

*L2 motivation, anxiety and self-efficacy:  
The interrelationship of individual variables  
in the secondary school context*

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Abstract

Our study describes the relationship of second language learning motivation, self-efficacy, and anxiety; that is, how motivation, cognition, and affect might interact during the process of second language learning. Questionnaire data were collected from 236 Hungarian students studying at various secondary schools. Structural equation modeling was used to investigate the proposed circular relationship of students' motivated learning behavior, language learning experience, self-efficacy beliefs, and both debilitating and facilitating anxiety. Our results indicate that: (a) the process of motivation is complex and influenced by other individual difference (ID) variables, and (b) the investigation of ID variables in constellations rather than in isolation seems to be more fruitful in understanding language learner differences.

*Keywords:* anxiety, motivation, self-efficacy, individual variables, variable complex

Individual difference (ID) variables have been repeatedly shown to contribute to language learning success to a great degree (Dörnyei, 2005). Hence, studies in applied linguistics on individual variables have proliferated in the last decades, and as a result, an increasingly diverse picture is unfolding as to what accounts for differences in foreign language attainment. This diversity is apparent in the many studies that claim the ultimate importance of different ID factors, for example, motivation (Dörnyei & Ushioda, 2011), language aptitude (Skehan, 2012), personality (e.g., Ehrman, 1996), and language anxiety (e.g., Horwitz & Young, 1991). Second, the number of ID variables seems to be growing continuously with the introduction of constructs such as willingness to communicate, creativity, and self-efficacy, among others, into applied linguistics research.

By now it has been acknowledged that these ID factors interact with other contextual factors (including other ID variables) and that they indeed change over time; that is, they are no longer viewed as stable characteristics of the learner (Dörnyei, 2010). However, research remains confined to the investigation of ID variables in pairs or in relation to language learners' achievement, and only very few studies have focused on a constellation of these learner factors and their interrelationship (for an exception see, for example, Dörnyei & Tseng, 2009). Both DeKeyser (2012) and Dörnyei (2009, 2010) point this out and call for more research on the systematic interaction between ID variables. More specifically, Dörnyei (2009) outlines a tripartite framework of motivation, cognition, and affect, and suggests that a more meaningful way to study ID variables could be through the identification of such relatively stable constellations of learner characteristics, which would provide further understanding as to how ID factors affect language learning.

The aim of the present study was to investigate the complex relationship among three of the abovementioned ID variables, namely, language learning motivation in terms of two dimensions (motivated learner behavior and language learning experience; see Csizér & Dörnyei, 2005), cognition in terms of self-efficacy (Bandura, 1997), and affect in terms of the facilitating and debilitating effect (Eysenck, 1979; MacIntyre & Gardner, 1989) of foreign language classroom anxiety (Horwitz & Young, 1991), as constituents of the motivation-cognition-affect framework proposed by Dörnyei (2009). The study was conducted in the context of Hungarian secondary school students learning English as a foreign language with the hope of gaining a better insight as to the role of ID factors in foreign language learning.

## Background

### Motivation

Second language motivation studies have been traditionally at the forefront of English applied linguistics research in the past decades, as motivation is considered to be one of the most important ID variables contributing to the success of second language learning. L2 motivation is a complex construct; hence, several researchers have used slightly different definitions describing students' motivated behavior. Still, there is a common understanding that the definition of motivation should cover students' choice, effort and persistence in second language learning (Dörnyei & Ushioda, 2011).

In terms of the exceptionally large number of empirical studies, there have been several easily identifiable trends in the field. First, Gardner and his associates have been investigating the social-psychological aspect of L2 motivation in Canadian as well as several European contexts, in order to find out how positive attitudes towards the language and its speakers will affect students' motivation. Their most important contribution to the field is the conceptualization of the notion of integrativeness, which describes to what extent students intend to integrate into, or more generally to identify with, the L2 community (Gardner, 2006, 2012; Masgoret & Gardner, 2003). Second, Dörnyei, and subsequently his colleagues, have been known to link L2 motivation to self-related studies in psychology, in which the investigation of motivation is seen to be shaped by how students view their actual and possible selves as well as the relationship between these selves. Several studies have been dedicated to students' most important self, their ideal L2 self, to see how future guides contribute to students' learning behavior (Dörnyei & Ushioda, 2009). Third, it has been increasingly acknowledged that L2 motivation is a dynamically changing notion that ebbs and flows throughout the learning process (Ushioda, 2011). As a result, an increasing number of longitudinal investigations have looked into how and why motivational changes happen (Dörnyei & Ushioda, 2011).

Despite differences both in the research methods employed and the conceptualizations of the various motivation-related constructs, one common viewpoint in these studies is that they treat motivation as a dependent construct, which is in turn shaped by several antecedent variables. As a result, very few studies have researched how motivation will actually affect the learning process, and experience in general, and other ID type variables in particular. Taking L2 motivation as a starting point is especially important in language learning contexts such as Hungary. First of all, English is increasingly seen as a compulsory language to be learnt, and students at primary and secondary lev-

els often do not have a genuine choice of the second foreign language, either, as the language they study generally depends on whether the school employs teachers of the particular foreign language (Vágó, 2007). In addition, students do not have a choice at all concerning who teaches them English, and teachers sometimes change even within a single school year (Vágó, 2007). Moreover, studies in the Hungarian context have shown that teachers do not seem to be aware of the fact that they may be responsible for motivating their students; teachers often express the view that students are expected to come to L2 classes already motivated (Mezei, 2007; Nikolov, 1999a, 1999b). Consequently, in the present study, students' motivated learning behavior is conceptualized as part of a cyclical process affecting students' perceived language learning experience and then their self-efficacy.

### Self-efficacy

The construct of self-efficacy has appeared in many guises in applied linguistics research. Tremblay and Gardner (1995) in their structural model of ID variables describe an inverse relationship between language anxiety and self-efficacy, and claim that the former has a negative influence on the latter. In a revised version of their model Gardner, Tremblay, and Masgoret (1997) abandon the use of the label self-efficacy with a cognitive referent and substitute it with a very similar social concept of self-confidence, which also enters into a reciprocal relationship with language anxiety: Lower levels of self-confidence tend to co-occur with higher levels of language anxiety. Self-confidence also appears in studies as linguistic self-confidence (Clément, Dörnyei, & Noels, 1994; Noels, Pon, & Clément, 1996), self-perceptions, or self-ratings (MacIntyre, Noels, & Clément, 1997).

In the present study, in line with Bandura's (1986) definition, self-efficacy will be referred to as a cognitive construct which comprises "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). Wong (2005) in her research involving teacher trainees mentions "language self-efficacy beliefs" (p. 248) as a subtype of beliefs about language learning (see Horwitz, 1988). Thus, in the language learning context, self-efficacy beliefs can be said to refer to beliefs that one has the resources (a) in general, to learn a foreign language and reach a desired level of foreign language proficiency, and (b) more specifically, to perform foreign language related tasks successfully (Bandura, 1986, 1988). This divide is also closely linked conceptually to achievement goal theory of mastery and performance goal orientations in motivation (see Pintrich, 2000), where mastery goal orientation is associated with more general purposes and performance goals are linked to particular tasks.

Self-efficacy beliefs seem to have direct and indirect effect on different aspects of language learning. Mills, Pajares, and Herron (2007) in their research found self-efficacy to be a strong predictor of language learning success among college students of intermediate French. At the same time Zimmerman (2000) posits that self-efficacy beliefs influence motivation, more specifically learners' persistence and intended effort invested in learning. Furthermore, while Tremblay and Gardner (1995) suggest that language anxiety lowers learners' self-efficacy, Bandura (1988) postulates the opposite: Self-efficacy influences anxiety, as self-judgment of ineptness to perform a task evokes negative feelings. Either way, from the above it seems that self-efficacy, although not investigated to a large extent, plays an important role in the complex interaction of ID variables relevant to language learning success.

## Anxiety

The final individual variable in the present study which has been demonstrated to influence foreign language learning success, and which generally seems to inhibit the language learning process, is foreign language classroom anxiety (Horwitz & Young, 1991). The psychological construct of anxiety is defined as "the subjective feeling of tension, apprehension, nervousness, and worry associated with an arousal of the autonomic nervous system" (Spielberger, 1983, p. 1). Horwitz, Horwitz and Cope (1991), along with MacIntyre and Gardner (1991a, 1991b) and MacIntyre (1999), proposed that foreign language anxiety, or more precisely, foreign language classroom anxiety, is a situation-specific type of anxiety, which is experienced as recurring in the well-defined situation of the foreign language classroom.

Alpert and Haber (1960) in their pioneering work on academic achievement and anxiety distinguished between facilitating and debilitating effects of anxiety: Facilitating anxiety enhances performance, whereas debilitating anxiety inhibits it. Test anxiety research has widely dealt with the two contrasting notions (Sarason, 1980), and studies in sports psychology have also been published on the beneficial as well as the adverse effects of anxiety on performance (Tenenbaum & Eklund, 2007). Interestingly, however, the facilitating aspect of language anxiety has been rarely investigated in applied linguistics; Kleinmann's (1977) seminal paper is one exception. This paucity may be due to the presumption that facilitating anxiety is more commonly associated with cognitively less demanding tasks, whereas language learning is generally viewed as a complex task where anxiety is more likely to inhibit the learning process. Nonetheless, it must be noted that the findings of studies on language anxiety and its negative relationship with language proficiency (Horwitz,

1995; MacIntyre & Gardner, 1991a, 1991b; MacIntyre, Noels, & Clément, 1997), language learning motivation (Csizér & Dörnyei, 2005; Dörnyei, 2005; Dörnyei, Csizér, & Németh, 2006; MacIntyre, 2002), self-confidence (Clément, Gardner, & Smythe, 1980), and self-efficacy (Mills, Pajares, & Herron, 2007) have not produced straightforward results, as oftentimes they are based on interpretations of moderate correlations. This leads to the assumption that anxiety can indeed have a positive as well as a negative effect on language learning. Treating the two poles as one in quantitative studies has generated ambiguous results in applied linguistics research.

Another area of theoretical uncertainty involves the issue of measuring foreign language classroom anxiety. The most widely used instrument that is currently available for measuring language anxiety is the Foreign Language Classroom Anxiety Scale (FLCAS; Horwitz, 1991). The instrument purports to measure the constructs of communication apprehension, test anxiety and fear of negative evaluation; however, validation studies have not been able to fully confirm this componential structure (e.g., Aida, 1994; Cheng, Horwitz, & Schallert, 1999; Pérez-Paredes & Martínez-Sánchez, 2001; Tóth, 2008).

Another issue arising from the use of the FLCAS is that it focuses on measuring debilitating anxiety especially related to speaking in the foreign language classroom (Horwitz, Horwitz, & Cope, 1991; MacIntyre & Gardner, 1989). Thus, the debilitating-facilitating nature of anxiety is somewhat neglected and because cutoff scores have not been established as to who can be considered as an anxious language learner, researchers can only compare language learners to one another and discuss relatively high or low levels of foreign language classroom anxiety. Due to these considerations, in the present study we opted for using an instrument that measured the constructs of facilitating and debilitating anxiety in connection with language learning rather than use the widespread FLCAS.

#### Relationship Between Motivation and Anxiety via Self-Efficacy: The Hypothesized Model

In psychology, the relationship between motivation, cognition, and affect is portrayed as a rather complex phenomenon. In the past years, the close interconnection of these variables has resurfaced as the object of social cognitive research (Carver, 2006; Dai & Sternberg, 2004). Advocates of this line of study suggest that cognitive functioning occurs in context, and thus it is more meaningful to investigate it in interaction with motivation and emotion. This interaction, however, is characterized by an array of intertwined and multidirectional relationships and, as a result, has been studied mainly from two different perspectives: (a) some stud-

ies have focused on appraisal theory research and the role cognition plays in invoking emotion, whereas (b) other studies have explored the ways emotion affects cognitive processes (Linnenbrink & Pintrich, 2004).

The present study, in line with the first perspective, subscribes to the notion that emotion is directly prompted by appraisal, the cognitive component responsible for the evaluation of particular events (Lazarus, 1991; Scherer, 2001). According to Smith and Kirby (2001), appraisal "as the elicitor of emotions, plays a central role in the generation and differentiation of emotion" (p. 212). Emotion theorists further postulate that different types of appraisal evoke different emotions (Smith & Kirby, 2001); therefore, it is important to highlight here that the focus of the present study in terms of affect is restricted to investigating anxiety (namely, foreign language anxiety).

According to Lazarus's (1991) transactional model of coping, the experienced situation (also called a stressor) prompts the process of cognitive appraisal to evaluate the stressor and elicits the emotion of anxiety accordingly. Smith and Kirby (2009), closely based on Lazarus (1991), suggest that coping involves seven components, one of which is the notion of problem-solution coping potential (cf. Lazarus, 1991), "an assessment of the individual's ability to act on the situation" (Smith & Kirby, 2009, p. 123). This parallels the definition of self-efficacy cited above, and is in sync with what Jerusalem and Schwarzer (1992) also suggested earlier, namely that self-efficacy as described in social cognitive theory is present in the evaluative process of cognitive appraisal. Bandura's (1993) social cognitive theory of learning further posits that self-efficacy beliefs play a central role in initiating coping behavior, as well as the amount and the duration of effort invested in action, thus regulating motivation and behavior in terms of academic achievement. As a result, the present study treats self-efficacy as the cognitive determinant of anxiety as an affect.

Carver (2001) describes self-regulating feedback systems where goal pursuit (motivation), assessment of the distance of the goal (also part of appraisal; cf. Smith & Kirby, 2009), experience, and affect interact. Pintrich (2000) suggests that in achievement contexts mastery and performance goal orientations can involve motivation that prompts either approach or avoidant behavior. According to Elliot (2006), "approach motivation may be defined as the energization of behavior by, or the direction of behavior toward, positive stimuli (objects, events, possibilities), whereas avoidance motivation may be defined as the energization of behavior by, or the direction of behavior away from, negative stimuli (objects, events, possibilities)" (p. 112). Carver (2006) demonstrates this point by describing discrepancy reducing and discrepancy enlarging feedback loops; in other words, if the goal, in terms of performance, is accessible with the help of available resources, emotion enhances approach

behavior and the discrepancy of the present and target state decreases, generating positive experience and a further enhanced level of self-efficacy. Conversely, if the opposite is true, in other words, if the goal is inaccessible because of the unavailability of resources, negative emotion arises fostering avoidance behavior, and discrepancy between the present state and the desired state increases, which generates negative experiences and further fosters a low sense of self-efficacy (cf. Elliot, 2006; Higgins, 1997).

In simpler terms, high self-efficacy influences the affect of anxiety (i.e., higher levels of self-efficacy will lower the levels of anxiety) and motivation (i.e., higher levels of self-efficacy will be linked to higher levels of approach motivation). This means that learners with high levels of self-efficacy are likely to have more positive experiences (cf. Csíkszentmihályi's, 1997 concept of the flow experience) of learning a language. On the other hand, a lower sense of self-efficacy is associated with higher levels of anxiety and avoidance motivation, which is often linked to lower levels of positive experience (or at times even negative experience) of performance.

In light of this, Dörnyei (2010) suggests that when investigating the mental processes and characteristics of language learners, the three dimensions of motivation, cognition, and affect should be treated as parts of one intertwined framework. Within this general framework, Dörnyei (2010) further claims that there may be relatively stable constellations that "would make the system of learner characteristics/behavior predictable and therefore researchable" (p. 263). Hence, it is suggested that language learning motivation, foreign language anxiety, and self-efficacy readily lend themselves as such a variable complex, in spite of, or rather because of, the fact that empirical evidence so far has been ambiguous in terms of how these variables are interconnected (MacIntyre, Clément, Dörnyei, & Noels, 1998; MacIntyre, MacMaster, & Baker, 2001). On the one hand, motivation intensity seems to affect the learner's level of language anxiety (Gardner, Masgoret, & Tremblay, 1999); on the other hand, lack of anxiety does not necessarily imply a high level of motivation (Gardner, Day, & MacIntyre, 1992). Furthermore, motivation and anxiety have each been associated with self-efficacy, but again the relationships have not proved to be strong and straightforward.

The reasons behind the mixed results may be manifold. First of all, as mentioned above, there seems to be an inconsistency in terms of the relationship of the constructs. Oftentimes, language anxiety is subsumed as a component of language learning motivation (Tremblay & Gardner, 1995), and self-efficacy is sometimes confused with the more stable characteristic of self-confidence, also frequently described in applied linguistics as the lack of anxiety (MacIntyre, MacMaster, & Baker, 2001). Second, the inconsistent evidence of the relationship of these three variables may also stem from the fact that, in line with psychological theory, the link between these dimensions is most



probably cyclical, with experience and self-efficacy acting as moderators between motivation and anxiety. Finally, in applied linguistics research, with the exception of a few studies, investigations along the facilitating and debilitating divide of affect and its influence on motivation are scarce.

In line with a current trend in applied linguistics to investigate variable complexes as opposed to variables in isolation (DeKeyser, 2012; Robinson, 2002), the present paper proposes the following:

1. Self-efficacy and language anxiety are distinct from but closely linked with language learning motivation constructs.
2. Dörnyei's (2009) tripartite model of motivation-cognition-affect provides an adequate framework for understanding the cyclical relationship between the abovementioned three ID variables: language learning motivation, self-efficacy and foreign language classroom anxiety.
3. The framework of motivation-cognition-affect is likely to show different results concerning facilitating and debilitating language anxiety.

Thus, the research question guiding the study was formulated as follows: How do various motivation, anxiety, and self-efficacy related variables explain students' foreign language learning behavior?

With a view to the schematic representation of the model presented in Figure 1, the following five hypotheses were drawn up:

1. The perceived quality of the learning experience influences learners' self-efficacy beliefs about language learning: More positive experiences will enhance learners' sense of self-efficacy; negative experiences will lower learners' levels of self-efficacy.
2. Self-efficacy beliefs and cognition about the availability of resources influence the quality of the emotional experience:
  - a. Higher levels of self-efficacy are associated more closely with facilitating anxiety than debilitating anxiety.
  - b. Lower levels of self-efficacy are associated with higher levels of debilitating anxiety.
3. Foreign language anxiety influences motivated language learning behavior:
  - a. Debilitating anxiety causes avoidance behavior, hence it is associated with lower levels of motivation.
  - b. Facilitating anxiety contributes to approach behavior and positively influences motivated language learning behavior.
4. Motivated language learning behavior influences the quality of the language learning experience.

Based on the theoretical considerations outlined above, we set out to test the interrelationships of the model detailed in Figure 1.

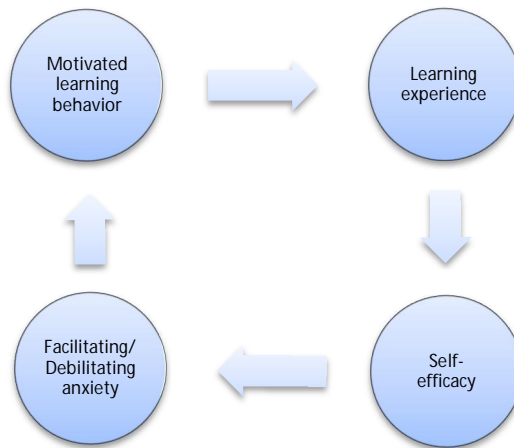


Figure 1 The schematic representation of the hypothesized model

## Method

### Participants

The study was conducted in the spring term of 2011 in Hungary with secondary school students. The Hungarian questionnaire was filled in by 236 participants (boys,  $n = 108$ ; girls,  $n = 127$ ;  $n = 1$  without indication of gender) from 4 different secondary schools located in various parts of the Hungarian capital city of Budapest. We used stratified random sampling, which meant that we randomly selected secondary schools and in each school all year 10 students filled in the questionnaire. The age of the participants ranged from 14 to 17 with an average age of 15. All the students studied English as a foreign language at school and their average age of starting to learn the language was 9. These students had an average of 6 English lessons a week (ranging from 3 to 16). Most of the students ( $n = 128$ ) claimed to have an intermediate level of knowledge and the majority of them ( $n = 202$ ) intended to choose English as one of the subjects for their school-leaving examination.

### Instrument

The four of the five scales adapted for the present study were drawn from two different previously standardized instruments (Alpert & Haber, 1960;

Ryan, 2005) and one, the self-efficacy scale, was compiled specifically for this study. The resulting tool was pre-piloted (for the procedures see below). A description of each scale and the scale items will be presented below (for the items themselves see Appendix A). We have also calculated the Cronbach alpha measures for each scale, which gives information on the internal consistency of the scales, that is, how reliably items contributing to the scales operationalize the proposed construct (Dörnyei, 2007).

**Motivated learning behavior.** This scale was adapted from Ryan (2005); it was piloted by Gálik (2006) for the Hungarian context, and was finalized by Kormos and Csizér (2008). Five items on a 5-point Likert-scale operationalized to what extent students were willing to work hard and persist to learn English (Cronbach's alpha = .81). This standardized scale is regularly used as the main dependent scale in empirical studies around the world to measure students' intended behaviour (see Dörnyei & Ushioda, 2011).

**Language learning experience.** This scale was taken from Ryan (2005); it was piloted by Gálik (2006) for the Hungarian context and finalized by Kormos and Csizér (2008). Four items on a 5-point Likert-scale operationalized how positively students relate to their language learning experiences (Cronbach's alpha = .85). We have decided to include this scale into the study because language learning experience is one of the key variables in Dörnyei's (2005) L2 motivational self system theory.

**Self-efficacy.** The scale measuring self-efficacy was drawn up for the purposes of the present study and was based on Bandura's conceptualizations of the construct and his guidelines for compiling such an instrument (Bandura, 2006). The scale consisted of 9 items which measured language learners' sense of self-efficacy in connection with the 4 language skills in and outside the classroom; in other words, it measured to what extent they felt they have the ability to successfully perform foreign language related tasks. Instead of the suggested 10-point scale, the items were drawn up using a 5-point Likert-scale (Cronbach's alpha = .92).

**Facilitating anxiety.** Items of Alpert and Haber's (1960) Achievement Anxiety Test were adapted to measure facilitating experiences of foreign language classroom anxiety. We opted for this instrument instead of using the well-known FLCAS (Horwitz, 1991) because we intended to distinguish the constructs of facilitating and debilitating anxiety, which the FLCAS does not explicitly set out to do. Facilitating anxiety was operationalized as anxiety tied

to the language learning situation and as a result of which the learner invests more effort into language learning. Five 5-point Likert-scale items were included in the questionnaire. The Cronbach's alpha value for this scale was .60, which means that the scale's reliability can be characterized as acceptable (Cohen, Manion, & Morrison, 2007, p. 506).

Debilitating anxiety. Items of Alpert and Haber's (1960) Achievement Anxiety Test were also adapted to measure debilitating experiences of foreign language classroom anxiety. Debilitating anxiety was operationalized as anxiety tied to the language learning situation involving a feeling of inhibition and apprehension. Five 5-point Likert-scale items were included in the questionnaire (Cronbach's alpha = .86).

### Procedure and Data Analysis

The questionnaire was designed in Hungarian and was piloted with the help of a think aloud protocol (Dörnyei, 2005). Based on the results of the think aloud interviews, potentially problematic items were reworded, and the instrument was finalized. The final version of the questionnaire was personally delivered to the secondary schools, where we oversaw the administration of the questionnaires.

All the questionnaires were computer-coded and SPSS (Statistical Package for Social Sciences) 17.0 was used for pre-analyzing the data. As for the structural equation modeling, we used AMOS 20.0 to test the fit of the hypothesized model. Concerning the modeling procedure a number of issues must be addressed at the onset. First, missing data was checked for each variable. There were exceptionally few cases of missing data (maximum of 3 cases for some variables); therefore, we decided to impute those missing cases with the mean value of the given variable (Little & Rubin, 1987). Outliers, on the other hand, were not treated. Second, the distribution of normality of the dataset was checked. All univariate distributions were normal, that is, both the skewness and kurtosis values were within the range of -1 to +1. As a result, maximum likelihood estimation was considered appropriate for the present data set.

In analyzing our data, we followed the step-by-step requirements for structural equation modeling (SEM) procedures (Byrne, 2009). First, we established the reliability of our scales. Next, we calculated the measurement models for each scale. Then, in order to ensure construct validity, we carefully studied earlier research in order to draw up a full measurement model. Once the measurement model was decided on, we ran the analysis twice: First, to calculate the initial fit indexes and review possible amendments suggested by the

program; second, to confirm that the acceptability of the fit indexes and all relationships in the model were significant.

In terms of the assessment of data-model fit, we used the most often advised indices in the SEM literature (Byrne, 2009), and along the chi-square statistics and the CMIN/*df* (chi-square divided by the degrees of freedom), we report additional indices: comparative fit index (CFI) (Fan, Thomson, & Wang, 1999; Hu & Bentler, 1999), the Bentler-Bonett normed fit index (NFI), the Tucker-Lewis coefficient (TLI), the root mean square error of approximation (RMSEA) (Browne & Cudeck, 1993; Fan et al., 1999; Hu & Bentler, 1999), and the parsimony-adjusted comparative fit index (PCFI).

## Results

### The Measurement and Final Models

As a first step in testing the model-fit, we set out to assess the five measurement models separately. The analysis indicated adequacy of the measurement models. The related results are shown in Appendix B. The first evaluation of the hypothesized full model indicated a close-to-acceptable fit. In order to obtain higher fit indices, we have included additional paths between error terms. The final models are shown in Figures 2 and 3. The fit indexes of the final models are presented in Table 1. The correlated error terms are shown in Appendix C.

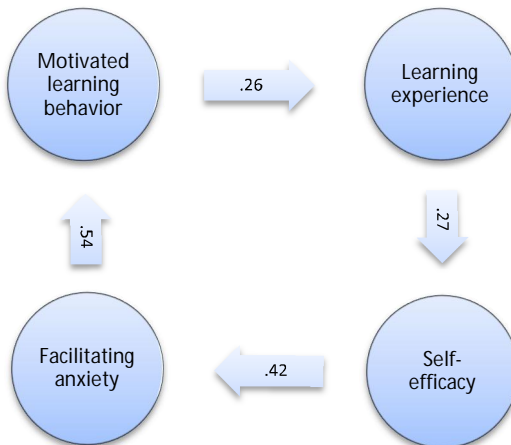


Figure 2 The schematic representation of the final model with facilitating anxiety

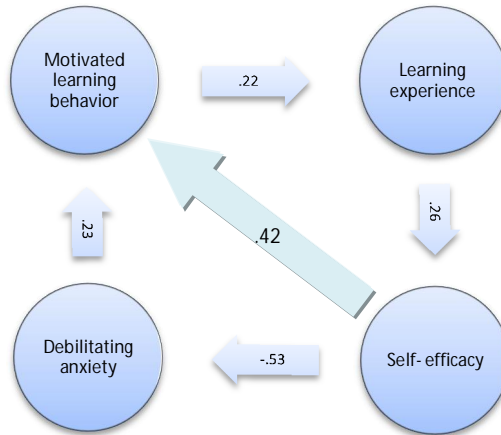


Figure 3 The schematic representation of the final model with debilitating anxiety

Table 1 Fit indexes for the final structural models

Model	Chi square	df	p	Chi square/df	RMSEA	SRMR	GFI	NFI	PNFI	CFI	PCFI
1	319.5	215	<.001	1.486	.046	.072	.894	.881	.749	.957	.813
2	362.84	216	<.001	1.680	.054	.069	.880	.884	.755	.949	.810

Concerning the final models, the hypothesized relationships have been supported and the obtained results indicate a number of interesting issues. First, students’ motivated learning behavior will enhance their learning experiences; that is, the more motivated a student is, the more positively she or he will view the learning experience. Positive learning experience then influences students’ self-efficacy in a positive way. In addition, a higher level of self-efficacy is in a positive relationship with facilitating anxiety, whereas it has a negative impact on debilitating anxiety. Interestingly enough, the negative effects of debilitating anxiety seem to be counteracted by self-efficacy, influencing motivated learning behavior in a positive way. This relationship (self-efficacy → motivated learning behavior) is missing from the model including facilitating anxiety. Finally, both facilitating and debilitating anxiety have an impact on motivated learning behavior.

### Discussion and Implications

With the help of structural equation modeling as a data analytical tool, we were able to demonstrate that Dörnyei’s (2009) tripartite model of motivation-cognition-affect is a viable framework to use when investigating the relationship

between language learning motivation, self-efficacy, and foreign language classroom anxiety. Our results also showed that self-efficacy and language anxiety are indeed distinct from, but closely linked with, motivational constructs of motivated language learning behavior and language learning experience.

Using our data set, we have found support for the hypothetical circular relationships outlined in the schematic representation of the theoretical model. First and foremost, the effect of motivated learner behavior on the language learning experience has been confirmed. This means that, in line with Csikszentmihályi (1991), the quality of experience is the function of, among others, the learner's motivation (clearly set proximal goals) to engage in and pursue a task or course of action based on previous subjective experiences and subjective judgment of capacities (self-efficacy). In other words, language learners who are more persistent and who are more likely to invest effort into language learning are also more likely to perceive their language learning classroom experience as positive. Although the relationship between motivated language learning behavior and experience proved to be significant, the moderate degree implies that alongside motivated learner behavior, other factors also play an important role in the quality of the language learning experience (e.g., the teacher's personality, the group, the language learning milieu, and others not included in the scope of this study).

In both resulting models it is interesting to see that language learning experience influences self-efficacy beliefs to a very similar but moderate extent. According to Zimmerman (2000), self-efficacy beliefs are influenced by four types of experience: enactive experience (based on the outcome of personal experiences), vicarious experiences (self-comparisons with a model), verbal persuasion (outcomes described by an outsider), and perceived physiological reactions. The scale directed at assessing learners' experience in the present study closely resembles the idea of "enactive experience." Hence, although Zimmerman (2000) posits that enactive experiences are the most influential in terms of self-efficacy beliefs, there are other types of experiences that we did not measure in the present study, and which thus could not appear as part of the relationship between experience and self-efficacy.

An interesting difference between the two models with respect to the different types of anxiety under investigation was the direct relationship between self-efficacy and motivation, when the anxiety accounted for was debilitating. This is also supported by Zimmerman (2000), who refers to self-efficacy as a direct as well as an indirect (through anxiety) antecedent to motivation. The reason why the direct link did not appear in the case of facilitating anxiety may be that the forces behind self-efficacy, anxiety, and motivation are qualitatively different. It may be the case that in terms of positive self-efficacy beliefs and facilitating anxiety we can speak more of approach motivation (Elliot, 2006), which is enhanced through the facilitating nature of

anxiety, whereas in the case of debilitating anxiety, self-efficacy beliefs may still provide impetus for approach motivation (hence the positive relationship between debilitating anxiety and motivated learner behavior); nonetheless, debilitating anxiety can be characterized by an approach motivation type of response to a small extent. This is in line with Bandura's (1977) observation that

expectations of personal efficacy determine whether coping behavior will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and aversive experiences. Persistence in activities that are subjectively threatening but in fact relatively safe produces, through experiences of mastery, further enhancement of self-efficacy and corresponding reductions in defensive behavior (p. 191).

According to the results presented here, facilitating anxiety, as opposed to debilitating anxiety, influences motivated language learning behavior to a larger extent. This is in line with what Kleinmann (1977) has found on the task level: Learners with higher levels of facilitating anxiety were found to experiment with more difficult language structures; thus, it can be said that they invested more effort into producing language than those who relied on using structures they had already mastered. This also parallels Csíkszentmihályi's (1997) concept of the flow experience. In other words, flow theory suggests that when the task at hand is neither too easy nor too difficult for the learner, and the state of arousal is adequate (not too high so as not to inhibit the learner, but higher than merely evoking boredom) the learner will experience flow (Egbert, 2003). This optimal level of arousal is reminiscent of facilitating anxiety, where anxiety provokes an approach (problem-solving coping) response (see appraisal theory).

Not only is the relationship among these ID variables worth mentioning, but also the notion that data analysis on the present dataset has yielded a circular model of experience, self-efficacy, anxiety, and motivation. Thus far, many studies have focused on motivated language learning behavior as an end or a product of a process, but here it has been clearly shown to feed back to the quality of experience and further, to self-efficacy, anxiety, and greater motivation. The above results support the notions that (a) the process of motivation is complex and influenced by other ID variables, and (b) the investigation of ID variables in "constellations" rather than in isolation seems to be more fruitful in understanding language learner differences.

## Conclusion

In our study we set out to investigate how motivation, cognition and affect might interact in the L2 learning process of secondary school students studying English in a predominantly monolingual context. Our results indicate a circular



relationship, which implies a number of issues. Despite the fact that L2 motivational literature usually sees motivated learning behavior as a key concept to shape students' behavior (Dörnyei & Ushioda, 2011) and, therefore, teachers are constantly reminded to enhance students' intended learning behavior (Dörnyei, 2001), it seems that there are several intervention points in the process. For example, enhancing the learning experience by making the learning process more relevant and enjoyable for students will increase their self-efficacy, which will impact anxiety and intended behavior. Alternatively, anxiety reducing training helps students increase the amount of energy they invest into learning and that will make the process more enjoyable and their experiences more rewarding. Learning experience then affects students' self-efficacy beliefs, which in turn has both a direct and indirect impact through debilitating and facilitating anxiety on students' motivated learning behavior. These results imply that enhancing students' motivated learning behavior can have an effect on the way they process the experience of language learning and the self-efficacy beliefs they develop. In terms of anxiety it is important to note that despite the fact that it is often seen as a factor hindering learning, it can also contribute to the learning process by positively influencing students' learning behavior via its facilitating effect.

The cyclical nature of the proposed structural model also implies that the constructs we investigated are interrelated and this allows for intervention (on the part of the teacher and/or the learner) at any point in the cycle. In other words, lowering the level of debilitating anxiety, or enhancing self-efficacy can increase the amount of effort invested in language learning, which in turn is likely to lead to positive experiences and further enhance learner's self-efficacy. Improving classroom experience can also lead to a higher sense of self-efficacy, or investing more effort which can result in more experiences of success, a heightened sense of self-efficacy and lower anxiety levels. Thus, using our data we could demonstrate that studying an amalgam of ID variables rather than investigating them in isolation can present a more complex view of their role in language learning.

At this point we have to note the limitations of our study. It has to be pointed out that the study investigated one particular foreign language learning context; in other contexts the result might have been different. In addition, the inherent limitations of structural equation modeling indicate the possibility of the existence of competing models, which are never tested. In terms of further studies, we need to note that to understand the different processes concerning debilitating and facilitating anxiety further research is warranted.

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## APPENDIX A

### The items of the scales

#### Motivated learning behavior

MLB1. I am willing to work hard at learning English.

MLB2. Learning English is one of the most important aspects in my life.

MLB3. I am determined to push myself to learn English.

MLB4. I can honestly say that I am really doing my best to learn English.

MLB5. It is very important for me to learn English.

#### Language learning experience

LLE1: English lessons are always fun.

LLE2: I really like the tasks we do during English lessons.

LLE3: I never get bored during English lessons.

LLE4: I really like the English lessons.

#### Self-efficacy

SE1: I am confident that I can do the speaking tasks in the EFL class.

SE2: I am confident that I can do the silent reading tasks in the EFL class.

SE3: I am confident that I can do the writing tasks in the EFL class.

SE4: I am confident that I can do the listening tasks in the EFL class.

SE5: I am confident that I can understand what is said in English in the EFL class.

SE6: I am confident that I can answer questions in English in the EFL class.

SE7: I am confident that I can understand what is said in English outside the classroom.

SE8: I am confident that I can understand what I read in English outside the classroom.

SE9: I am confident that I can express myself in writing in English outside the classroom.

#### Facilitating anxiety

FA1: I work best under pressure.

FA2: In EFL class, I do better when I'm a little anxious.

FA3: In EFL class, the more important the task, the better I seem to do.

FA4: In EFL class, I enjoy doing a difficult task more than an easy one.

FA5: If I have started task during English class, nothing can keep from finishing it.

#### Debilitating anxiety

DA1: It is even more difficult to do a hard task when it is graded because I am afraid of getting a bad mark.

DA2: Nervousness while taking doing a task in EFL class hinders me from doing well.

DA3: The more important the task in the EFL class, the less well I seem to do because I become nervous.



DA4: If the teacher calls on me in EFL class, I often block on questions to which I know the answers, even though I might remember them later.

DA5: Time pressure always seems to make me do worse than the others on language tasks in the EFL class.

## APPENDIX B

## Correlation matrixes and fit indexes for the measurement models

## Measurement model of motivated learning behavior

Item	Mean	SD	MLB1	MLB2	MLB3	MLB4	MLB5
MLB1	3.87	.99	1.00				
MLB2	2.85	1.15	.386**	1.00			
MLB3	4.19	.99	.476**	.285**	1.00		
MLB4	3.64	1.06	.655**	.483**	.545**	1.00	
MLB5	4.47	.75	.422**	.454**	.496**	.410**	1.00

\*\*  $p < .01$ .

## Measurement model of language learning experience

Item	Mean	SD	LLE1	LLE2	LLE3	LLE4
LLE1	3.44	1.16	1.00			
LLE2	3.14	1.18	.727**	1.00		
LLE3	2.89	1.24	.501**	.474**	1.00	
LLE4	3.28	1.28	.672**	.706**	.448**	1.00

\*\*  $p < .01$ .

## Measurement model of self-efficacy

Item	Mean	SD	SE1	SE2	SE3	SE4	SE5	SE6	SE7	SE8
SE1	3.64	.98	1.00							
SE2	4.09	.91	.548**	1.00						
SE3	3.86	.93	.564**	.645**	1.00					
SE4	3.47	1.06	.713**	.458**	.508**	1.00				
SE5	3.56	.96	.575**	.513**	.495**	.608**	1.00			
SE6	3.63	.97	.749**	.556**	.554**	.656**	.664**	1.00		
SE7	3.52	.96	.622**	.459**	.476**	.571**	.631**	.682**	1.00	
SE8	3.76	.92	.451**	.559**	.513**	.417**	.491**	.509**	.614**	1.00
SE9	3.63	.97	.573**	.541**	.618**	.518**	.589**	.647**	.549**	.610**

## Measurement model of facilitating anxiety

Item	Mean	SD	FA1	FA2	FA3	FA4	FA5
FA1	2.03	1.08	1.00				
FA2	1.99	0.98	.286**	1.00			
FA3	2.67	1.09	.226**	.279**	1.00		
FA4	2.67	1.13	.175**	.215**	.340**	1.00	
FA5	2.61	1.04	NS	NS	.344**	.378**	1.00

\*\*  $p < .01$ , NS (not significant)

## Measurement model of debilitating anxiety

Item	Mean	SD	DA1	DA2	DA3	DA4	DA5
DA1	2.87	1.29	1.00				
DA2	2.51	1.30	.541**	1.00			
DA3	2.39	1.17	.612**	.626**	1.00		

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DA4	2.64	1.28	.483**	.522**	.510**	1.00	
DA5	2.20	1.14	.574**	.587**	.666**	.528**	1.00

\*\*  $p < .01$ .

Fit indexes for the measurement models of the five latent dimensions

	Chi square	df	$p$	Chi square/df	RMSEA	SRMR	GFI	NFI	PNFI	CFI	PCFI
MLB	5.222	3	.156	1.741	.056	.021	.991	.987	.296	.994	.298
LLE	1.441	2	.486	.721	.001	.010	.997	.997	.332	.999	.333
SE	28.979	20	.088	1.449	.044	.023	.974	.979	.544	.993	.552
FA	15.198	4	.004	3.800	.109	.058	.975	.887	.355	.910	.364
DA	2.824	5	.727	.565	.001	.012	.995	.995	.497	.999	.500

## APPENDIX C

The correlated error terms in the final models

Final model 1	Coefficient
e_MLB2-e_MLB5	.275
e_MLB3-e_MLB5	.296
e_SE1-e_SE2	.063
e_SE1-e_SE4	.296
e_SE1-e_SE5	-.174
e_SE1-e_SE6	.150
e_SE2-e_SE3	.325
e_SE2-e_SE8	.232
e_SE7-e_SE8	.332
e_SE8-e_SE9	.314
e_FA2_eFA5	-.302

Final model 2	Coefficient
e_MLB2-e_MLB5	.266
e_MLB3-e_MLB5	.286
e_SE1-e_SE4	.291
e_SE1-e_SE5	-.171
e_SE1-e_SE6	.145
e_SE2-e_SE3	.305
e_SE2-e_SE8	.236
e_SE7-e_SE8	.338
e_SE8-e_SE9	.315