L2 Motivation and Self-efficacy's Link to Language Learners' Flow and Anti-flow Experiences in the Classroom

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1. Introduction

Although the importance of affect and emotional experiences in language learning has long been acknowledged, in order to assist learners and teachers in the language learning process, studies in the past have primarily focused on negative emotions. While it is quite obvious that negative emotions can only be combated if we understand their impact, it also appears to be logical to assume that positive emotions carry some benefits that are worthy of investigation. Acknowledging this, a recent shift towards researching the effects of positive emotions can be witnessed in psychology, attempting to describe optimal experiences and focusing on "the positive" in general(Seligman & Csíkszentmihályi, 2000). The fact that this trend has also found its way into the field of applied linguistics is well represented by the recent publication of a book on positive psychology in SLA (MacIntyre, Gregersen & Mercer, 2016).The present paper investigates how one type of optimal experience, learners' flow, and its antithesis, anti-flow, are linked to motivated language learning behaviour and self-efficacy beliefs about learning English as a foreign language.

2. Background

2.1. Flow theory, flow and anti-flow experiences

The flow experience, defined as "the holistic sensation that people feel when they act with total involvement" (Csíkszentmihályi, 1975, p. 36), typically accompanies an activity that people are willing to perform for its own sake, because they enjoy it so much. It is a type of optimal experience with a long research tradition in psychology (Csíkszentmihályi, 1975; Carli, Delle Fave & Massimini, 1988; Csíkszentmihályi, 1997; Nakamura & Csíkszentmihályi, 2002, Csíkszentmihályi, 2014). On the phenomenological level, there seem to be a number of characteristic features of flow. While experiencing flow, people tend to focus on the task so much that they seem to lose self-consciousness for that period; this experience is often labelled as the "merging of action and awareness" (Csíkszentmihályi, 2014, p. 230). They also feel very much in command and are not worried about losing control of the task. An altered sense

of time – time passing very quickly or slowing down – is also characteristic of flow (Csíkszentmihályi, 2014).

Although flow experiences are not very frequent in everyday life, there are three conditions that persistently seem to increase the likelihood of this phenomenon. One such condition is having a clear set of goals that are not distant but immediate (Csíkszentmihályi, 2014). Having concrete goals enhances the probability of clear and immediate feedback (Csíkszentmihályi, 2014), as under these conditions it should be fairly easy to determine whether the goals have been achieved or not. The third condition that should be met in order to experience flow is "a balance between perceived challenges and perceived skills" (Csíkszentmihályi, 2014, p. 232), which can be easily upset by either having to confront challenges that exceed the person's skills (this can lead to anxiety) or by having to embark on tasks that do not pose any challenge for the person (this can lead to apathy or boredom). For this reason, flow can only be described as a temporary state.

Csíkszentmihályi identified different types of anti-flow experiences in various models of flow (Csíkszentmihályi, 1975; Carli, Delle Fave & Massimini, 1988; Csíkszentmihályi, 1997) with apathy and anxietybeing present in all later models. Apathy is conceptualized as the antithesis of flow in the sense that it is characterized by a lack of perceived challenges and abilities. In the case of anxiety, the perceived challenge is present, but its level exceeds the persons' perceived level of abilities. While apathy appears to be an under-researched area within applied linguistics, a number of studies can be found on anxiety related to language learning. Horwitz, Horwitz, and Cope's (1991) widely accepted definition of foreign language classroom anxiety states that it is "a distinct complex of self-perceptions, beliefs, feelings, and behaviours related to classroom language learning arising from the uniqueness of the language learning process" (p. 31). Thus, foreign language classroom anxiety is a situation-specific type of anxiety closely tied to learners' experiences in the foreign language classroom context (MacIntyre, 1999), which can have a detrimental effect on cognition (Eysenck, 1979), including language task performance (Egbert, 2003).

In spite of the relevance and applicability of flow theory in investigating the language learning process, there are relatively few publications available on the issue, perhaps with the exception of Egbert (2003) and Czimmermann and Piniel (2016). In her article, Egbert (2003) proposed a hypothetical model of the relationship between flow and language acquisition. In this model, she emphasizes the *task* (cf. Eysenck, 1979) and its link to the learner's resources (cf. Bandura's (1988, 1997) concept of self-efficacy) available for task completion, in other words, how challenging the task is for the learner. When the learner is presented with a task that matches their skills and provides just the right level of challenge, they are likely to experience the temporary state of flow. This is also echoed by the results of Czimmermann and Piniel (2016) in the university context of English majors. The authors found that learners are more likely to experience flow when the conditions of optimal levels of task difficulty, manageable challenges, and perceived opportunity of control are met. In contrast, when tasks are too difficult/too easy, too challenging/not challenging enough and there seems to be little room for learner control, the learning situation tends to be characterized by students' anti-flow experiences.

2.2. Experience and self-efficacy

From the components of flow theory, it becomes clear that a person's perception of their ability to complete a particular task, in other words, how difficult or easy they

find the task, plays a key role. The notion of self-assessment of our abilities is very closely linked to Bandura's concept of self-efficacy beliefs. According to Bandura (1986), self-efficacy can be defined as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). Wong (2005) specifies "language self-efficacy beliefs" (p. 248) as beliefs specifically related to language learning (see Horwitz, 1988). Therefore, we can say that in the foreign language classroom self-efficacy beliefs concern not only the resources learners have in general to learn a foreign language but also the resources they believe they have in order to successfully take part in activities and perform tasks in the language classroom (Bandura 1986, 1988).

It has also been theorized that self-efficacy beliefs are strongly rooted in learners' previous experiences, namely, mastery experiences, vicarious experiences, verbal persuasions, and emotions (Bandura, 1997; Mills, 2014). Nevertheless, out of these four factors, the first, mastery experiences, seem to have the greatest effect on self-efficacy beliefs. Therefore, learners' experiences in the language classroom as to how successfully they have performed a task and the feelings that are evoked during this experience will be key determinants of how they think about their own abilities. In turn, self-efficacy beliefs will further influence motivation, more specifically learners' persistence and the effort they intend to invest into learning (Zimmermann, 2000).

2.3. Experience and motivation

This takes us to the next individual differences variable, language learning motivation. Besides the motivating effect of experience, which exerts itself through self-efficacy, language learning experience is also a key precursor to motivation as posited by Dörnyei's model of the L2 motivational self-system (Dörnyei& Ryan, 2015). According to this model, a person's effort and persistence in learning a foreign language (referred to as the construct of motivated learning behaviour by,e.g., Kormos & Csizér, 2008; Csizér & Kormos, 2009) largely depends on three elements: the L2 ideal self, which includes future self-guides; the ought-to L2 self, encumbered by perceived expectations; and previous language learning experiences, stemming from past encounters with the L2. In this sense, motivated learning behaviour is influenced by the strength of the ideal L2 self, the ought-to L2-self and the experiences linked to the L2. In the Hungarian secondary school context, Csizér and Kormos (2009) have found language learning experiences to be more influential in determining motivated learning behaviour than the ideal or the ought-to L2 selves. Therefore, it is reasonable to assume that the more positive encounters learners have had with the foreign language, the more likely they will invest energy into developing their language knowledge.

Similarly, Csíkszentmihályi (2014) argues that flow experiences can result in "emergent motivation" (p.234) because of the intrinsically rewarding nature of flow and the resulting increase in skill. Since flow experiences are autotelic, that is, people tend to take part in them because they enjoy them, they urge people to repeat such activities. Repeated practice in turn leads to mastery, which is accompanied by feelings of competence and higher levels of self-efficacy.

On the other hand, intrinsic motivation to learn (in the present case to learn a foreign language) can positively influence the experience of the learning process (Varga & Osvát, 2012). Piniel and Csizér (2013) found support for this claim in the EFL context, where motivated learning behaviour was shown to affect learning experience directly, while experience through self-efficacy and language anxiety indirectly

influenced learners' motivated learning behaviour. From this it seems that motivation is probably a component of a circular relationship structure that includes experience and self-efficacy, and is not merely a source or an end in itself.

3. Study

3.1. Research question and hypotheses

Based on the above review, it seemed worthwhile to investigate how positive and negative language learning experiences, operationalised as flow and anti-flow, might be linked to motivation and self-efficacy beliefs on a larger sample of students. We hypothesized that a higher level of motivation to learn a foreign language would lead to more experiences of flow (see Figure 1). The positive experiences in the language classroom were expected to increase learners' level of self-efficacy, which in turn might further enhance language learners' motivation. In case of anti-flow experiences (see Figure 2), we hypothesized that learners with lower levels of motivation would be more likely to experience anti-flow, which in turn was expected lead to lower levels of self-efficacy. The lower the levels of self-efficacy learners reported, the lower we expected their levels of motivation to be.
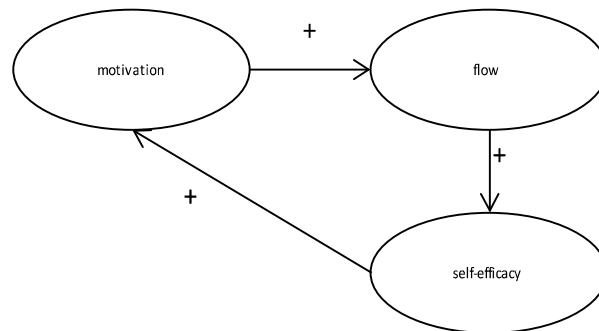
Figure 1. Schematic representation of the hypothesized relationship between motivation, self-efficacy, and flow experiences
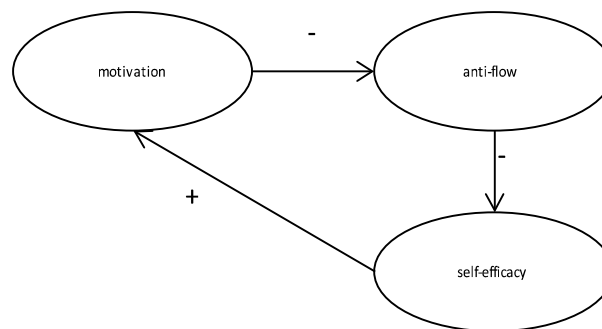
Figure 2. Schematic representation of the hypothesized relationship between motivation, self-efficacy, and anti-flow experiences

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3.2. Method

In order to investigate the relationship of flow and anti-flow experiences with language learning motivation and self-efficacy beliefs, a questionnaire study was designed involving Hungarian high school students. The data was subjected to quantitative analysis using structural equation modelling (SEM)in order to confirm the hypothesized interrelationship of the variables under scrutiny.

3.2.1. Participants

The target population of our study comprised tenth grade high school students in Budapest, Hungary all learning English as a foreign language without a specialized language curriculum which means 3-4 lessons of 45 minutes of language instruction per week. Tenth graders were chosen as the target population in order to control for the novel experience of beginning secondary school in the ninth grade as well as to avoid the influence of the pressure of final examinations in the final grades (grades eleven and twelve). Using this sampling frame, eight schools were selected by way of stratified random sampling. Altogether 214 participants formed the final sample for the present study. The participants consisted of 130 female and 84 male language learners. As specified above, 63.8 % of the students studied English as a Foreign Language at the time of the data collection in three lessons a week and an additional 19.2% in four lessons a week. Moreover, 15.4% also attended extracurricular (non-obligatory) English classes once a week and 1.4% twice a week, organized by their school. Out of the 214 learners, 58% claimed to have been in a country where they have communicated using English, and 41% spent between one and two weeks in the foreign country. Overall, the time students spent abroad ranged from one day to eight years. There were three learners whose stay was over a year long.

3.2.2. Instruments

Seven scales consisting of five-point Likert-scale items were used to collect data on the following constructs: flow experience, apathy (an anti-flow experience), self-efficacy beliefs, classroom anxiety (in terms of fear of negative evaluation of peers, fear of negative evaluation of the teacher, lack of self-confidence), and motivated learning behavior.

Learners' experiences of *flow* in the language classroom were measured using the validated version of Oláh's (2005) Hungarian scale for classroom flow, adapted to the English as a foreign language classroom. This measure was developed for investigating flow experiences in the well-defined situation (see Csíkszentmihályi, 2014) of classroom learning. This was also used by Czimmermann and Piniel (2016) to measure general classroom flow in the English as a Foreign language classroom at university. In their study, classroom flow was found to be related to task-specific flow, but it was a more general measure of flow experiences. The scale included three items referring to general language classroom experiences (example: *I continuously feel that things are going well*). *Apathy* was also measured by Oláh's (2005) instrument which, besides tapping into flow, focuses on anti-flow experiences. The apathy scale consisted of three items (example: *This is unimportant for me*).

Language classroom anxiety was measured as a composite of three scales with items adapted from the Foreign Language Classroom Anxiety Scale (Horwitz, et al., 1991; Tóth, 2008): fear of negative evaluation of peers, fear of negative evaluation of the teacher, and lack of self-confidence. The four items measuring the fear of negative evaluation of peers focused on learners' feelings of inhibition associated with the worry about how classmates perceive the learner's performance in a foreign language classroom (example: *I'm afraid the others will laugh at me when I speak English*). The construct of the fear of negative evaluation of the teacher was operationalized with the help of 3 items targeting the negative feelings invoked by the teacher's assessment (example: *I worry that I will not be able to meet the requirements in English class*). The lack of confidence was the final factor operationalized as a constituent of language anxiety. The three items of this scale measured learners' general feelings of uncertainty associated with the foreign language classroom (example*: I am very sure of myself when I speak in English in class*).

The *self-efficacy* scale consisted of four items adapted from the Beliefs About Language Learning questionnaire (Horwitz, 1988; Kuntz, 1996) that operationalized learners' beliefs about their abilities to successfully learn a foreign language (example: *I believe that I have the ability to learn to speak English well*).

Finally, *motivated language learning behavior* was measured with the help of a four-item scale adapted from Kormos and Csizér (2008). This tapped into the extent learners are ready to invest energy and sustain it in the course of foreign language learning (example: *I'm ready to invest considerable effort into learning English*).

3.2.3. Procedures

We used think-aloud protocols to pilot the instruments for their use in the foreign language learning context. Three respondents from the population under scrutiny were selected on a voluntary basis to take part in the interviews. After a short orientation on verbalizing their thoughts, the respondents were asked to read the questionnaire items one by one and reformulate them in their own words to check understanding. Based on the interviews, no major modifications were found to be necessary. Then the participant schools were randomly selected from the pool of Hungarian secondary schools in Budapest that matched the criteria outlined above. These schools were then contacted through the principals or vice principals who were informed of the details of the research. Copies of the instruments were made available to the school management. Finally, eight schools agreed to take part in the study, and either the principal or the head of the English Department suggested a class for taking part in the study.

Once the necessary permission was granted, the purpose of the study and its procedures were explained to the learners. The questionnaires were then distributed and filled out. Anonymity was ensured throughout the data collection process. It took students about 35 minutes to respond to all the items.

3.2.4. Data analysis

Participants' answers were recorded with the help of the Statistical Package for the Social Sciences (SPSS) 16.0 for Windows. The responses on the five-point Likert scales were assigned numerical values (strongly agree= 5, agree = 4, neither agree nor disagree = 3, disagree = 2 and strongly disagree = 1). In the case of negative items,

the values were assigned in reverse order. The responses to the questionnaire items constitute the observed variables in our study, which were hypothesized to carry information on the latent variables of motivated language learning behaviour, flow/anti-flow experiences, and self-efficacy respectively.

With the help of Amos 16.0, we used structural equation modelling (SEM) as a technique to analyse our data and the complex relationships among the observed and latent variables in our study. As the first step, the literature suggests that measurement models for each latent variable should be set up, evaluated and modified where necessary (Schumacker & Lomax, 2004). Measurement models provide information about the extent to which the observed variables measure the hypothesized latent variables and are often referred to as confirmatory factor analysis (CFA) models (Schumacker & Lomax, 2004). With CFA models the researcher's goal is to confirm the validity of the theoretical models. In the case of the present study, we drew up and tested measurement models to see whether each latent variable that we intended to tap into (flow, apathy, self-efficacy beliefs and motivated learning behaviour) is indeed identified by the distinct items on the scales (Byrne, 2009; Schumacker & Lomax, 2004). In the case of language classroom anxiety, however, we used a so-called second-order measurement (Byrne, 2009) model where the items comprised aggregates of the following variables: fear of negative peer evaluation, fear of negative teacher evaluation, and lack of self-confidence. Subsequently, based on our hypotheses, all of the above measurement models were combined into distinct structural models with flow and anti-flow experiences respectively.

4. Results and discussion

We drew up three different measurement models for the flow and the two anti-flow experiences of apathy and anxiety. As mentioned above, with the help of measurement models, we checked whether the items on the scales adequately measure the latent constructs. In the following figures (Figure 3 through 6), the numbers next to the one-way arrows depict the extent to which the observed variables (shown in the rectangles) carry information about the latent variables (presented in ellipses). Apart from this, we can also see the correlations between pairs of these variables (indicated by the numbers next to the two-headed arrows). The correlation coefficients show that the latent variables are indeed related but at the same time they represent distinguishable constructs.
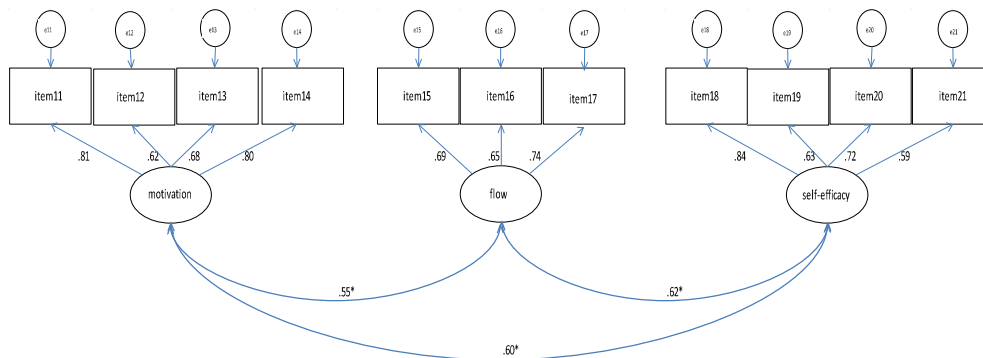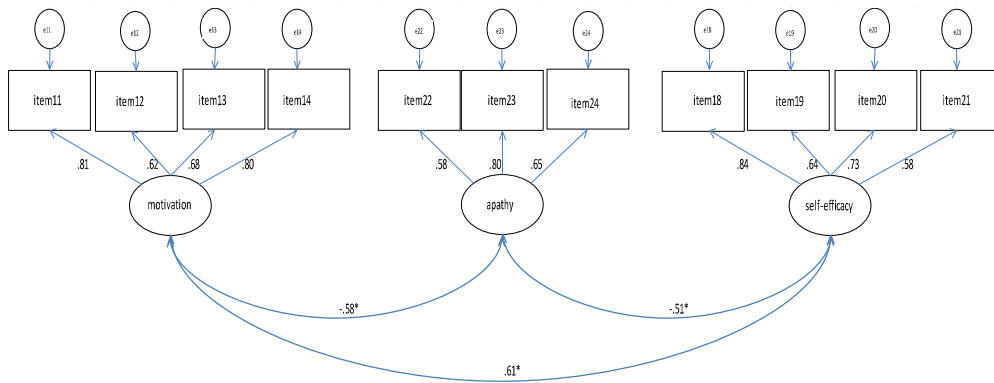

Figure 3. Measurement model with flow
*p<.05.

Figure 4. Measurement model with apathy
p<.05.

In the case of language classroom anxiety, we used a second-order measurement model because language class anxiety was conceptualized as a composite of fear of negative evaluation of peers, fear of negative evaluation of the teacher, and lack of self-confidence (see Figure 5). This allowed us to use the aggregates of the latent variables in the measurement model with the other variables (Figure 6).
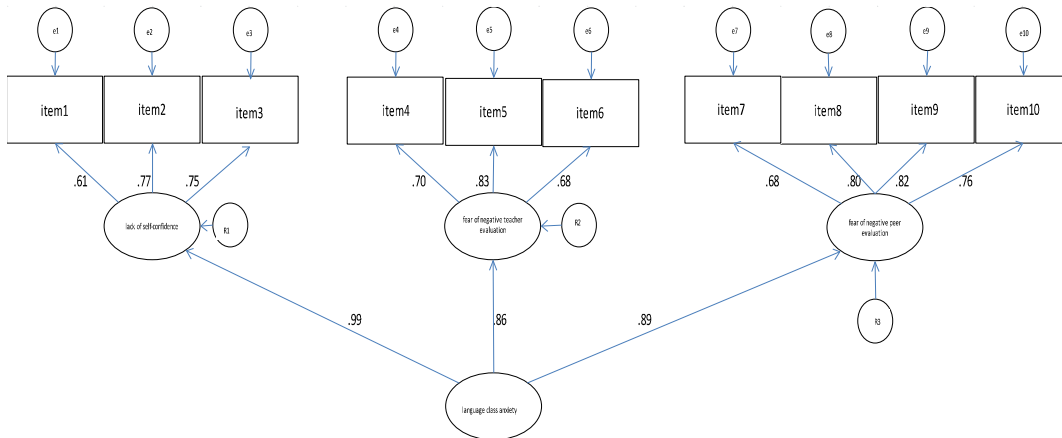

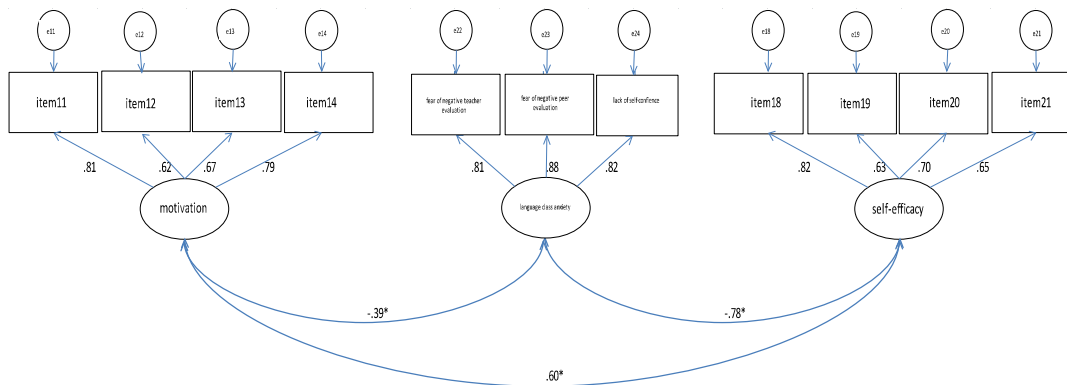*Figure 5.* Second-order measurement model of language class anxiety

Figure 6. Measurement model with language class anxiety
p< .05.

Based on the selected indicators of model fit (see Table 1), there is evidence for the validity argument regarding the questionnaire items and the latent variables they intended to measure. Thus, we could proceed with the descriptive analyses of our scales (see Table 2).

Table 1 Fit statistics of the measurement models

	CMIN/ df	p	CFI	GFI	NFI	RMSEA	SRMR
Measurement model with flow	1.55	.007	.97	.94	.92	.05	.056
Measurement model with apathy	1.50	.012	.97	.95	.92	.05	.053
Second-order measurement model of language class anxiety	2.49	<.001	.95	.93	.93	.08	.049
Measurement model with language class anxiety	1.95	<.001	.94	.91	.89	.07	.065

All the scales included in our instrument also proved to be adequately reliable with Cronbach's alpha values of .72 and higher. Based on the means of five-point scales, we can say that the sample comprised generally motivated learners (M=3.85) with moderately high levels of self-efficacy (M=3.38) and low levels of language class anxiety (M=2.38). It is interesting to note, however, that the average score for flow (M=2.88) is lower than expected in light of the level of motivation; on the other hand, the low level of apathy (M=2.00) learners seem to experience in the classroom is quite encouraging.

Table 2 Descriptive statistics based on the measurement models

		Mean	*SD*	Min.	Max.	Number of items	Reliability (α)
	Fear of peer	2.16	.92	1.88	2.34	4	.84
Language class anxiety subscales	Fear of teacher	2.32	.90	2.16	2.55	3	.78
	Lack of self-confidence	2.65	.93	2.37	2.88	3	.75
Language class anxiety (aggregate)		2.38	.81	2.17	2.65	3	.86
Motivated learning behaviour		3.85	.77	3.35	4.34	4	.81
Self-efficacy		3.38	.82	2.81	3.73	4	.78
Flow		2.88	.89	2.63	3.02	3	.73
Apathy		2.00	.79	1.86	2.22	3	.72

4.1. Structural models

In the second part of our analyses, we tested the hypothesized relationship between language learners' motivation, their flow and anti-flow experiences and self-efficacy. In the following, we present our three main findings.

First of all, the structural model indicating a positive cyclical relationship among the abovementioned qualities seemed to fit our data well (see Figure 7)(CMIN/df=1.66, CFI=.97, GFI=.94, NFI=.92, RMSEA=.056, SRMR=.057). In line with Litman (2005), our results suggest that the more motivation a language learner has with the urge and curiosity to take part in the learning process, the more likely they will become immersed in language learning tasks and experience flow in the classroom. This kind of experience will provide impetus for the learner to think positively about their abilities to meet challenges in the course of language learning; thus, it will positively influence their self-efficacy beliefs. As the learners see themselvesas someone who is able to meet the challenges in the language classroom, it will prompt them to invest more effort and sustain that effort longer, thus contributing to their motivation.

These findings parallel thoseof Piniel and Csizér (2013) and also reflect the autotelic nature of flow according to which the positive experience of having the skills to meet the challenges of the learning situation further enhances motivation (Csíkszentmihályi, 2014). Moreover, it also echoes the findings of self-efficacy studies where learners with higher levels of self-efficacy have been noted to attribute their successes more to their effort (Hsieh & Kang, 2010). In applied linguistics literature, self-efficacy has also been referred to as a future oriented construct that has been shown to be positively linked with the ideal L2 self, thus prompting the learner to invest more energy into learning in the near future (Iwaniec, 2014).
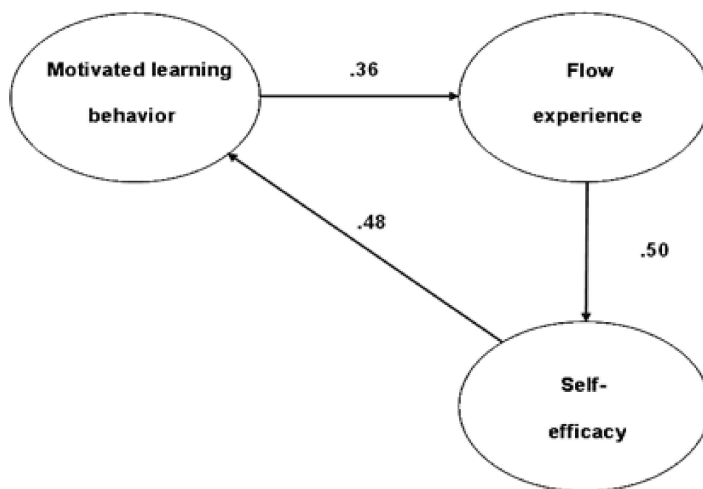

Figure 7. The structural model indicating the relationship between motivation, self-efficacy and flow experiences

The second structural model with anti-flow experiences was tested separately with apathy and language class anxiety, as both have been grouped under this umbrella term. Based on acceptable model fit indices (CMIN/df=1.60, CFI=.97, GFI=.95, NFI=.92, RMSEA=.053, SRMR=.055), we can say that in the case of apathy (Figure 8), we found

evidence for a negative cycle, as hypothesized. That is, the lower the motivation to learn a foreign language, the more likely the language learner will experience apathy; in other words, they will find language learning unimportant and will not concern themselves with their skills and the challenges language learning poses. It seems that higher levels of apathy induce lower levels of self-efficacy. Nonetheless, it appears from the data that a sense of self-efficacy will most probably contribute positively to language learning motivation. Therefore, it is perhaps at this point where the vicious circle could be halted by increasing learners' self-efficacy through vicarious and mastery experiences and also associating positive emotions with these experiences.

Finally, in case of the anti-flow experience of language anxiety, the hypothesized model was not confirmed. One of the main reasons for this may be that anxiety is more of an emotional response evoked by the appraisal of an experience (self-efficacy beliefs). Indeed, in psychological literature, anxiety is defined as an affect that is very similar to fear (Németh, 2012). As such, in the present case, it seems to be more of an antecedent to motivation, that is, it plays a key role in determining the energy and persistence with which the action will be carried out.
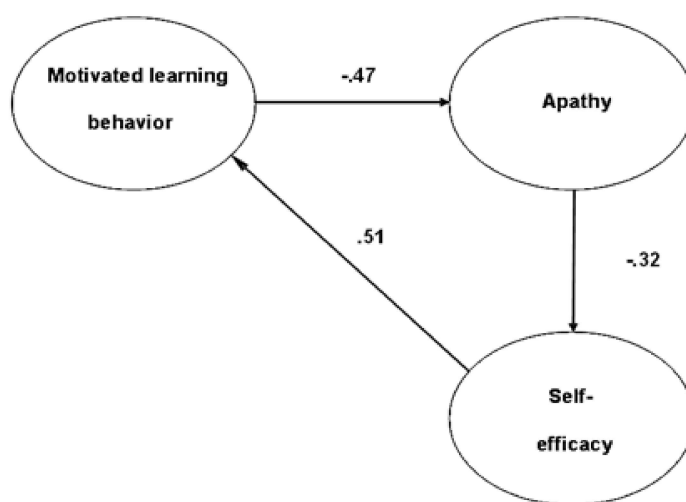

Figure 8. Structural model depicting the relationship between motivation, self-efficacy and the anti-flow experience of apathy

5. Conclusion

The circular models that have emerged from structural equation modelling suggest three possible points of intervention. Regarding the positive cycle, inducing flow experiences can lead to a higher level of language learning motivation as suggested by Dörnyei (2005) and Csíkszentmihályi (2014) through boosting students' perceived skills. It seems from our results that positive self-efficacy beliefs can also have a direct motivating effect. Moreover, the standardized regression weight in the structural model suggests, in line with the findings of Piniel and Csizér (2013), that there is a moderate link between students' motivation and their flow experiences while learning a language. That is, by increasing learners' motivation, they will more likely experience flow in the classroom.

Unfortunately, studies show that flow experiences tend to be relatively rare in educational contexts (Shernoff & Csíkszentmihályi, 2009).Therefore, the negative cycle where apathy negatively affects self-efficacy beliefs and a lack of motivation leads to apathy is probably also a characteristic scenario in language classrooms. Research suggests that there is a higher likelihood of students experiencing flow in the classroom when learning activities are structured more like extracurricular (Shernoff & Vandell, 2007) and non-academic classes (Shernoff, Csíkszentmihályi, Schneider& Shernoff, 2003), and when there is more room for activity on the students' part. Having a sense of autonomy and the opportunity to interact with others can also result in creating more optimal learning environments (Johnson, 2004). Moreover, virtual learning environments seem to have great potential for inducing flow in learners (Pearce, 2005; Scoresby & Shelton, 2011). Although these findings originate from studies of general education (Shernoff & Csíkszentmihályi, 2009), it might be worthwhile experimenting with them in language classes as well, especially since most of the recommended changes are already present in the repertoire of many language teachers.

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