' Newsletter* 11: 105–118 – http://hdl.handle.net/10077/2452 (31 October 2021)

Kelly, Dorothy (2005): *A handbook for translator trainers: A guide to reflective practice*. Manchester: St. Jerome

Kelly, Dorothy (2007): "Translator competence contextualized. Translator training in the framework of higher education reform: In search of alignment in curricular design." Dorothy Kenny, Ryou Kyongjoo (eds): *Across boundaries: International perspectives on translation studies.* Newcastle: Cambridge Scholars Publishing, 128–142

Kerremans, Koen; Gys-Walt van Egdom (2018): "Professionalisation in translator education through virtual teamwork." Birthe Mousten, Sonia Vandepitte, Elisabet Arnó, Bruce Maylath (eds): *Multilingual writing and pedagogical cooperation in virtual learning environments.* Hershey, PA: IGI Global, 291–316

Kiraly, Don; Gary Massey, Sascha Hofmann (2018): "Beyond teaching: Towards co-emergent praxis in translator education." Barbara Ahrens, Silvia Hansen-Schirra, Monika Krein-Kühle, Michael Schreiber, Ursula Wienen (eds): *Translation – Didaktik – Kompetenz.* Berlin: Frank & Timme, 11–64

Konttinen, Kalle (2021): "A self-efficacy scale for measuring student progress in translation company simulations." *Across Languages and Cultures* 22 [1]: 64–81 – https://doi.org/10.1556/084.2021.00004 (31 October 2021)

Konttinen, Kalle; Leena Salmi, Maarit Koponen (2021): "Revision and post-editing competences in translator education." Maarit Koponen, Brian Mossop, Isabelle S. Robert, Giovanna Scocchera (eds): *Translation revision and post-editing: Industry practices and cognitive processes.* New York: Routledge, 187–202

Konttinen, Kalle; Outi Veivo, Tiina Holopainen, Leena Salmi (2017): "Multilingual Translation Workshop: Developing professionals in a simulated translation market." *MikaEL* 10: 150–164 – https://www.sktl.fi/@Bin/26c53b0ab4a4ffdc0b4fc3ad31c47214/1654073959/application/pdf/1587259/Mikael%20vol.10.pdf (1 June 2022)

Kwok, Oi-Man; Andrea T. Underhill, Jack W. Berry, Wen Luo, Timothy R. Elliott, Myeongsun Yoon (2008): "Analyzing longitudinal data with multilevel models: An example with individuals living with lower extremity intra-articular fractures." *Rehabilitation Psychology* 53 [3]: 370–386 – https://doi.org/10.1037/a0012765 (31 October 2021)

Lee, Sang-Bin (2014): "An interpreting self-efficacy (ISE) scale for undergraduate students majoring in consecutive interpreting: Construction and preliminary validation." *The Interpreter and Translator Trainer* 8 [2]: 183–203 – https://doi.org/10.1080/1750399X.2014.929372 (31 October 2021)

Lee, Sang-Bin (2015): "Developing an analytic scale for assessing undergraduate students' consecutive interpreting performances." *Interpreting* 17 [2]: 226–254 – https://doi.org/10.1075/intp.17.2.04lee (31 October 2021)

Lee, Sang-Bin (2018): "Exploring a relationship between students' interpreting self-efficacy and performance: Triangulating data on interpreter performance assessment." *The Interpreter and Translator Trainer* 12 [2]: 166–187 – https://doi.org/10.1080/1750399X.2017.1359763 (31 October 2021)

O'Brien, Sharon (2016): "Training translators for crisis communication: Translators without borders as an example." Federico M. Federici (ed.): *Mediating emergencies and conflicts: Frontline translating and interpreting.* London: Palgrave Macmillan, 85–111

Olvera-Lobo, María-Dolores; Rosa María Castro-Prieto, Enrique Quero-Gervilla, Ricardo Muñoz-Martin, Eva Muñoz-Raya, Miguel Murillo-Melero, Bryan Robinson, José Antonio Senso-Ruiz (2008): "Collaborative work training in higher education." Goran D. Putnik, Maria Manuela Cruz-Cunha (eds): *Encyclopedia of networked and virtual organizations.* Hershey: IGI Global, 261–268

Prieto, Loreto R.; Elizabeth M. Altmaier (1994): "The relationship of prior training and previous teaching experience to self-efficacy among graduate teaching assistants." *Research in Higher Education* 35 [4]: 481–497 – https://doi.org/10.1007/BF02496384 (31 October 2021)

Robinson, Bryan J.; María Dolores Olvera-Lobo, Junca Gutiérrez-Artacho (2016): "After Bologna: Learner- and competence-centred translator training for 'Digital Natives'." Celia Martín de León, Víctor González-Ruiz (eds): *From the lab to the classroom and back again.* Bern: Lang, 325–359

Rowbotham, Melodie; Gerdamarie S. Schmitz (2013): "Development and validation of a student self-efficacy scale." *Journal of Nursing & Care* 2 [1]: 1–6 – https://www.hilarispublisher.com/open-access/development-and-validation-of-a-student-self-efficacy-scale-2167-1168.1000126.pdf (1 Juni 2022)

Scholz, Urte; Benicio Gutiérrez Doña, Shonali Sud, Ralf Schwarzer (2002): "Is general self-efficacy a universal construct? Psychometric findings from 25 countries." *European Journal of Psychological Assessment* 18 [3]: 242–251 – https://doi.org/10.1027//1015-5759.18.3.242 (31 October 2021)

Schunk, Dale H.; Frank Pajares (2005): "Competence perceptions and academic functioning." Andrew. J. Elliot, Carol S. Dweck (eds): *Handbook of competence and motivation.* New York: Guilford Press, 85–104

Schwarzer, Ralf; Matthias Jerusalem (1995): "Generalized self-efficacy scale." John Weinman, Stephen Wright, Marie Johnston (eds): *Measures in health psychology: A user's portfolio. Causal and control beliefs.* Windsor: NFER-Nelson, 35–37

Schwarzer, Ralf; Lisa Marie Warner (2013): "Perceived self-efficacy and its relationship to resilience." Sandra Prince-Embury, Donald H. Saklofske (eds): *Resilience in children, adolescents, and adults.* New York: Springer, 139–150

Siemens, George (2013): "Learning analytics: The emergence of a discipline." *American Behavioral Scientist* 57 [10]: 1380–1400 – https://doi.org/10.1177/0002764213498851 (31 October 2021)

Singer, Judith D.; John B. Willett (2003): *Applied longitudinal data analysis: Modeling change and event occurrence*. New York: Oxford University Press

Smith, Sara Anne; Steven J. Kass, Rob J. Rotunda, Sherry K. Schneider (2006): "If at first you don't succeed: Effects of failure on general and task-specific self-efficacy and performance." *North American Journal of Psychology* 8 [1]: 171–182 – https://www.proquest.com/scholarly-journals/if-at-first-you-dont-succeed-effects-failure-on/docview/197979453/se-2?accountid=14774 (31 October 2021)

Taylor, Tish (2010): “Ceiling effect.” Neil Salkind (ed.): *Encyclopedia of research design.* Thousand Oaks: Sage, 133–135

Wäschle, Kristin; Anne Allgaier, Andreas Lachner, Siegfried Fink, Matthias Nückles (2014): “Procrastination and self-efficacy: Tracing vicious and virtuous circles in self-regulated learning.” *Learning and Instruction* 29: 103–114 – https://doi.org/10.1016/j.learninstruc.2013.09.005 (31 October 2021)

West, Brady T.; Kathleen B. Welch, Andrzej T. Galecki (2014): *Linear mixed models: A practical guide using statistical software*. Boca Raton: CRC Press

Yang, Xianmin; Xiaoshan Guo, Shengquan Yu (2016): “Effects of cooperative translation on Chinese EFL student levels of interest and self-efficacy in specialized English translation.” *Computer Assisted Language Learning* 29 [3]: 477–493 – https://doi.org/10.1080/09588221.2014.991794 (31 October 2021)

Yang, Yanxia; Xinyu Cao, Xing Huo (2021): “The psychometric properties of translating self-efficacy belief: Perspectives from Chinese learners of translation.” *Frontiers in Psychology* 12: 1–11 – https://doi.org/10.3389/fpsyg.2021.642566 (31 October 2021)

Zappatore, Marco (2020): “Lifecycle design and effectiveness evaluation for simulated translation agencies.” *Current Trends in Translation Teaching and Learning E* 7: 118–166 – http://www.cttl.org/uploads/5/2/4/3/5243866/cttl_e_2020_5_marco_zappatore.pdf (31 October 2021)

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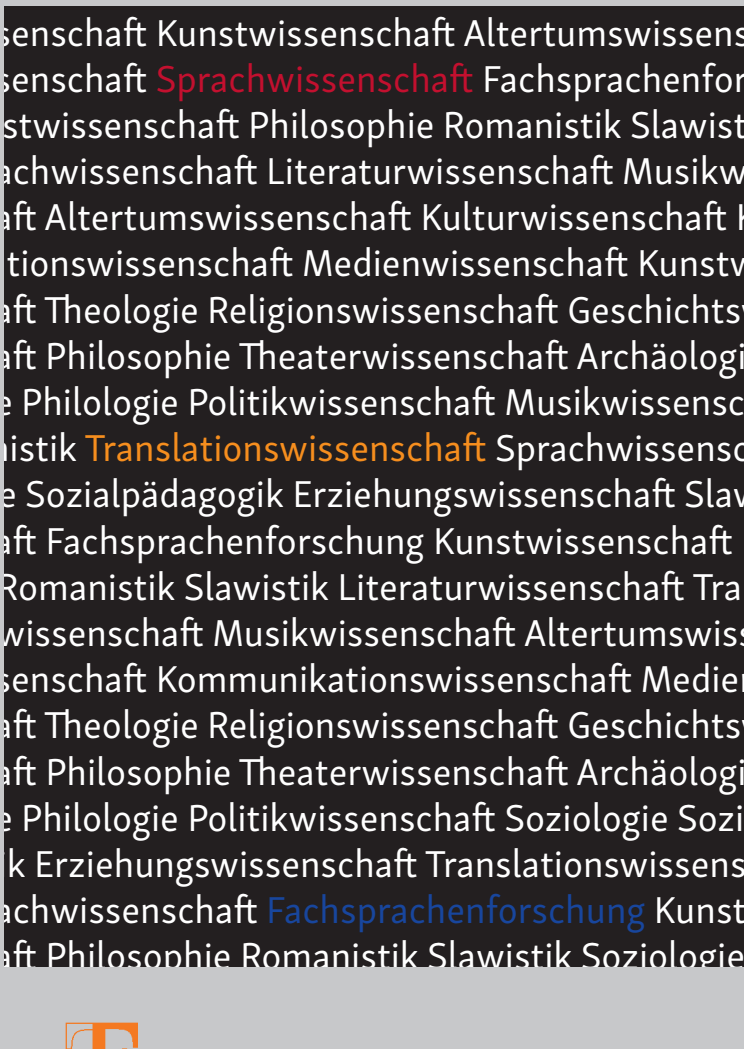

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