



HAL
open science

An investigation of the structure and role of English as a Foreign Language self-efficacy beliefs in the workplace

Rachel Chauvin, Fabien Fenouillet, Stephen Scott Brewer

► To cite this version:

Rachel Chauvin, Fabien Fenouillet, Stephen Scott Brewer. An investigation of the structure and role of English as a Foreign Language self-efficacy beliefs in the workplace. *System*, 2020, 91, pp.102251 -. 10.1016/j.system.2020.102251 . hal-03490459

HAL Id: hal-03490459

<https://hal.science/hal-03490459>

Submitted on 20 May 2022

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution - NonCommercial 4.0 International License

An investigation of the structure and role of English as a Foreign Language self-efficacy beliefs in the workplace.

Rachel Chauvin^a

Fabien Fenouillet^a

Stephen Scott BREWER^b

*Corresponding author: Rachel Chauvin
Permanent e-mail: rachel.chauvin@gmail.com ;
phone number: (00 33) 6 08 73 93 48

Affiliation addresses

^aUniversité Paris-Nanterre, Department of cognitive psychology, 200, avenue de la République, F-92001 Nanterre Cedex, France

^bESPE Academy of Créteil – UPEC, Laboratory Lidil 12 / IMAGER, EA 3958, Rue Jean Macé, 94861 Bonneuil-sur-Marne cedex – France

Funding

This research was supported by the company Sanofi and the National Association of Research and Technology (ANRT - Association Nationale de la Recherche et de la Technologie, France) (grant CIFRE N°2015/0162).

Acknowledgements

The authors wish to thank Sanofi France's team of Learning & Professional Development as well as the participants for their voluntary contribution. We gratefully acknowledge the support of the training design and delivery experts in linguistics and the company's training partner Transfer, who facilitated the data collection process. We extend our thanks to Professor Reid Bates, Director of School of Leadership and Human Resource Development at Louisiana State University, for his authorization to use the Learning Transfer System Inventory (LTSI).

Abstract

This study investigated the structure and role of the perceived English self-efficacy of French-speaking employees working in the health industry. Communicative competence in English as a Foreign Language is typically broken down into four language skills: reading, writing, listening and speaking. People may make use of one or more of these skills in their daily working lives, such as when they listen and speak during conversations. A *professional English self-efficacy questionnaire* (PESEQ) was developed in order to understand if and how EFL self-efficacy beliefs emerged in the organizational context as distinct psychological factors in connection with the four language skills. The scale was validated with 543 participants from the same organization. The exploratory and confirmatory factor analyses lead to the identification of three dimensions linked to a general self-efficacy factor: media understanding, receptive and productive written communication (reading and writing), receptive and productive oral communication (listening and speaking). A causal path model highlighted the indirect effect of pre-training professional English self-efficacy to on-the-job transfer, through its influence on motivation to learn, post-training performance self-efficacy and motivation to transfer. The discussion section addresses limitations and perspectives for research and teaching practices.

Keywords: English as a foreign language; English for Occupational Purposes; self-efficacy; workplace; training; learning transfer

1. Introduction

English is undoubtedly the prevalent international language of communication in today's digitally connected world (Botes et al., 2020). Its mastery is strategic both at the organizational level to gain a competitive advantage on the global market and at the individual level to facilitate career development opportunities (Harzing & Pudelko, 2013; Yamao & Sekiguchi, 2015). The lack of English as a Foreign Language (EFL) proficiency is a concern for France which ranked 32nd in the 2017 World English Proficiency index. The country stagnated for three years at a moderate proficiency level, which could be considered low for efficient workplace interactions (Education First, 2017). According to the authors of the report, best EFL teaching practices should focus on the use of communication abilities tailored to specific contexts. Training organizations in corporate settings commonly use English for specific purposes (ESP) approaches to design training programs that closely match employees' work-related needs (Dashtestani & Stojkovic, 2016; Jayalakshmi, 2017). However, the assessment of the reading, writing, listening and speaking cognitive skills through standardized tests like the BULATS¹ does not alone fully account for the underlying mechanisms of EFL communicative competence in everyday functioning, particularly in the workplace.

Decades of research in the area of training have demonstrated that individual difference characteristics such as attitudes, beliefs, and motivation are determinants of learning outcomes both in academic and organizational settings (Bell, Tannenbaum, Ford, Noe, & Kraiger, 2017). Among the motivational factors, self-efficacy beliefs in the ability to perform tasks have consistently been found to predict performance, persistence in learning behavior, and goal achievement in many domains, including foreign language learning (Bandura, 1997, 2015;

¹ Business Language Testing Service, test developed by Cambridge Assessment; <http://www.cambridgeenglish.org/exams-and-tests/bulats/>

Lihong, 2016; Mills, 2014; Schunk & Mullen, 2012; Stajkovic & Luthans, 1998). Although many studies have been conducted with adult learners in the workplace, few EFL studies have considered self-efficacy (Boo, Dörnyei, & Ryan, 2015; Mathews-Aydinli, 2008). The needs and motives of college or university students may differ from those of employees who are more likely to be confronted with ‘real-life’ situations, whether planned (e.g., a stakeholders’ meeting) or not (e.g., an impromptu phone call from an American colleague). The workplace context is likely to influence the nature of self-efficacy beliefs (Bandura, 1997, 2015).

The present research intends to fill this gap in the literature through the validation and the exploration of the psychometric properties of a new instrument, the *Professional English Self-Efficacy Questionnaire* (PESEQ). The aim of the present study, conducted in a French multinational in the health industry, is three-fold: 1) to investigate the characteristics (dimensions) and level of adult professionals’ self-efficacy beliefs as EFL users and learners in the workplace context; 2) to better understand how these perceptions may impact post-training motivation and as a result the effectiveness of language training programs in terms of on-the-job transfer; and 3) to draw implications from our enhanced understanding of these relationships for the improvement of language instruction.

2. Literature review

2.1. Acquiring language as socio-professional practice in the workplace

The field of English for Specific Purposes (ESP) “refers to the teaching and learning of English as a second or foreign language where the goal of the learners is to use English in a particular domain.” (Paltridge & Starfield, 2012, p. 2). ESP training programs are learner-centered approaches focused on how well the knowledge learned during training can be applied

in real-life situations rather than on how much knowledge is acquired (Jayalakshmi, 2017). Dudley-Evans & St John (1998) distinguished two branches of ESP. While English for Academic Purposes (EAP) relates to students' abilities to perform academic tasks in English (Charles, 2012; Dashtestani & Stojkovic, 2016), English for Occupational Purposes (EOP) refers to the application of the language in a variety of professional fields of expertise such as law, business, health sciences (Dashtestani & Stojkovic, 2016; Jayalakshmi, 2017). For non-native English-speaking employees, the priority is to develop language skills on specific topics to perform their activities and reach organizational goals successfully. Multinational corporations encompass a wide range of occupations and worldwide interactions between subsidiaries and with headquarters (Harzing & Pudelko, 2013; Marra, 2012). The level of language skills needed depends on the nature of the activities and the frequency of interactions. A security officer may only need to grasp the basics of the language for routine situations, what Carver (1983) calls 'English as a restricted language' (p. 133). On the other hand, a manager may increase his fluency to socialize with his international colleagues.

EFL training programs are instrumental for organizations whose primary concern is how well learning is transferred on the job (Salas, Tannenbaum, Kraiger & Smith-Jentsch, 2012). Learning transfer refers to the extent to which skills acquired during training are applied, maintained and generalized across work situations, and affect job performance (Bates, Holton III, & Hatala, 2012; Salas et al., 2012). Ellington, Surface, Blume, and Wilson (2015) found that foreign language training had a positive impact on skill maintenance and generalization among U.S. Army personnel, even though a decay in skill maintenance over time could be observed. Learning transfer is a complex process whose efficiency depends on the dynamic interplay of environmental (organizational and training context) and individual (i.e., cognitive abilities,

affect, motivation) factors (Bates & al., 2012). Decades of research have nevertheless highlighted the critical role of training utility, motivation to learn, motivation to transfer, and perceived self-efficacy (Burke & Hutchins, 2007; Grossman & Salas, 2011).

2.2. *Perceived Self-efficacy*

The personal belief system is a crucial component that enables people to exercise their agency through their self-reflective capabilities and the ability to verify the adequacy of their thoughts and behavior (Bandura, 2008; Mills, 2014). Self-awareness of beliefs enables foreign language learners to regulate their emotions and efforts and manage their learning experiences (Gao, 2010; Mercer, 2011). From a Social Cognitive Theory (SCT) perspective, the study of self-efficacy beliefs represents the best way to assess an individual's sense of personal agency (Bandura, 2008; Martin, 2004). Bandura (1997) defined perceived self-efficacy as the "belief in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). Self-efficacy is distinct from self-concept theory (Mills, 2014; Wang, Schwab, Fenn, & Chang, 2013). Self-concept beliefs refer to "one's perception of self and judgments of self-worth" (Mills, 2014, p. 10) when fulfilling a task competently (e.g., writing) or performing in a particular domain (e.g., achievement in English) (Wang, Kim, Bong, & Ahn, 2013). Self-efficacy beliefs measure task-related capabilities in the present, preferably with the use of 'I can' statements (Bandura, 2006).

People express a multitude of efficacy judgments about their ability to use their cognitive skills in specific circumstances and reach desired goals. Those judgments are malleable over time, fostered by personal experiences and socio-cultural interactions (Bandura, 1997; Mills, 2014). The strength (or level of certainty) of self-efficacy is likely to vary depending on the general nature of the task at hand (Bandura, 1997; Martin, 2004). For example, while a person's

perceived efficacy to read and understand written English may be quite strong, their efficacy belief to communicate orally in the language may be much weaker. Self-efficacy judgments are also subject to variation across situations. EFL reading efficacy, for example, is likely to be higher when reading an e-mail as opposed to a scientific article. Just as EFL speaking efficacy may be higher when giving a prepared talk in one's area of expertise than when engaging spontaneously in a casual socio-professional conversation with colleagues.

Self-efficacy influences the learner's behavior and transfer outcomes both directly and indirectly through its mediating effect on outcome expectations, motivation, goal choices and the perception of contextual facilitators and hindrances (Bandura, 2015; Grossman & Salas, 2011; Stajkovic & Luthans, 1998). Using structural equation modeling techniques, Chiaburu and Lindsay (2008) showed that employees' perceived training self-efficacy positively influenced motivation to learn (.57) and, to a lesser extent, motivation to transfer (.17). Post-training performance self-efficacy consistently affects motivation to transfer (Bates & al., 2012; Holton III, Bates, Bookter, & Yamkovenko, 2007; Hutchins, Nimon, Bates, & Holton, 2013). Cherian and Jacob (2013) nevertheless observed in their meta-analysis that the link between self-efficacy and job performance appeared to deteriorate with increased task complexity. Such a finding should be acknowledged as some researchers emphasize that foreign language acquisition is a complex long-term process relying on cognitive and sociocultural interactions (Barche, 2020; Gao, 2010; O'Malley & Chamot, 1993).

While few studies focus on EFL self-efficacy in corporate settings, academic research is well-documented and summarized in meta-analyses (e.g., Honicke & Broadbent, 2016; Huang, 2016) and reviews (Lihong, 2016; Mills, 2014). Studies among Chinese, German and Korean university students reported strong positive relationships between exam scores and English self-

efficacy measured with the Questionnaire of English Self-Efficacy (QESE) (Kim, Wang, Ahn, & Bong, 2015; Wang, Schwab, et al., 2013).

2.3. *Language communication skills*

The academic English self-efficacy instrument (QESE) validated by Wang and his colleagues (2013, 2015) is of interest because its items cover the four foundational cognitive skills on which foreign language pedagogy has traditionally focused (Aydoğan & Akbarov, 2014; Hinkel, 2012): reading, writing, listening and speaking. Nevertheless, researchers and educators have come to a consensus that “in meaningful communication, people employ incremental language skills not in isolation but in tandem” (Hinkel, 2012, p. 113). Day-to-day communication in a foreign language requires the association of multiple cognitive skills to complete their tasks (Hinkel, 2012). For instance, people may take notes of what they hear during meetings or phone conversations, using simultaneously listening and writing skills. The four skills necessarily share similar top-down processes from a cognitive psychology perspective (DeKeyser, 2009). Language competence development is rooted in the interdependent relationship between declarative (i.e., vocabulary, grammar rules, pronunciation) and procedural knowledge (i.e., problem-solving, use of grammar tense appropriately in conversations), as illustrated in neurophysiological studies (DeKeyser, 2009).

Some researchers proposed alternative groupings of the four cognitive skills to represent the contexts of language use. Aydoğan and Akbarov (2014) characterized the four skills along two parameters: the mode of communication, which is either written (reading, writing) or spoken (listening, speaking); and the direction of communication, that is the reception (reading, listening) and production of messages (writing, speaking). Researchers from the Council of

Europe² proposed a proficiency assessment grid in the Common European Framework of Reference for Languages (CEFR) (Verhelst, Van Avermaet, Takala, Figueras, & North, 2009) along three areas: writing skills, understanding skills (reading and listening) and speaking skills (spoken interactions and speech).

2.4. *Research overview*

From a dynamic systems perspective, language development is a non-linear process grounded in the interaction between the learner's internal resources, perceptions, and the different contextual factors encountered (Barche, 2020). Understanding how adults perceive their English for Occupational Purposes (EOP) capabilities can help training professionals better support learners' engagement in learning and work activities.

Our research team questioned whether people's beliefs about their EFL capabilities would be organized according to four separate skills or differently in a socio-professional context. The categories identified in former models (like those mentioned above) were mainly based on studies in academic settings. We hypothesized that employees tend to organize their thoughts about their language capabilities according to the nature of their communicative tasks (the grouping had to be determined), and this may influence the quality of learning, motivation, and on-the-job transfer. This hypothesis was tested through the conception and validation of a *Professional English Self-Efficacy Questionnaire* (PESEQ), based on the academic *Questionnaire of English Self-Efficacy* (QESE) (Wang, Kim, et al., 2013). The reading, writing, listening, and speaking items of the QESE could easily be adapted to professional situations and respect Bandura's (2006) guidelines for self-efficacy measures. Few other measures of English self-efficacy have been used as stand-alone tools and considered its multi-dimensional aspects

² <https://www.coe.int/en/web/portfolio/the-common-european-framework-of-reference-for-languages-learning-teaching-assessment-cefr->

(Mills, 2014; Wang, Kim, et al., 2013). Wang, Schwab, et al. (2013) validated the four-factor model of the QESE with the existence of a general English self-efficacy factor through confirmatory analyses. They suggested the unidimensionality of English self-efficacy owing to high between-subscale correlations. Nevertheless, other analyses using the Rasch Rating Scale Model (Wang, Kim, Bai, & Hu, 2014; Wang, Kim, et al., 2013) showed that the levels of item difficulty were not necessarily ranked by cognitive ability and could differ greatly within each factor. In our study, we decided to implement an Exploratory Factor Analysis (EFA) to check the *spontaneous* grouping of the participants' answers. An EFA is the best way to explore the underlying dimensionality of a data set, that is, to examine how and to what extent the items are grouped (Fabrigar, Wegener, MacCallum, & Strahan, 1999; Worthington & Whittaker, 2006).

Three phases were followed. We first investigated the dimensional aspects of English self-efficacy beliefs (objective 1) through an EFA in phase 1. In phase 2, confirmatory factor analyses (CFA) enabled to test the adequacy and plausibility of this exploratory factor structure. Results of the PESEQ model were compared to that of four models derived from the above review (cf. Figure 1). Model A tested a four-factor structure composed of reading, writing, listening and speaking cognitive skills. Model B tested the model of Wang, Schwab, et al. (2013) with a second-order factor. Model C grouped all items to examine the potential unidimensionality of the PESEQ. Model D tested the CEFR three-level classification (Verhelst et al., 2009), a reference in the field of training and skill assessment.

In phase 3, a causal path-analysis was implemented to meet our second objective, the study of how employees' English self-efficacy beliefs could influence post-training motivation and on-the-job transfer. Correlations with participants' frequency of various professional needs

and the proficiency level also contributed to the assessment of the PESEQ criterion validity. The discussion covers some pedagogical implications drawn from the findings.

INSERT FIGURE 1

3. Method

3.1. Participants and procedure

This field study was conducted in an international health industry organization. French collaborators freshly enrolled in English training programs received email invitations between March and October 2016. The mean age of the 543 respondents was 44.6 years ($SD = 7.5$; 67% females and 33% males). While 62% of participants held management positions, 35% had intermediary occupations. The language training firm hired by the organization was in charge of the design of individualized training programs to increase work performance, based on the learner's estimated English proficiency level and professional needs (described in the measures section). Based on the CEFR (Verhelst et al., 2009), 30.2% of participants were identified as basic users of English (level A), 54% were low-level independent users (level B1), 14.5% were high independent users (level B2), and 1.1% were proficient users (level C1). Depending on the learners' needs and choices, the EOP programs could be composed of one or several delivery modes (face-to-face, distance, or a mix of modalities). Formal training hours with a trainer ranged between 10 hours (goal to maintain job competency) and 60 hours (skill improvement goal) ($M = 18.9$, $SD = 6.2$). Modalities could involve 1- or 2-day collective face-to-face thematic modules, a week of immersion class, individual face-to-face or phone classes with a virtual

whiteboard, and free access to an e-learning platform with audio and video resources, articles, and quizzes (time spent online not included in the number of formal hours).

Participants signed an online consent form following the European Code of Conduct for Research Integrity (All European Academies, 2017). The data collection process is summarized in Figure 2. First, participants filled in a professional needs questionnaire when they enrolled. Then, they completed the PESEQ scale. Trainees who started their training before May 21st (sample 1, $n = 246$) were assigned to phase 1 exploratory analysis. Trainees registered after that date (sample 2, $n = 297$) were assigned to the other phases. Among sample 2 respondents, 193 learners took the proficiency test (BULATS) up to three months after the end of their training. However, the training content was solely focused on professional needs, not on exam preparation. Nevertheless, trainees could consult a sample test in order to get acquainted with its format. Finally, 135 volunteers completed a motivation-to-learn scale at the beginning of their training and post-training scales sent in December 2016, before taking the BULATS. Invitations to fill in a perceived transfer scale were sent in April 2017 ($n = 111$).

INSERT FIGURE 2

3.2. *Measures*

3.2.1. *The professional English self-efficacy questionnaire (PESEQ).*

Wang, Kim, et al.'s (2013) QESE instrument was translated into French by two independent researchers (American and French co-authors), following Vallerand's (1989) recommendations for cross-cultural translations. Blind back-translations were performed by professional bilingual translators (French, US, and British) to ensure its consistency. The original

instrument was composed of 32 items divided into four subscales: reading (items 2, 12, 16, 21, 25, 26, 29, 32), writing (items 5, 8, 11, 13, 14, 18, 28, 31), listening (items 1, 3, 9, 10, 15, 22, 24, 27), speaking, (items 4, 6, 7, 17, 19, 20, 23, 30) (cf. Appendix). Ratings range from 1 (“*I cannot do it at all*”) to 7 (“*I can do it very well*”). The company’s EFL learning expert, responsible for the management of language training programs, checked the meaning and congruence of the items to tailor the tasks to professional communication situations (over 20 years of seniority in the company). Twenty-five items were adjusted. For example, the academic item 2 (“*Can you do homework/home assignments alone when they include reading English texts?*”) was altered to reflect a relevant workplace task (“*Can you conduct your professional activities alone when you need to read and understand texts in English?*”). Items were mixed to limit answer biases. The PESEQ was tested with five randomly selected French collaborators before sending out invitations.

3.2.2. Professional needs questionnaire

The language training firm provided the professional needs questionnaire. Participants had to mention the level of frequency of use for eight types of professional activity: receiving visitors, interacting socially, conversing on the phone, negotiating, participating in face-to-face or online meetings, making oral presentations, reading and writing (from emails to complex documents). The level of frequency was coded as follows: 0 for *no need at all*, 1 for *occasionally* (once a month), 2 for *quite frequently* (once a week on average), and 3 for *frequently* (once a day or more). The distribution of answers by the level of frequency for each type of activity is reported in Table 3b). A mean written communication frequency score (with the reading and writing variables) and a mean oral communication frequency score (with the other variables)

were computed. Nevertheless, we acknowledge that reading and writing tasks may be involved to some extent during meetings and negotiation activities.

3.2.3. Post-training proficiency level.

Our organizational partner started to assess the English proficiency level of their collaborators with the BULATS (BUSINESS LANGUAGE TESTING SERVICE) in 2016, independently of any training content. This certified test was created in 1997 by a branch of Cambridge University, Cambridge Assessment English³, who also owns the recognized International English Language Testing System (IELTS) designed for higher education and immigration purposes. Our research team took this opportunity to validate the construct of the PESEQ scale further, as EFL self-efficacy beliefs tend to be positively related to the subjects' proficiency level (Mills, 2014).

Participants ($n = 193$) took the BULATS computer-based test under the supervision of Cambridge English Language Assessment authorized agents. It included multiple-choice and fill-in-the-gap exercises to assess reading, grammar and vocabulary skills (Suvorov & Hegelheimer, 2013). Candidates also had to answer questions about selected speeches (monologues) or conversations (dialogues) to measure listening abilities. The BULATS is adaptive, which means that the level of difficulty of successive questions selected from a bank of items depends on the candidate's previous answers (Geranpayeh, 2001; Suvorov & Hegelheimer, 2013). Therefore, each learner receives different sets of items. A BULATS score between 0 and 100 represents an ability level derived from a calibration of the answers by item difficulty, using a latent Rasch model (Cope, 2009; Geranpayeh, 2001). A score below 40 indicates a basic user CEFR proficiency level (A). A score between 40 and 74 indicates an independent user (level B), while a

³ <http://www.cambridgeenglish.org/exams-and-tests/bulats/>

score above 75 reflects a good proficiency (level C). The mean score in our sample was 51.20 ($SD = 18.90$). Studies on the validity of the BULATS were reinforced by reliability assessments through test-retest methods (Geranpayeh, 2001) and Rasch reliability estimates, an alternative measure of internal consistency (Cope, 2009).

3.2.4. Motivation and transfer scales

The other self-report instruments were based on 5-point Likert scale agreement ratings (from 1 = “*strongly disagree*” to 5 = “*strongly agree*”).

Motivation to learn. The Adult Education Motivation Scale (Fenouillet, Heutte, & Vallerand, 2015) was administered before training. Five four-item subscales measure three types of motivation to learn based on Deci and Ryan’s (2008) Self-Determination Theory. Intrinsic motivation ($\alpha = .81$) represents the higher level of autonomous behavior governed by an internal interest to learn. Autonomous forms of extrinsic motivation (8 items, $\alpha = .81$) include identified ($\alpha = .82$) and integrated regulation ($\alpha = .87$), which reflect that attitudes towards learning have progressively been integrated into the person’s value system or sense of self. External regulation ($\alpha = .76$) and introjected regulation ($\alpha = .83$) represent extrinsic controlled forms of motivation (8 items, $\alpha = .75$), indicating that undergoing training is motivated by external contingencies such as rewards and punishments. The mean scores of the three types of motivations (intrinsic, extrinsic autonomous and controlled) were retained for data treatment.

Post-training scale. The French version of two subscales from the Learning Transfer System Inventory (LTSI) (Bates et al., 2012; Devos, Dumay, Bonami, Bates, & Holton III, 2007) was administered after the end of training and before the post-training proficiency test. The motivation to transfer subscale measures trainees’ willingness to apply the skills learned during training (3 items, $\alpha = .81$) (e.g., “I get excited when I think about trying to use my new learning

on my job”). The performance self-efficacy subscale (3 items, $\alpha = .81$) represents beliefs in the ability to use recently acquired knowledge and skills at work (e.g., “I am confident in my ability to use newly learned skills on the job”).

On-the-job transfer. A perceived transfer questionnaire (Devos et al., 2007) was sent in April 2017. This unidimensional scale (9 items; $\alpha = .94$) measured both the direct use of learning at work (3 items; e.g., “I use this training in my job whenever I have the opportunity to do so”) and the consequences of that direct application of new skill on job performance (6 items; e.g., “The quality of my work has improved after using the new skills I learned in training”).

3.3. *Data treatment*

Confirmatory factor analyses were performed with AMOS V21. The other analyses were conducted with SPSS V23. Missing data for each variable was below 2%. The Expectation-Maximization (EM) algorithm method was used to impute missing data, as this alternative to the listwise approach is considered better when missing values are less than 5% (Allison, 2003). Results of descriptive statistics (cf. Table 1 and 3) indicated that the kurtosis (asymmetry) and skewness indices of each variable did not significantly deviate from the ± 2 threshold of non-normal distribution (Gravetter & Wallnau, 2016). The subscales’ Cronbach alphas were all above the recommended .70 threshold (Cortina, 1993).

3.3.1. *Phase 1 - Exploratory factor analysis (EFA)*

A Common Factor Analysis with the principal-axis factoring (PAF) extraction method was chosen, as it is recommended to examine the quality of a scale’s construct (Beavers et al., 2013; Costello & Osborne, 2005; Worthington & Whittaker, 2006). Oblique rotations were selected because of the high inter-correlations between the 32 variables ($r > .50, p < .01$). A Kaiser-Meyer-Olkin (KMO) coefficient above .90 indicated a good sampling adequacy

(Worthington & Whittaker, 2006). The number of factors retained was determined with a parallel analysis procedure recommended for its effectiveness over Kaiser's criterion of eigenvalues over one (Hayton, Allen, & Scarpello, 2004; Kahn, 2006). A parallel analysis consists in generating multiple random datasets with the same number of observations and variables as the raw data (Watkins, 2006) (one thousand sets here). The eigenvalues of the raw and random data are then compared. The factors with raw data eigenvalues higher than the random data eigenvalues are retained, based on the assumption "that a factor that explains more variance than chance is meaningful" (Kahn, 2006, p.692).

3.3.2. Phase 2 - Confirmatory analyses and model comparison

A ratio of 9.3 participants per variable, well over the 5:1 recommended minimum ratio (Worthington & Whittaker, 2006), justifies the implementation of the Confirmatory Factor Analysis (CFA) and structural equation modeling (SEM). The CFA enables researchers to evaluate the extent to which the grouping of items (or factor structure) discovered with the EFA can be replicated with another sample (Worthington & Whittaker, 2006). The PESEQ factor structure found in phase 1 and a model with a second-order factor to determine the existence of a general English self-efficacy factor were tested. The goodness-of-fit indices were then compared to those of models A, B, C, and D described in the research overview section (cf. Figure 1).

Models A to D were conceived with the same 32 items. The four dimensions reading, writing, listening and speaking of models A and B are composed of 8 items each, derived from Wang, Schwab, et al.'s (2013) academic four-factor model. Model C is composed of one dimension of 32 items. Model D three-factor structure tested the structure of the CEFR grid (Verhelst et al., 2009). It was elaborated as follows: (a) the 8 writing items composed the writing skills factor; (b) understanding skills included the reading and listening items (16 items); (c) the

speaking skills were divided into spoken interaction (4 items extracted after thematic analysis E4, E5, E6, E7) and spoken production (4 items of speech fluency extracted after thematic analysis E1, E2, E3, E8).

Seven goodness-of-fit indices recommended in the literature were used (Hooper, Coughlan, & Mullen, 2008; Worthington & Whittaker, 2006). A chi-square/degree of freedom ratio (χ^2/df) below 5 was considered acceptable, while a value below 3 is preferred. However, this criterion is sensitive to sample size and should be interpreted with caution (Kahn, 2006). A minimum cut-off value of .90 for the comparative fit index (CFI) and the Tucker Lewis index (TLI) was retained (Bentler, 1992; Schumacker & Lomax, 2004). A Root Mean Squared Error of Approximation (RMSEA) below .08 was considered acceptable (Browne & Cudeck, 1992). However, the RMSEA 90% confidence interval should not include .10. A Standardized Root Mean Squared Residual (SRMR) should not exceed .08 (Hooper, Coughlan, & Mullen, 2008). The Akaike's Information Criterion (AIC) and the Bayesian Information Criterion (BIC) indices enabled to discriminate competing models. The model with the lowest AIC and BIC was retained (Kline, 2011). As advised by some researchers (Kahn, 2006; Marsh, Hau, & Wen, 2004; Worthington & Whittaker, 2006), cut-off values were interpreted in light of other indices and the theoretical approach adopted.

3.3.3. Phase 3 – Correlations and path model analysis

The analyses were conducted with the mean scores of the PESEQ retained factors and the other subscales. To test the significance of the difference between correlations, Steiger's (1980) test of comparison of equality between dependent correlations was performed with Lee and

Preacher's (2013) algorithm⁴ of. This is useful when strong relationships between variables are observed (as was the case with the PESEQ dimensions). A path analysis model enabled to examine the direct and indirect influences of pre-training EFL self-efficacy on perceived transfer. We entered autonomous motivation to learn, performance self-efficacy, and motivation to transfer as potential mediators of this relationship. A ratio of observed to latent variables of 11.8 for a low sample size of 111 complete observations (i.e., 1.88 cases per parameter) undermined the feasibility of a structural equation modeling (SEM) approach using observed and latent variables (Hooper & al., 2008; Westland, 2010; Worthington & Whittaker, 2006). Therefore, a regression-based mediation method using ordinary least squares (OLS) was implemented with the PROCESS macro 3.2 for SPSS (Hayes, 2018). This reliable method (Hayes, Montoya, & Rockwood, 2017) uses a bootstrapping procedure to generate bias-corrected 95% confidence intervals, thus increasing the accuracy of inferences on the direct and indirect effects of each path in the models (Hayes, 2017; Preacher & Hayes, 2008). Standard errors were based on the HC3 Heteroskedasticity Consistent Standard Error Estimator recommended by Hayes and Cai (2007), whether the homoskedasticity assumption is violated or not. This estimator can limit potential biases in the p -values. The direct and indirect effects were considered significant when 0 was not included in the confidence intervals.

4. Results

4.1. Phase 1 - Exploratory factor analysis (EFA)

⁴ Lee, I. A., & Preacher, K. J. (2013, September). Calculation for the test of the difference between two dependent correlations with one variable in common [Computer software]. Available from <http://quantpsy.org>.

The parallel analysis showed that the random data eigenvalue at the 95th percentile (.69) became higher than the raw data eigenvalue (.61) for the fourth factor, suggesting the existence of three factors. The results of the EFA (cf. Table 1) indicated item communalities above the recommended .40 threshold value (Worthington & Whittaker, 2006). The three extracted factors accounted for 69.73% of the total variance. Item loadings were above the .32 recommended threshold (Costello & Osborne, 2005; Worthington & Whittaker, 2006). However, cross-loadings higher than .32 in absolute value appeared on the listening items O5 (“*Can you understand conversations in English (telephone conferences or audio recordings) about everyday professional topics?*”) and O7 (“*Can you understand speeches (at meetings, seminars, conference presentations, etc.) in English?*”). Their loading was higher and negative on factor 3 (-.38 for O5 and -.41 for O7) compared to the loading on factor 1 (.32 for O5 and .35 for O7). These items refer to regular professional activities during which speeches are generally accompanied by PowerPoint presentations, which could explain those results. They were not eliminated in order to compare models appropriately during phase 2.

The thematic analysis showed that factor 1 was composed of the item O8 (“*Can you understand telephone numbers when they are dictated to you in English?*”) in addition to all reading and writing items except t6. O8 could be interpreted partly as a writing task involving taking notes of numbers. Results suggest that factor 1 represents *written communication* tasks (reading and writing). Factor 2 only contains four listening items (O2, O3, O4, and O6) referring to the understanding of content delivered via audio and video. It was called *media understanding*. Factor 3 contains all speaking items in addition to the three remaining listening items (O1, O5, and O7) and t6 (“*Can you produce English sentences with idiomatic phrases?*”), which suggests that it represents *oral communication* self-efficacy (speaking and listening during

social exchanges). Item t6 is linked to the ability to produce complex sentences, a useful skill during formal or vocational interactions (Hinkel, 2012). It could thus be interpreted as a speaking task. Irrespective of the solution, Cronbach's alphas were above the cut-off bracket of .90, a sign of strong internal consistency, and even a certain level of redundancy between items within each factor (Cortina, 1993).

INSERT TABLE 1

4.2. *Phase 2 - Confirmatory analyses and model comparison*

The three-factor structure of the PESEQ discovered in phase 1 (model E) and the same model with a second-order factor (model F) (cf. Figure 3) were tested and compared to models A through D (cf. Figure 1). The goodness-of-fit indices are reported in Table 2.

INSERT FIGURE 3

INSERT TABLE 2

The CFA confirmed the PESEQ three-factor structure and the existence of a general factor of English self-efficacy. Models E and F showed identical indices which fell within an acceptable range: a chi-square ratio below 5 (3.23), a χ^2/df ratio a CFI and TLI at the minimum recommended value of .90; a low SRMR (.043); an RMSEA slightly above the cut-off value (.087), but with an acceptable 90% confidence interval ([.082;.092]). Model F computed with a second-order factor showed correlations above .75 between the dimensions (cf. Figure 4).

INSERT FIGURE 4

Moreover, the fit indices of the PESEQ model F were lower than those of the other models A, B, C, and D, including the AIC and BIC. The single factor Model C showed the poorest fit with a chi-square ratio, RMSEA, TLI, and CFI values outside of an acceptable range. The hypothesis of a single dimension can be rejected. The CEFR based structure model D appeared more satisfactory than models A and B with the four cognitive skills structure. Nevertheless, its RMSEA (.091) remained high. The PESEQ structure of model F with three first-order factors and a second-order factor appears to reflect adequately employees' professional EFL efficacy beliefs.

4.3. Phase 3 – Correlations and path model analysis

The mean PESEQ scores were calculated for each latent variable identified in model F, including a PESEQ global score. The correlation matrix (cf. Table 4) shows that the oral and written communication dimensions were very strongly correlated ($r = .93, p < .01$), but their relationship with media understanding was lower (.72 and .70 respectively). A dependent t-test to compare the PESEQ means indicated that participants were significantly less confident in their *media understanding* abilities ($M = 3.69, SE = .07$) than in their *oral communication* ($M = 4.67, SE = .06, t(296) = 19.98, p < .001$) and *written communication skills* ($M = 4.88, SE = .06, t(296) = 24.29, p < .001$).

INSERT TABLE 3

Correlations with the English proficiency level and the frequency of professional needs tend to demonstrate the PESEQ scale criterion validity. BULATS scores were strongly related to the global PESEQ score ($r = .68$) and its subscales ($.54 < r < .66$) ($p < .01$). Significant positive correlations above .21 ($p < .01$) were found between task frequencies and both the PESEQ and BULATS scores, except for visitor reception needs. The PESEQ global scores were slightly more related with the frequencies of oral communication tasks ($r = .34$) ($p < .01$) than written communication tasks ($r = .29$) ($p < .01$). The *oral* and *written communication* dimensions were similarly related to task frequencies, while *media understanding* self-efficacy was less correlated with task frequencies.

The correlations with the pre- and post-training perception scales highlighted the significant links between the PESEQ global scores and perceived far transfer ($r = .36$), motivation to transfer ($r = .36$), performance self-efficacy ($r = .32$), as well as intrinsic ($r = .29$) and autonomous forms of motivation to learn ($r = .22$) ($p < .01$). However, no relationship with extrinsic-controlled motivation to learn was found ($p = ns$). Results were similar at the level of the PESEQ subscales, except for *media understanding* self-efficacy, which was unrelated to perceived transfer ($p = ns$) and autonomous motivation to learn ($p = ns$). Participants may have considered the mastery of this ability less relevant to their professional goals. A lack of relationship between the proficiency level (BULATS scores) and transfer of learning at work was also observed ($p = ns$).

INSERT TABLE 4

The mediation path analysis was implemented with the PESEQ global score as the antecedent variable and perceived on-the-job transfer as the outcome variable. Autonomous motivation to learn, the first mediator, was entered as a single variable composed of the intrinsic and extrinsic forms of autonomous regulation (12 items, $\alpha = .82$). Results presented in Figure 4 (cf. details Table 5) show no significant direct effect between English self-efficacy and perceived transfer ($p = ns$). The indirect effects of the mediators in the paths predicting perceived transfer were significant (95% CI = [.14; .38]). Motivation to transfer was the unique significant predictor of perceived transfer ($\beta = .43; p < .01$) and seemed influenced by post-training performance self-efficacy ($\beta = .37; p < .01$) and autonomous motivation to learn ($\beta = .29, p < .01$). The effect of pre-training English self-efficacy was significant on post-training performance self-efficacy to successfully apply learning at work ($\beta = .30, p < .05$), motivation to learn ($\beta = .24, p < .01$), but not on motivation to transfer ($\beta = .23, p = ns$). Results highlight the complementary role of on-the-job performance self-efficacy and English communication self-efficacy. Even though both measures relate to the same theory, they reflect divergent constructs (DeVellis, 2016; Holton III, Bates, Bookter, & Yamkovenko, 2007).

INSERT FIGURE 5

INSERT TABLE 5

5. Discussion

This article explored the structure of English self-efficacy of French collaborators in an industrial context and its potential effect on learning transfer after the completion of English for Occupational Purposes (EOP) training programs.

Our first objective was to uncover the dimensional aspects and level of adults' EFL self-efficacy in the workplace. In line with the human agentic perspective (Bandura, 2008; Gao, 2010; Mercer, 2011), the findings provided further evidence that adults' EFL self-efficacy beliefs were shaped by the context of the interactions in everyday situations. Three stable factors, linked to a global factor of English self-efficacy, were identified: a) *written communication* skills (composed of reading and writing tasks); b) *oral communication* skills (reflecting listening and speaking tasks found in social interaction); and c) *media understanding* skills (related to the comprehension of audio radio and video programs). Participants' perceptions depended primarily on the mode of communication (written and oral) and second on the reception of oral messages from different media, supporting Aydođan and Akbarov's (2014) distinction between modes and direction of communication.

The specificity and difficulty level associated with the receptive nature of listening tasks could explain the separation of *media understanding* items from the *oral communication* dimension. The low mean scores suggest that participants considered those activities challenging. Wang et al. (2013, 2014) already observed that these media items were ranked among the most difficult ones in their study of Korean and Chinese students' self-efficacy. Listening comprehension refers to a person's ability to build accurate mental representations of what they hear through two incremental processes (Leonard, 2019): (a) the decoding and combining of words and sentences to produce meaning (bottom-up processes) (b) the analysis of the context and prior knowledge (top-down processes). Listening to media contents typically offers limited interaction, thus restricting an L2 user's locus of control in carrying out such tasks. In work situations, employees have the opportunity to draw on their context, ask questions, get feedback from their colleagues.

The strong correlations between the PESEQ factors could be explained by the transversal skills they may have in common, such as sound acquisition and the knowledge of grammar rules and vocabulary (Aydoğan & Akbarov, 2014; DeKeyser, 2009; Hinkel, 2012; O'Malley & Chamot, 1993). Moreover, some professional activities involve oral and written skills. For instance, written presentations are commonly integrated into professional meetings and web conferences as a form of speech guidance. This could explain the cross-loadings of the listening items O5 and O7 with the *written communication* factor. Similar correlations between the frequency of professional activities with written and oral communication self-efficacy suggest that learners who practice one mode of communication (i.e., written) over another (i.e., oral) nevertheless tend to raise their level of self-efficacy for both modes of communication.

The second objective of this study was to investigate the effect of adult learners' English self-efficacy on post-training motivation and on-the-job transfer. Results of the path analysis (cf. Figure 5) emphasize the indirect effect of English self-efficacy on perceived transfer through its influence on autonomous motivation to learn and post-training performance self-efficacy. The participants' perceived ability to be efficacious in professional activities appears to depend partly on their confidence to communicate in English. Highly self-efficacious employees tend to engage in learning and work activities (Cherian and Jacob, 2013; Grossman & Salas, 2011) and to develop their job autonomy (Federici, 2013; van Mierlo, Rutte, Vermunt, Kompier, & Doorewaard, 2006). In turn, these mastery experiences shape self-efficacy beliefs (Bandura, 2015; Mills, 2014; Stajkovic & Luthans, 1998).

Nevertheless, the opportunities to practice the language in real work situations vary greatly across occupations. Participants in our study mostly reported occasional communication needs (cf. Table 3). The significant relationship between BULATS scores and the frequency of

professional activities suggests that the work occupations of participants were probably related to their competency level. Managers working at the headquarters of multinationals certainly need to show higher capabilities than line managers from subsidiaries not confronted with daily interactions in English (Harzing & Pudelko, 2013). An employee's level of English self-efficacy could quickly reach its limit if his/her communication needs are occasional. New research could focus on the different categories of occupations. Meanwhile, training is an alternative to maintain language skills and increase one's level of self-efficacy.

The third objective was to draw from the findings practical implications for English for Occupational Purposes (EOP) instruction. Too much emphasis on the overall language proficiency level could overlook the critical role of English perceived self-efficacy in skill maintenance and development. One must feel efficacious enough to accomplish his activities at his skill level. EOP training programs are skill-based and generally of short duration. Therefore their design should focus on the specific professional needs of learners appropriately assessed beforehand (Carver, 1983; Xie, 2014). Xie (2014) reported courses of about 30 hours in Chinese organizations. In this study, an average 18.9 hours may seem low, but it does not account for the time learners could freely spend on the online language learning platform accessible 24 hours a day (not available in this study). Training designs that carefully simulate 'real-life' situations (Mills, 2014), use integrated multi-skill instructional approaches mixing the four skills (Aydoğan & Akbarov, 2014; Hinkel, 2012), and draw on authentic materials (Gilmore, 2007) are more likely to increase self-efficacy and the attainment of learning goals. Companies tend to favor e-learning technology for budget considerations and the opportunity to learn anywhere at one's convenience (Xie, 2014). Learning through audio and video materials seems to facilitate vocabulary acquisition and fosters the development of listening comprehension (Dashtestani &

Stojkovic, 2016), which could boost the learners' confidence not only in their listening capabilities but in their overall language communication abilities.

The real-work context of this field study may have raised some limitations. First, there was little experimental control on the need assessment questionnaire provided by the company's training provider, the time spent by participants in training, and the conduct of the BULATS test. Because the BULATS is subject to copyright, our research team did not have access to the answers to the test questions, impeding the computation of reliability estimates for our sample. The number of hours spent on the e-learning platform was not released for all participants for confidentiality reasons. Besides, elaborating statements referring to a single cognitive skill while focusing on the relevance of communication tasks represented a challenge. Their interpretation is likely to depend on the respondent's experience (Schwarz, 1999). For instance, item t6 (*'Can you produce English sentences with idiomatic phrases?'*) could be interpreted either as a speaking or writing activity, depending on the respondent's usual mode of communication (oral or written). Nevertheless, excluding such regular activities could undermine the accuracy and generalizability of findings in real-life settings (Jayalakshmi, 2017). Improvements to the scale structure could include the reformulation of some items to fit the dimensions more accurately. Also, the replication of this study with other organizations from other industries is advisable.

6. Conclusion

The role of adults' English for Occupational Purposes (EOP) self-efficacy on skill development and work performance should not be underestimated. Findings in this study suggest that English self-efficacy could contribute to a broader understanding of the connections between the employees' professional needs, motivation to learn, motivation to transfer, and overall

perceived ability to perform at work. This study was one step in a larger project that compares the effects of EOP training designs on learning transfer for different types of occupations. More studies with FL learners in international organizations are necessary to bridge the gap and gain a new understanding that would benefit both the business world and continuous education.

References

- All European Academies (2017). The European Code of Conduct for Research Integrity. Berlin, Germany: All European Academies. Retrieved from <https://allea.org/publications/joint-publications/european-code-conduct-research-integrity/?cn-reloaded=1>
- Allison, P. D. (2003). Missing Data Techniques for Structural Equation Modeling. *Journal of Abnormal Psychology, 112*(4), 545–557. <https://doi.org/10.1037/0021-843X.112.4.545>
- Aydoğan, H., & Akbarov, A. A. (2014). The Four Basic Language Skills, Whole Language & Intergrated Skill Approach in Mainstream University Classrooms in Turkey. *Mediterranean Journal of Social Sciences, 5*(9), 672. <https://doi.org/10.5901/mjss.2014.v5n9p672>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY, US: W H Freeman/Times Books/ Henry Holt & Co.
- Bandura, A. (2008). Toward an agentic theory of the self. In H. W. Marsh, R. G. Craven, & D. M. McInerney (Eds.), *Self-processes, learning, and enabling human potential: Dynamic new approaches* (pp. 15–49). Char-lotte, NV.: Information Age Publishing.
- Bandura, A. (2015). Cultivate Self-efficacy for Personal and Organizational Effectiveness. In *Handbook of Principles of Organizational Behavior* (pp. 179–200). Wiley-Blackwell. <https://doi.org/10.1002/9781119206422.ch10>
- Barche, M. N. (2020). Profiling Learner Language as a Dynamic System. *System, 88*, 102192. <https://doi.org/10.1016/j.system.2019.102192>
- Bates, R., III, E. F. H., & Hatala, J. P. (2012). A revised learning transfer system inventory: Factorial replication and validation. *Human Resource Development International, 15*(5), 549–569. <https://doi.org/10.1080/13678868.2012.726872>

- Beavers, A. S., Lounsbury, J. W., Richards, J. K., Huck, S. W., Skolits, G. J., & Esquivel, S. L. (2013). Practical considerations for using exploratory factor analysis in educational research. *Practical Assessment, Research & Evaluation, 18*. Retrieved from <http://pareonline.net/pdf/v18n6.pdf>
- Bell, B. S., Tannenbaum, S. I., Ford, J. K., Noe, R. A., & Kraiger, K. (2017). 100 years of training and development research: What we know and where we should go. *Journal of Applied Psychology, 102*(3), 305–323. <https://doi.org/10.1037/apl0000142>
- Bentler, P. M. (1992). On the fit of models to covariances and methodology to the Bulletin. *Psychological Bulletin, 112*(3), 400–404. <https://doi.org/10.1037/0033-2909.112.3.400>
- Boo, Z., Dörnyei, Z., & Ryan, S. (2015). L2 motivation research 2005–2014: Understanding a publication surge and a changing landscape. *System, 55*, 145–157. <https://doi.org/10.1016/j.system.2015.10.006>
- Botes, E., Gottschling, J., Stadler, M., & Greiff, S. (2020). A systematic narrative review of International Posture: What is known and what still needs to be uncovered. *System, 90*, 102232. <https://doi.org/10.1016/j.system.2020.102232>
- Browne, M. W., & Cudeck, R. (1992). Alternative Ways of Assessing Model Fit. *Sociological Methods & Research, 21*(2), 230–258. <https://doi.org/10.1177/0049124192021002005>
- Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review, 6*(3), 263–296. <https://doi.org/10.1177/1534484307303035>
- Carver, D. (1983). Some propositions about ESP. *The ESP Journal, 2*(2), 131–137. [https://doi.org/10.1016/0272-2380\(93\)90003-P](https://doi.org/10.1016/0272-2380(93)90003-P)

- Cherian, J., & Jacob, J. (2013). Impact of self efficacy on motivation and performance of employees. *International Journal of Business and Management*, 8(14), 80.
<http://dx.doi.org/10.5539/ijbm.v8n14p80>
- Chiaburu, D. S., & Lindsay, D. R. (2008). Can do or will do? The importance of self-efficacy and instrumentality for training transfer. *Human Resource Development International*, 11(2), 199–206. <https://doi.org/10.1080/13678860801933004>
- Cope, L. (2009). CB BULATS: Examining the reliability of a computer-based test. *Cambridge ESOL: Research Notes*, 38, 31–34. Retrieved from http://cambridgeesol.org/rs_notes/rs_nts38.pdf
- Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, 78(1), 98–104. <https://doi.org/10.1037/0021-0107.78.1.98>
- Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation*, 10(7), 1–9.
- Dashtestani, R., & Stojkovic, N. (2016). The use of technology in English for Specific Purposes (ESP) instruction: A literature review. *Journal of Teaching English for Specific and Academic Purposes*, 3(3), 435–456. Retrieved from <http://espeap.junis.ni.ac.rs/index.php/espeap/article/view/304>
- DeKeyser, R. M. (2009). Cognitive-Psychological Processes in Second Language Learning. In *The Handbook of Language Teaching* (pp. 119–138). Wiley-Blackwell. <https://doi.org/10.1002/9781444315783.ch8>
- DeVellis, R. F. (2016). *Scale development: Theory and applications*. Thousand Oaks, CA, US: Sage Publications, Inc. psych (1991-98125-000).

- Devos, C., Dumay, X., Bonami, M., Bates, R., & Holton, E. (2007). The Learning Transfer System Inventory (LTSI) translated into French: Internal structure and predictive validity. *International Journal of Training and Development, 11*(3), 181–199. <https://doi.org/10.1111/j.1468-2419.2007.00280.x>
- Dudley-Evans, T., & St John, M. J. (1998). *Developments in English for specific purposes: A multi-disciplinary approach*. Cambridge: Cambridge university press.
- Education First. (2017). English proficiency index 2017. *Database Online Available at: < Ef. Se/Epi>*[Accessed: 08-01-2016]. Retrieved from <https://www.ef.com/ca/epi/downloads/>
- Ellington, J. K., Surface, E. A., Blume, B. D., & Wilson, M. A. (2015). Foreign Language Training Transfer: Individual and Contextual Predictors of Skill Maintenance and Generalization. *Military Psychology, 27*(1), 36–51. <https://doi.org/10.1037/mil0000064>
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4*(3), 272–299. <https://doi.org/10.1037/1082-989X.4.3.272>
- Federici, R. A. (2013). Principals' self-efficacy: Relations with job autonomy, job satisfaction, and contextual constraints. *European Journal of Psychology of Education, 28*(1), 73–86. <https://doi.org/10.1007/s10212-011-0102-5>
- Fenouillet, F., Heutte, J., & Vallerand, R. J. (2015). Validation of the adult education motivation scale. In *Fourth World Congress on Positive Psychology (IPPA), Orlando, Florida*. Retrieved from https://www.researchgate.net/publication/289127284_Validation_of_the_Adult_Education_Motivation_Scale_Echelle_de_Motivation_en_Formation_des_Adultes_EMFA

- Gao, X. (2010). *Strategic language learning: The roles of agency and context*. Bristol, England: Multilingual Matters.
- Geranpayeh, A. (2001). CB BULATS: Examining the reliability of a computer based test using test-retest method. *Research Notes*, 5, 14–16.
- Gilmore, A. (2007). Authentic materials and authenticity in foreign language learning. *Language Teaching*, 40(2), 97–118. <https://doi.org/10.1017/S0261444807004144>
- Gravetter, F. J., & Wallnau, L. B. (2016). *Statistics for the behavioral sciences*. Cengage Learning.
- Grossman, R., & Salas, E. (2011). The transfer of training: What really matters. *International Journal of Training and Development*, 15(2), 103–120. <https://doi.org/10.1111/j.1468-2419.2011.00373.x>
- Harzing, A.-W., & Pudelko, M. (2013). Language competencies, policies and practices in multinational corporations: A comprehensive review and comparison of Anglophone, Asian, Continental European and Nordic MNCs. *Journal of World Business*, 48(1), 87–97. <https://doi.org/10.1016/j.jwb.2012.06.011>
- Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Publications.
- Hayes, A. F., & Cai, L. (2007). Using heteroskedasticity-consistent standard error estimators in OLS regression: An introduction and software implementation. *Behavior Research Methods*, 39(4), 709–722. <https://doi.org/10.3758/BF03192961>
- Hayes, A. F., Montoya, A. K., & Rockwood, N. J. (2017). The analysis of mechanisms and their contingencies: PROCESS versus structural equation modeling. *Australasian Marketing Journal (AMJ)*, 25(1), 76–81. <https://doi.org/10.1016/j.ausmj.2017.02.001>

- Hayton, J. C., Allen, D. G., & Scarpello, V. (2004). Factor Retention Decisions in Exploratory Factor Analysis: a Tutorial on Parallel Analysis. *Organizational Research Methods*, 7(2), 191–205. <https://doi.org/10.1177/1094428104263675>
- Hinkel, E. (2012). Current Perspectives on Teaching the Four Skills. *TESOL Quarterly*, 40(1), 109–131. <https://doi.org/10.2307/40264513>
- Holton III, E. F., Bates, R. A., Bookter, A. I., & Yamkovenko, V. B. (2007). Convergent and divergent validity of the learning transfer system inventory. *Human Resource Development Quarterly*, 18(3), 385–419. <https://doi.org/10.1002/hrdq.1210>
- Honicke, T., & Broadbent, J. (2016). The influence of academic self-efficacy on academic performance: A systematic review. *Educational Research Review*, 17, 63–84. <https://doi.org/10.1016/j.edurev.2015.11.002>
- Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, 6(1), 53–60.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Huang, C. (2016). Achievement goals and self-efficacy: A meta-analysis. *Educational Research Review*, 19, 119–137. <https://doi.org/10.1016/j.edurev.2016.07.002>
- Hutchins, H. M., Nimon, K., Bates, R., & Holton, E. (2013). Can the LTSI Predict Transfer Performance? Testing intent to transfer as a proximal transfer of training outcome. *International Journal of Selection & Assessment*, 21(3), 251–263. <https://doi.org/10.1111/ijsa.12035>

- Jayalakshmi, R. (2017). An Integrated Approach to Business English. *IUP Journal of English Studies*, 12(1), 70–73.
- Kahn, J. H. (2006). Factor Analysis in Counseling Psychology Research, Training, and Practice: Principles, Advances, and Applications. *The Counseling Psychologist*, 34(5), 684–718. <https://doi.org/10.1177/0011000006286347>
- Kim, D.-H., Wang, C., Ahn, H. S., & Bong, M. (2015). English language learners' self-efficacy profiles and relationship with self-regulated learning strategies. *Learning and Individual Differences*, 38(Supplement C), 136–142. <https://doi.org/10.1016/j.lindif.2015.01.016>
- Kline, R. B. (2011). *Principles and practice of structural equation modeling (3rd ed.)*. New York, NY, US: Guilford Press.
- Leonard, K. R. (2019). Examining the relationship between decoding and comprehension in L2 listening. *System*, 87, 102150. <https://doi.org/10.1016/j.system.2019.102150>
- Lihong, S. (2016). Empirical study on learners' self-efficacy in ESL/EFL context. *College Student Journal*, 50(3), 454–465.
- Marra, M. (2012). English in the Workplace. In B. Paltridge & S. Starfield (Eds.), *The Handbook of English for Specific Purposes* (pp. 175–192). <https://doi.org/10.1002/9781118339855.ch9>
- Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). In Search of Golden Rules: Comment on Hypothesis-Testing Approaches to Setting Cutoff Values for Fit Indexes and Dangers in Overgeneralizing Hu and Bentler's (1999) Findings. *Structural Equation Modeling: A Multidisciplinary Journal*, 11(3), 320–341. https://doi.org/10.1207/s15328007sem1103_2
- Martin, J. (2004). Self-Regulated Learning, Social Cognitive Theory, and Agency. *Educational Psychologist*, 39(2), 135–145. https://doi.org/10.1207/s15326985ep3902_4

- Mathews-Aydinli, J. (2008). Overlooked and understudied? A Survey of Current Trends in Research on Adult English Language Learners. *Adult Education Quarterly*, 58(3), 198–213. <https://doi.org/10.1177/0741713608314089>
- Mercer, S. (2011). Understanding learner agency as a complex dynamic system. *System*, 39(4), 427–436. <https://doi.org/10.1016/j.system.2011.08.001>
- Mills, N. (2014). Self Efficacy in Second Language Acquisition. In S. Mercer & M. Williams (Eds.), *Multiple Perspectives on the Self in SLA* (Vols. 1–vii, 188 pp., pp. 6–22). Bristol, England: Multilingual Matters.
- O’connor, B. P. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer’s MAP test. *Behavior Research Methods, Instruments, & Computers*, 32(3), 396–402. <https://doi.org/10.3758/BF03200807>
- O’Malley, J. M., & Chamot, A. U. (1993). *Learning Strategies in Second Language Acquisition*. Cambridge University Press, 40 West 20th St.
- Paltridge, B., & Starfield, S. (Eds.). (2012). Introduction. In *The Handbook of English for Specific Purposes* (pp. 1–4). <https://doi.org/10.1002/9781118339855.ch>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891. <https://doi.org/10.3758/BRM.40.3.879>
- Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The Science of Training and Development in Organizations. *Psychological Science in the Public Interest*, 13(2), 74–101. <https://doi.org/10.1177/1529100612436661>
- Schumacker, R. E., & Lomax, R. G. (2004). *A beginner’s guide to structural equation modeling*, 2nd ed. Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.

- Schunk, D. H., & Mullen, C. A. (2012). Self-efficacy as an engaged learner. In *Handbook of research on student engagement* (pp. 219–235). https://doi.org/10.1007/978-1-4614-2018-7_10
- Schwarz, N. (1999). Self-reports: How the questions shape the answers. *American Psychologist*, *54*(2), 93–105. <https://doi.org/10.1037/0003-066X.54.2.93>
- Stajkovic, A. D., & Luthans, F. (1998). Social cognitive theory and self-efficacy: Going beyond traditional motivational and behavioral approaches. *Organizational Dynamics*, *26*(4), 62–74. [https://doi.org/10.1016/S0090-2616\(98\)90006-7](https://doi.org/10.1016/S0090-2616(98)90006-7)
- Suvorov, R., & Hegelheimer, V. (2013). Computer-Assisted Language Testing. In *The Companion to Language Assessment* (pp. 594–613). American Cancer Society. <https://doi.org/10.1002/9781118411360.wbcla083>
- Vallerand, R. J. (1989). Vers une méthodologie de validation trans-culturelle de questionnaires psychologiques: Implications pour la recherche en langue française = Toward a methodology for the transcultural validation of psychological questionnaires: Implications for research in the French language. *Canadian Psychology/Psychologie Canadienne*, *30*(4), 662–680. <https://doi.org/10.1037/h0079856>
- van Mierlo, H., Rutte, C. G., Vermunt, J. K., Kompier, M. A. J., & Doorewaard, J. A. M. C. (2006). Individual autonomy in work teams: The role of team autonomy, self-efficacy, and social support. *European Journal of Work and Organizational Psychology*, *15*(3), 281–299. <https://doi.org/10.1080/13594320500412249>
- Verhelst, N., Van Avermaet, P., Takala, S., Figueras, N., & North, B. (2009). *Common European Framework of Reference for Languages: learning, teaching, assessment*. Cambridge University Press.

- Wang, C., Kim, D.-H., Bai, R., & Hu, J. (2014). Psychometric properties of a self-efficacy scale for English language learners in China. *System, 44*(Supplement C), 24–33. <https://doi.org/10.1016/j.system.2014.01.015>
- Wang, C., Kim, D.-H., Bong, M., & Ahn, H. S. (2013). Examining measurement properties of an English Self-Efficacy scale for English language learners in Korea. *International Journal of Educational Research, 59*(Supplement C), 24–34. <https://doi.org/10.1016/j.ijer.2013.02.004>
- Wang, C., Schwab, G., Fenn, P., & Chang, M. (2013). Self-efficacy and self-regulated learning strategies for English language learners: Comparison between Chinese and German college students. *Journal of Educational and Developmental Psychology, 3*(1), 173. <https://doi.org/10.5539/jedp.v3n1p173>
- Watkins, M. W. (2006). Determining parallel analysis criteria. *Journal of Modern Applied Statistical Methods, 5*(2), 344–346. Retrieved from <http://digitalcommons.wayne.edu/jmasm/vol5/iss2/35>
- Worthington, R. L., & Whittaker, T. A. (2006). Scale Development Research: A Content Analysis and Recommendations for Best Practices. *The Counseling Psychologist, 34*(6), 806–838. <https://doi.org/10.1177/0011000006288127>
- Xie, Q. (2014). *Investigating the effectiveness of English for occupational purpose (EOP) training: Corporate programs in China* (PhD Thesis). Hong Kong: The Hong Kong Institute of Education.
- Yamao, S., & Sekiguchi, T. (2015). Employee commitment to corporate globalization: The role of English language proficiency and human resource practices. *Journal of World Business, 50*(1), 168–179. <https://doi.org/10.1016/j.jwb.2014.03.001>

Tables

Table 1
Exploratory Factor analysis of the professional English self-efficacy questionnaire

Item	Factor 1	Factor 2	Factor 3	<i>h</i> ²	Descriptive statistics			
					<i>M</i>	<i>SD</i>	<i>Skew</i>	<i>K</i>
O1			-.47	.57	5.21	1.02	-0.38	0.15
O2		.69		.79	3.78	1.28	0.09	-0.16
O3		.67		.80	3.69	1.24	-0.18	-0.45
O4		.67		.79	4.22	1.24	-0.29	-0.25
O5	.32		-.38	.62	4.81	1.19	-0.33	-0.25
O6		.63		.76	3.85	1.21	-0.06	-0.38
O7	.35		-.41	.68	4.71	1.18	-0.22	-0.53
O8	.42			.45	5.52	1.09	-0.55	-0.02
E1			-.61	.62	5.08	1.18	-0.72	0.77
E2			-.70	.55	5.14	1.14	-0.53	0.60
E3			-.86	.75	5.18	1.06	-0.63	0.80
E4			-.80	.80	5.09	1.21	-0.65	0.42
E5			-.85	.79	5.08	1.14	-0.39	-0.03
E6			-.75	.65	4.54	1.24	-0.34	-0.24
E7			-.78	.82	5.00	1.17	-0.56	0.36
E8			-.64	.62	5.33	1.16	-0.96	1.19
C1	.80			.65	5.65	1.14	-0.83	0.44
C2	.53			.49	4.54	1.14	-0.39	0.23
C3	.44			.54	4.81	1.10	-0.37	0.31
C4	.93			.77	5.72	0.96	-0.58	-0.01
C5	.81			.72	4.74	1.21	-0.42	0.02
C6	.73			.56	5.37	1.20	-0.80	0.53
C7	.80			.70	5.04	1.13	-0.52	0.18
C8	.76			.67	5.01	1.13	-0.55	-0.05
t1	.53			.55	5.28	1.22	-0.86	0.73
t2	.68			.73	4.99	1.41	-0.75	0.23
t3	.74			.76	5.55	1.14	-0.94	1.01
t4	.44			.46	4.87	1.04	-0.03	-0.91
t5	.73			.78	5.74	1.08	-1.05	1.34
t6			-.58	.53	4.06	1.23	-0.17	-0.40
t7	.70			.72	5.09	1.29	-0.71	0.23
t8	.75			.73	4.52	1.48	-0.36	-0.46
Eigenvalue	18.97	2.03	1.31					
% Variance	59.28	6.35	4.09					
Cronbach α	.96	.94	.95					

Note. O = Listening; E = Speaking; C = Reading; t = Writing; *M* = mean ; *SD* = Standard Deviation; *h*² = communality coefficient after extraction; *Skew* = skewness; *K* = Kurtosis..
N = 246. Loadings below .32 in absolute value are not reported.

Table 2
Model fit indices for the Professional English Self-Efficacy Questionnaire.

Model	χ^2	df	p	χ^2/df	TLI	CFI	SRMR	RMSEA	RMSEA 90%LOW	RMSEA 90%HIGH	BIC	AIC
Four cognitive skills subscales												
A	1617.90	458	<.001	3.53	.88	.89	.065	.092	.088	.097	2016.46	1757.90
B	1642.60	460	<.001	3.57	.88	.89	.066	.093	.088	.098	2029.77	1778.60
One factor structure												
C	2360.85	464	<.001	5.09	.81	.82	.056	.118	.113	.122	2725.25	2488.85
CEFR structure												
D	1578.63	457	<.001	3.45	.89	.89	.067	.091	.086	.096	1982.88	1720.63
PESEQ 3-factor structure												
E	1489.34	461	<.001	3.23	.90	.90	.043	.087	.082	.092	1870.82	1623.34
F	1489.34	461	<.001	3.23	.90	.90	.043	.087	.082	.092	1870.82	1623.34

Note. χ^2 = Chi-square; BIC = Bayesian Information Criterion; AIC = Akaike Information Criterion; TLI = Tucker Lewis index; CFI = Comparative fit index; SRMR = Standardized Root Mean Residual, RMSEA = Root Mean Square Error of Approximation.

Table 3
Phase 2 and 3 descriptive Statistics

a) Perception scales and test scores	N	M	SD	Skew	K	α			
Professional English Self-Efficacy Scale									
PESEQ-Written communication	297	4.88	1.06	-.70	.60	.97			
PESEQ-Oral communication	297	4.67	1.11	-.61	.50	.97			
PESEQ-Media understanding	297	3.69	1.17	-.07	-.15	.94			
Global PESEQ score	297	4.66	1.04	-.62	.58	.98			
Motivation to learn - The Adult Education Motivation Scale (Fenouillet & al., 2015)									
Controlled motivation	135	2.02	.79	.48	-.71	.81			
Extrinsic autonomous motivation	135	3.28	.72	-.27	-.34	.75			
Intrinsic Motivation	135	3.78	.82	-.95	1.19	.81			
Autonomous motivation (intrinsic and extrinsic)	135	3.44	.66	-.26	-.35	.82			
LTSI subscales (Bates & al., 2012)									
Motivation to transfer	135	3.32	.73	-.33	1.06	.81			
Performance Self-Efficacy	135	3.40	.68	-.45	.53	.81			
Learning outcomes									
Perceived far transfer	111	3.53	.66	-1.29	3.25	.94			
BULATS exam	193	51.20	18.90	.00	-.82	-			

b) Professional needs assessment	N	M	SD	Skew	K	Frequency of need in sample (%)			
						No need	Occasionally	Quite frequent	Frequent
Visitor reception	297	.90	.78	.86	.77	30.98	53.87	9.76	5.39
Telephone	297	1.23	1.00	.27	-1.03	28.96	31.65	26.94	12.46
Meeting participation	297	1.12	.89	.36	-.68	27.61	40.07	25.25	7.07
Meeting presentation	297	.81	.76	.71	.15	37.71	46.46	13.13	2.69
Negotiation	297	.50	.70	1.36	1.53	60.27	31.31	6.73	1.68
Social interactions	297	.91	.89	.64	-.47	39.06	36.36	19.19	5.39
Reading	297	1.64	1.17	-.25	-1.43	25.93	15.15	27.61	31.31
Writing	297	1.31	1.02	.17	-1.12	26.94	29.63	28.96	14.48
Written comm (mean)	297	1.48	1.01	-.14	-1.22				
Oral comm (mean)	297	.91	.67	.34	-.53				

Note. M = mean; SD = Standard Deviation; Skew = skewness; K = Kurtosis; α = Cronbach's alpha. Frequency of need: Occasionnally = once a month; Quite frequent = once a week on average; Frequent = once a day or more.

Table 4
Phase 3 correlations

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1 Global PESEQ score																				
2 PESEQ-Written	.98**																			
3 PESEQ-Oral	.97**	.93**																		
4 PESEQ-Media	.79**	.70**	.72**																	
5 MTL - Controlled	-.10	-.13	-.05	-.10																
6 MTL - Autonomous	.22**	.20*	.26**	.12	.54**															
7 MTL - Intrinsic	.29**	.26**	.31**	.20*	.19*	.52**														
8 Motivation to transfer	.36**	.34**	.40**	.22*	.20*	.40**	.28**													
9 Performance self-efficacy	.32**	.26**	.34**	.35**	.03	.20*	.20*	.50**												
10 Perceived far transfer	.36**	.36**	.38**	.18	.18	.40**	.18	.60**	.42**											
11 BULATS Scores	.68**	.66**	.65**	.54**	-.23**	-.02	.11	.14	.24**	.14	-									
Professional needs																				
12 Visitor reception	.13*	.13*	.14*	.05	.00	-.01	-.13	.06	.05	.14	.10									
13 Telephone	.34**	.33**	.35**	.22**	.01	.09	-.08	.21*	.15	.23*	.35**	.61**								
14 Meeting participation	.28**	.25**	.30**	.20**	-.02	.04	.02	.15	.03	.10	.34**	.35**	.58**							
15 Meeting presentation	.31**	.30**	.30**	.24**	.02	.02	-.05	.18*	.11	.16	.37**	.55**	.64**	.66**						
16 Negotiation	.26**	.23**	.27**	.19**	.00	-.03	-.10	.04	.03	.12	.21**	.43**	.48**	.51**	.50**					
17 Social interactions	.31**	.29**	.32**	.21**	.02	.03	.01	.09	.12	.10	.29**	.42**	.59**	.55**	.56**	.46**	-			
18 Reading	.26**	.27**	.26**	.17**	.03	.10	-.10	.13	.11	.18	.25**	.41**	.59**	.62**	.49**	.48**	.59**			
19 Writing	.28**	.29**	.27**	.14*	-.08	.03	-.06	.03	.05	.15	.23**	.46**	.55**	.50**	.53**	.42**	.43**	.67**	-	
20 Written comm (mean)	.29**	.30**	.29**	.17**	-.02	.07	-.09	.09	.09	.18	.27**	.47**	.63**	.62**	.55**	.49**	.56**	.92**	.90**	-
21 Oral comm (mean)	.34**	.33**	.36**	.23**	.01	.03	-.07	.16	.11	.19*	.37**	.71**	.85**	.79**	.83**	.71**	.78**	.69**	.62**	.72**

Note. BULATS = Business Language Testing Service; MTL = motivation to learn. * $p < .05$; ** $p < .01$.

Table 5*Summary information for the mediation model of motivational pathway between EFL self-efficacy and perceived transfer*

	Independent variables												
	Md1: Autonomous motivation to learn			Md2: Performance self-efficacy			Md3: Motivation to transfer			Y : Perceived transfer			
Antecedents	B	SE	β	B	SE	β	B	SE	β	B	SE	β	
Constant	2.69***	.28		1.81***	.60		.04	.51		1.04*	.47		
English Self-efficacy (X)	.16**	.06	.24**	.22*	.09	.30*	.18	.11	.24	.07	--	.10	
Autonomous motivation (Md1)	--	--	--	.15	.09	.14	.32***	.09	.29**	.13	.09	.13	
Performance Self-efficacy (Md2)	--	--	--	--	--	--	.39**	.12	.37**	.13	.14	.14	
Motivation to transfer (Md3)	--	--	--	--	--	--	--	--	--	.39**	.12	.43**	
Total indirect effect										.18		.26	
CI - 95% bootstrap										[.09; .28]		[.14; .38]	
R^2		.06			.13			.41			.40		
<i>F</i> modèle		$F(1,109) = 7.72^{**}$			$F(2,108) = 3.69^*$			$F(3,107) = 18.46^{***}$			$F(4,106) = 9.49^{***}$		

Note. N = 111. Ordinary Least Square regression analysis. Model total effect = .24**. CI = 95% confidence interval based on 10,000 bootstrap sample.

X : independent variable; Md = mediator; Co = covariable; B = non-standardized regression coefficient; β = standardized regression coefficient; SE : standard error estimated with an Heteroskedasticity Consistent Standard Error Estimator (HC3).

* $p < .05$; ** $p < .01$; *** $p < .001$.

Figures with captions

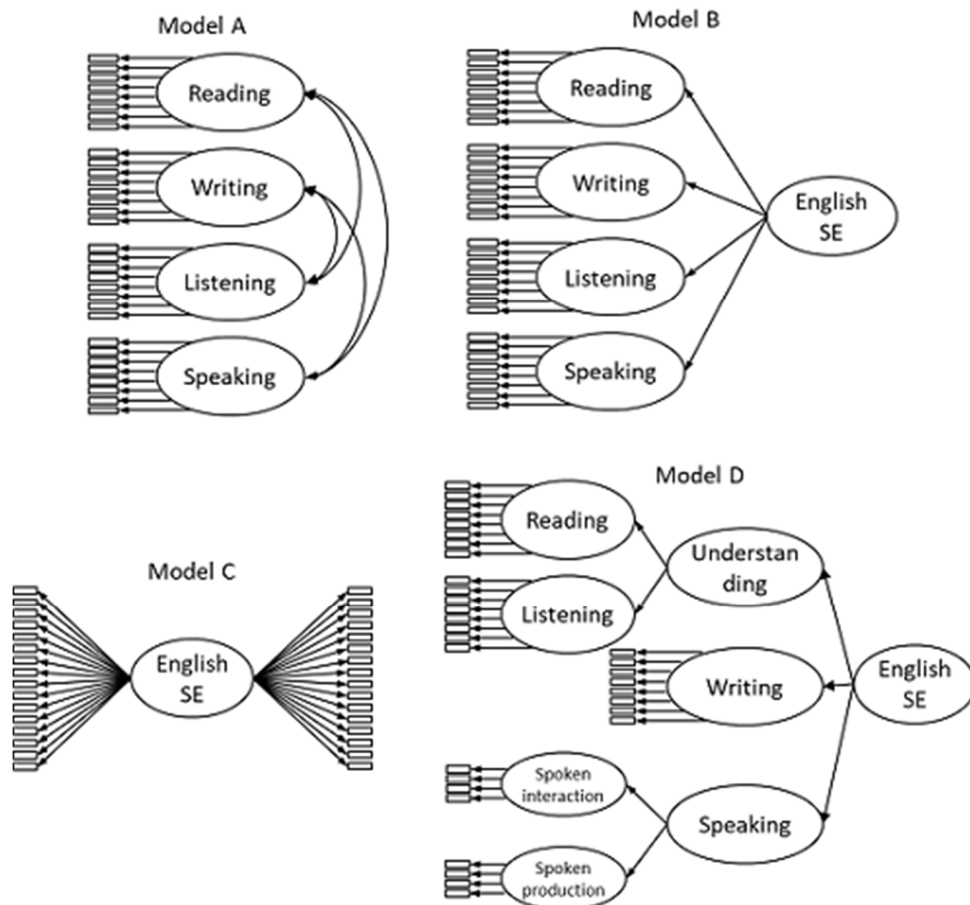


Figure 1. Models of professional English self-efficacy adapted from Wang & al. (2013) and the CEFR framework (2012)

Note. SE = self-efficacy; CEFR = Common European Framework of Reference for Languages.

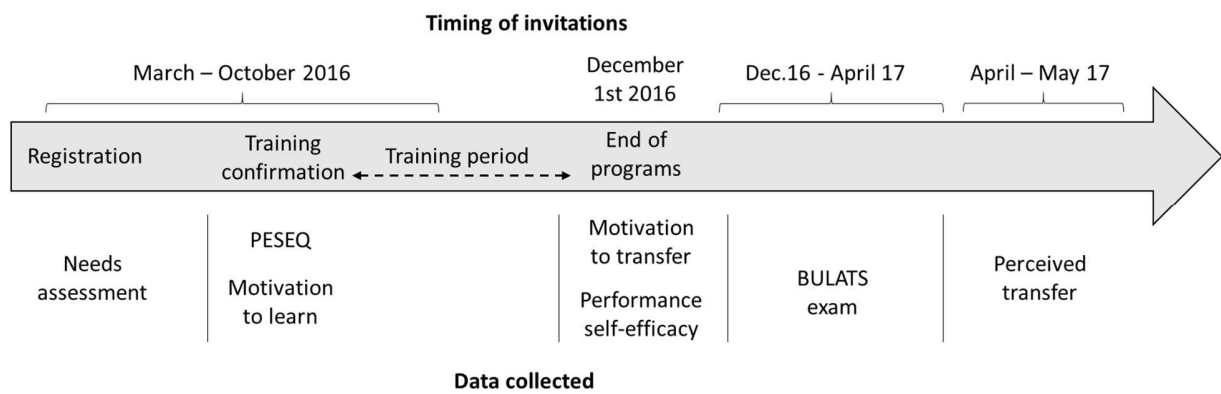


Figure 2. Diagram of the data collection process from the registration period of participants until six months after the end of the training programs.

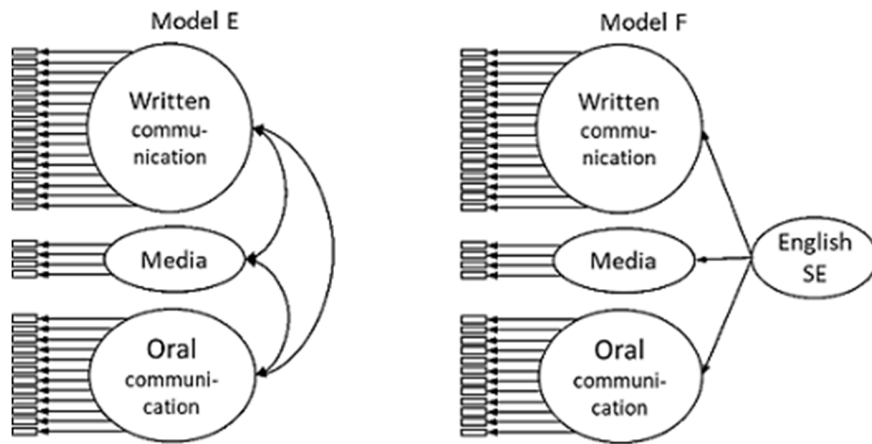


Figure 3. Models of Professional English self-efficacy (PESEQ) based on phase 1 factorial analysis.

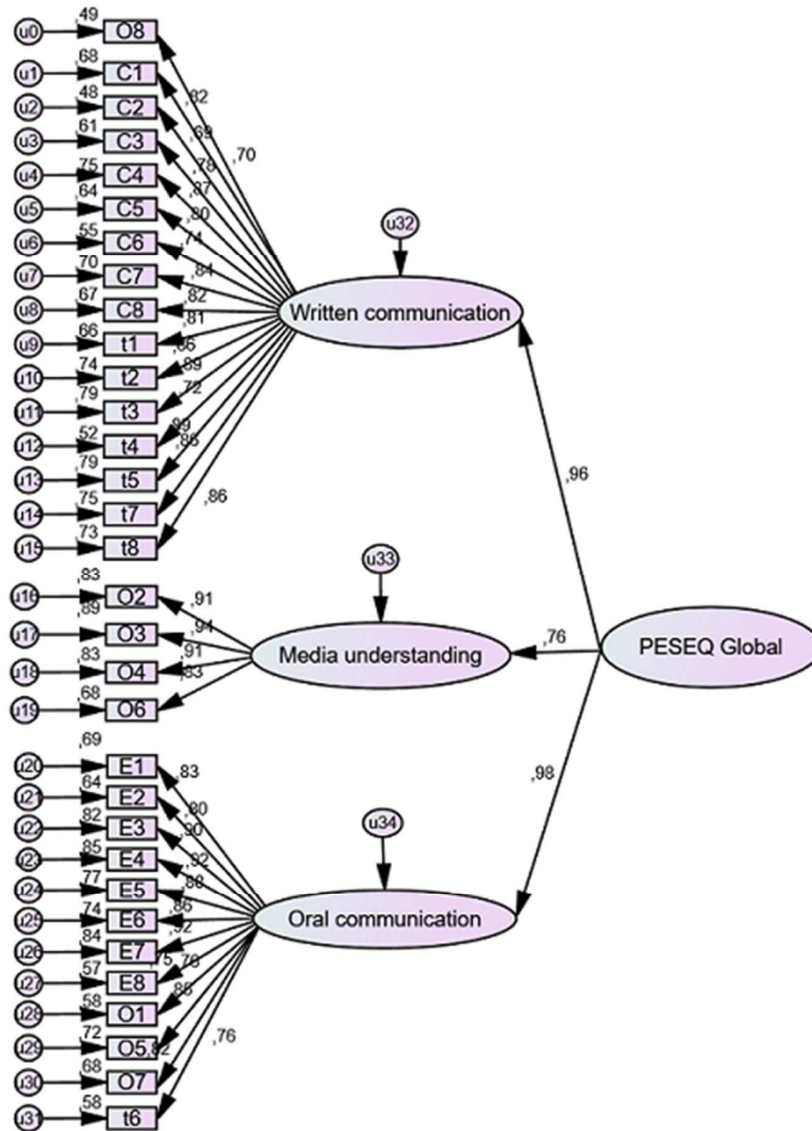
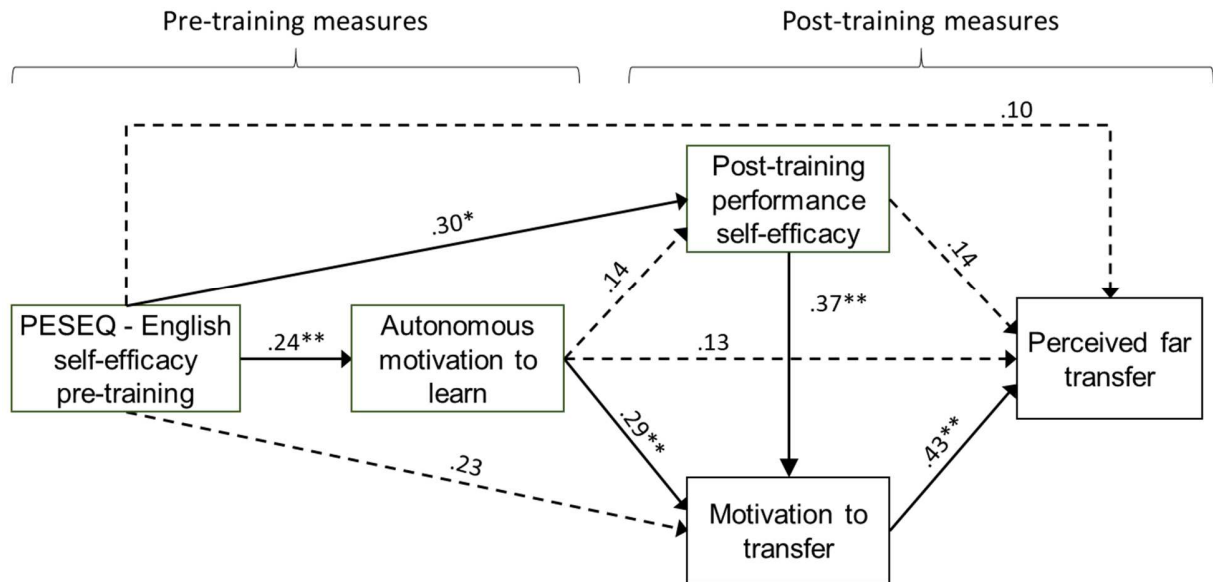


Figure 4. Confirmatory Factor Structure of the Professional English self-efficacy scale – Model F
 Note. O = Listening; E = Speaking; C = Reading; t = Writing.



Note. N = 111. Model total effect = .25**, $R^2 = .40$. CI = 95% confidence interval based on 10,000 bootstrap sample. Standardized regression coefficients are displayed. Links with non-significant coefficients below $\pm .10$ not reported. * $p < .05$; ** $p < .01$; *** $p < .001$.

Figure 5. Mediation model of the motivational pathways between EFL self-efficacy and perceived transfer.

Appendix

French and English version of the professional English self-efficacy questionnaire

Responses were coded on a 7-point Likert scale (1 = “I cannot do it at all”; 7 = “I can do it very well”). Cross-cultural translation process following Vallerand & al.’s (1989) recommendations.

N°	Cognitive task	Factor	French	English*
1	O1	OR	Pouvez-vous comprendre des explications orales en anglais ?	Can you understand oral explanations in English?
2	C1	WR	Pouvez-vous réaliser vos activités professionnelles seul/e quand il faut lire et comprendre des textes en anglais ?	Can you conduct your professional activities alone when you need to read and understand texts in English?
3	O2	ME	Pouvez-vous comprendre des émissions de télévision américaines en anglais ?	Can you understand American TV programs (in English)?
4	E1	OR	Pouvez-vous décrire votre entreprise à d'autres personnes en anglais ?	Can you describe your company to other people in English?
5	t1	WR	Pouvez-vous rédiger des messages en anglais sur Internet (Facebook, Yammer, Twitter, blogs, etc) ?	Can you compose messages in English on the internet (Facebook, Yammer, Twitter, blogs, etc.)?
6	E2	OR	Pouvez-vous décrire en anglais le chemin que vous empruntez pour aller de chez vous à votre travail ?	Can you describe the way to work from the place where you live in English?
7	E3	OR	Pouvez-vous donner une explication en anglais ?	Can you give an explanation in English?
8	t2	WR	Pouvez-vous écrire un texte, préparer une présentation en anglais ?	Can you write a text or prepare a presentation in English?
9	O3	ME	Pouvez-vous comprendre des émissions de radio en provenance de pays anglophones ?	Can you understand radio programs in English-speaking countries?
10	O4	ME	Pouvez-vous comprendre des émissions de télévision en anglais produites en France ?	Can you understand English-language TV programs made in your home country?
11	t3	WR	Pouvez-vous laisser un message écrit pour un collègue en anglais ?	Can you leave a written message for a colleague in English?
12	C2	WR	Pouvez-vous deviner le sens de mots inconnus lorsque vous lisez un texte en anglais ?	Can you guess the meaning of unknown words when you are reading an English text?
13	t4	WR	Pouvez-vous faire de nouvelles phrases à partir de mots que vous venez d'apprendre ?	Can you form new sentences from words you have just learned?
14	t5	WR	Pouvez-vous écrire des e-mails en anglais ?	Can you write e-mails in English?
15	O5	OR	Pouvez-vous comprendre des dialogues en anglais (en téléconférence ou à partir d'enregistrements audio) qui traitent de la vie professionnelle de tous les jours ?	Can you understand conversations in English (telephone conferences or audio recordings) about everyday professional topics?
16	C3	WR	Pouvez-vous comprendre des messages ou des actualités en anglais sur Internet ?	Can you understand messages or news in English on the Internet?
17	E4	OR	Pouvez-vous poser des questions à vos collègues / managers / collaborateurs en anglais ?	Can you ask your colleagues/managers/collaborators questions in English?

N°	Cognitive task	Factor	French	English*
18	t6	OR	Pouvez-vous faire des phrases en anglais en utilisant des expressions idiomatiques ?	Can you make sentences in English using idiomatic expressions?
19	E5	OR	Pouvez-vous présenter votre collègue / manager / collaborateur (à quelqu'un d'autre) en anglais ?	Can you introduce your colleague/manager/collaborator (to someone else) in English?
20	E6	OR	Pouvez-vous discuter de sujets d'intérêt général avec vos collègues en anglais ?	Can you discuss subjects of general interest with your colleagues (in English)?
21	C4	WR	Pouvez-vous lire des documents courts en anglais ?	Can you read short documents in English?
22	O6	ME	Pouvez-vous comprendre des films/vidéos en anglais sans sous-titres ?	Can you understand films/videos in English without subtitles?
23	E7	OR	Pouvez-vous répondre aux questions de votre collègue / manager / collaborateur en anglais ?	Can you answer a colleague/manager/collaborator's questions in English?
24	O7	OR	Pouvez-vous comprendre des discours (présentation en réunion, séminaire, conférence...) en anglais ?	Can you understand speeches (meeting, seminar, conference presentations, etc.) in English?
25	C5	WR	Pouvez-vous lire des journaux en langue anglaise ?	Can you read English-language newspapers?
26	C6	WR	Pouvez-vous trouver le sens de mots nouveaux en utilisant un dictionnaire (papier ou en ligne) monolingue (anglais uniquement) ?	Can you find the meaning of new words using a monolingual (English only) dictionary (paper or online)?
27	O8	WR	Pouvez-vous comprendre des numéros de téléphone qui vous sont dictés en anglais ?	Can you understand telephone numbers when they are dictated to you in English?
28	t7	WR	Pouvez-vous rédiger vos missions, activités professionnelles en anglais ?	Can you write about your professional duties and activities in English?
29	C7	WR	Pouvez-vous comprendre des articles en anglais qui portent sur la culture française ?	Can you understand articles in English about your own country culture?
30	E8	OR	Pouvez-vous vous présenter en anglais ?	Can you introduce yourself in English?
31	t8	WR	Pouvez-vous rédiger un texte professionnel d'environ deux pages en anglais ?	Are you able to write a professional document of about two pages in English?
32	C8	WR	Pouvez-vous comprendre les textes à lire (par exemple, des articles d'actualité issus de la presse anglophone) en anglais choisis par votre formateur ?	Can you understand new reading materials (e.g., news from the Time magazine) selected by your trainer/facilitator?

Note. C = read; t = writing; E = speaking; O = listening; OR = oral communication; WR = written communication; ME = media understanding.