# The Interrelationship of Language Learning Autonomy, Self-Efficacy, Motivation and Emotions: The Investigation of Hungarian Secondary School Students


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**Abstract** It has been long acknowledged that learners' individual characteristics play decisive roles in shaping the learning process (Dörnyei & Ryan, 2015). Still, there are relatively few studies tapping into the roles of various individual difference (ID) variables in concert. Hence, the aim of the present study was to explore the relationships of secondary school students' ID variables, namely, language learning autonomy, motivation, emotions, and self-efficacy. In order to fulfill this aim, self-reported questionnaire data were collected from secondary school students in Budapest, Hungary. In the present investigation, two different data sets were analyzed and compared. In each study both learner-based and technology-based autonomy (Benson, 2011) and a number of motivational variables including contact with the English language, emotions and self-efficacy beliefs were measured. As sample sizes were small ($N = 53$ for both datasets), correlational analyses were employed to map the interrelationships among the scales. Our results indicate a higher number of strong correlations among the scales. For example, both learner-based and technology-based autonomy are strongly related to the amount of effort students invest in language learning, their selves, their self-efficacy beliefs, cultural interests, as well as a number of positive emotions pertaining to classroom learning. Based on our results, we conclude that the individual investigation of these variables in the future cannot be justified.

**Keywords** L2 motivation · Language learning autonomy · Positive and negative emotions

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# 1 Introduction

The present research study has been motivated by two main considerations, one stemming from contextual deficiencies and the other based on theoretical considerations. Despite the fact that individual difference research has been an established part of applied linguistics, and a great number of studies have been carried out tapping into the role of various ID variables in the learning process, the call for investigating these variables in concert has appeared relatively late and is still often neglected in the field (Ryan, 2020). Therefore, in the present investigation, we set out to map the interrelationships of four important individual differences variables: motivation, autonomy, self-efficacy and emotions. In terms of the contextual importance of our study, it is situated in a European context, Hungary, where despite continuous effort pertaining to language policy issues, the population is still lagging behind in foreign language knowledge in the European Union (Eurobarometer, 2012). As studies targeting language policy considerations have identified no obvious problems (Öveges & Csizér, 2018; Öveges & Kuti, 2016), more student-focused research is necessary to tackle possible issues. Our results are thought to be relevant for similar contexts, as the constellation of these variables has not been researched earlier. In addition, the multidimensional approach to operationalizing these constructs has led to a nuanced understanding of the internal structure of these learner characteristics. In this article, we will summarize the most important theoretical and empirical findings pertaining to the research of these ID variables. In the methods section, we detail the steps of the two studies presented here. As for the results, after the presentation of the descriptive analyses, detailed correlational data are presented and analyzed. Based on our results, both pedagogical and research-related implications are offered.

# 2 Background to the Study

## *2.1 Autonomy*

The broad definition of learner autonomy provided by Holec (1981) as "the ability to take chargeof one's learning" (p. 3) was reiterated by both Little (1999) including the responsibility for students' own learning processes and Benson (2006), referring to autonomy as learners' ability to take charge of their own learning. As learning processes involve steps from planning the content of learning to execution, more detailed definitions take into account the various stages of these processes (Cotterall, 2000). It is usually recognized by researchers that students possess a capacity to take responsibility for their learning, and this capacity can be shaped throughout the learning process (Benson, 2011; Illés, 2012; Little et al., 2017). When classroom-learning is focused on, the responsibility of the instructors in developing and supporting autonomous language learning cannot be denied either (Benson,

2011; Everhard, 2016; Lamb, 2017; Little, 2007). In terms of teachers' responsibilities, Littlewood (1997) analyzed three types of autonomy: autonomy as a learner, autonomy as a communicator and autonomy as a person. In her critical appraisal of Littlewood's (1997) analysis, Illés (2019) pointed out that there were several issues pertaining to the universal definition and application of autonomy, such as the role of the teacher in various settings, the cultural and contextual differences as well as the expanding use of English as a lingua franca. She has concluded that "(i)ndividual autonomy in this sense should be the adaption, rather than adoption, of various conceptions of autonomy in a way which suits a particular learner at a particular stage of their language-learning process" (Illés, 2019, p. 47). One major contextual characteristic that motivated our study was the fact that in the Hungarian context learner autonomy has shown a decline in compulsory education (Albert et al., 2018a, 2018b; D. Molnár, 2014).

Empirical studies on learner autonomy usually map autonomy together with other different learner variables. For example, in the Hungarian context, autonomy was mapped in concert with L2 motivation for three age-groups (Csizér & Kormos, 2012, 2014; Kormos & Csizér, 2014). Kormos and Csizér's findings showed that there was strong correlation between L2 motivation and students' autonomous learning behavior. In terms of the direction of this relationship, structural equation modelling successfully tested the hypothesis that more motivated students would be more autonomous, too, by finding opportunities to use the language outside the classroom, managing their time better and overcoming boredom during the learning process. Researching autonomy with other ID variables, such as emotions, would be important as many students experience strong negative emotions, such as anxiety, during the learning processes (Öveges & Csizér, 2018), but there is no information how their emotions relate to autonomous learning behavior.

## *2.2 Motivation*

Motivated learning behavior measures students' effort that they are willing to invest into foreign language learning. Based on Boo et al. (2015) study, we have decided to use the L2 Motivational Self System's (Dörnyei, 2005, 2009) components as the main antecedent variables impacting students' motivated learning behavior in the present study. This model includes two self-related concepts: the *ideal L2 Self* and the *ought-to L2 self*. The former subsumes students' views about themselves as competent users of the L2, while the latter measures the external pressures that students think they have to comply with. As language learning is a social enterprise, apart from self-related concepts, one cannot neglect the experience of learning the language. Hence, the third component of this model has been the *L2 learning experience.* Although the model is not without criticism (Csizér, 2020), a high number of empirical studies have proved its viability. The empirical work pertaining to this model has been detailed elsewhere (see Boo et al., 2015 and Csizér, 2020); suffice it to say at this point that its relevance has been proven in various contexts, with ideal L2 self and L2

learning experience being more prominent factors in predicting overall motivation or achievement (Al-Hoorie, 2018). This abundance of the research does not mean that there are no uncharted territories, as very little is known how the components of this model relate to other ID variables, such as emotions or self-efficacy.

Another important concept related to L2 motivation measured in the present study is students' contact experiences, that is access to the target language. Their importance is underpinned by three reasons. First, the ultimate aim of foreign language learning is communication with speakers of that language. Second, this communication can be part and parcel of the learning process. Third, learners' experience of these encounters could shape other relevant ID variables in the learning process. The investigation of contact-related issues in the L2 motivation field is rooted in the social psychological study of inter-cultural contact (Allport, 1954; Pettigrew, 1998; Pettigrew & Tropp, 2006) and has been introduced by Clément's (1980) into the field of L2 motivation. Clément and Kruidenier (1983) showed that frequent and pleasant contact experience resulted in increased linguistic self-confidence in L2 learners which, in turn, affected motivated learning behavior in a positive way. In another study, Clément et al. (2001) concluded that more frequent positive contact experiences not only led to more confident language use but also influenced the identification profiles of language learners. In the Hungarian context, Kormos and Csizér (2007) found that it is not only the amount of contact experiences that contributed to shaping students' motivation but the perceived importance attached to these contact experiences also had a direct, positive impact on motivation. The strengths of this impact for English and German measured separately with structural equation modelling almost paralleled the role of language learning attitudes (Csizér & Kormos, 2008a, 2008b, 2009).

## *2.3 Emotions*

According to current views of emotions, they have an important role in helping the individual adapt to their environments (Reeve, 2009), and as such, they are instrumental for coping with fundamental life tasks such as protection, reproduction, or the exploration of the environment (Plutchik, 1980), a prerequisite for any learning. Moreover, as Izard argued (2010), emotions are considered multi-componential by many recent definitions: besides claiming that neurobiological processes play a role in forming emotions, they emphasize the role of perceptual-cognitive processes and the phenomenological aspect, the feeling itself. In line with the above, Keltner et al.'s (2014) definition was used in our study, which states that emotions are "multifaceted responses to events that we see as challenges or opportunities in our inner or outer world, events that are important to our goals" (p. 27).

There are two main approaches to categorize emotions: according to the dimensional view, all emotions can be placed along a small number of continua like arousal/activation and valence/pleasantness (Larsen & Fredrickson, 1999). Although this approach appears practical as it circumvents the problems posed by the numerous and often overlapping labels that are used for describing emotions, it also disregards

the fact that distinct emotions usually have their own predictors, lead to different behavioral outcomes, and probably serve different functions (Izard, 2007). Emotions are believed to result from a process called appraisal (Lazarus, 1991). During this two-phase process, events are evaluated according to the individual's own concerns. The first phase, primary appraisal, is an automatic, almost reflex-like process, while cognitions play an important role during the second phase, called secondary appraisal. According to Lazarus (1991), these cognitions, which are inherently attached to the feelings experienced, have a fundamental role in determining the quality of the emotions and the way they are labelled by the individual. This suggests that emotions and cognitions are interlinked; therefore, cognitions about the individual's abilities, that is, their self-efficacy beliefs, for example, might be linked to emotions.

Although in the past studying the role of emotions in language learning was mostly limited to investigating the effects of anxiety (Horwitz et al., 1991), recently researchers have started to turn their attention to positive experiences and affective states (MacIntyre & Gregersen, 2012; MacIntyre & Mercer, 2014; Oxford, 2015). Dewaele and MacIntyre (2014, 2016) were the first who highlighted the importance of the feeling of enjoyment and argued for its positive effects on language learning in line with Fredrickson's (2003) broaden and build theory. In Hungary, Piniel and Albert (2018) conducted an exploratory study attempting to map English major university students' emotions in connection with different language skills, where enjoyment and anxiety emerged as the two most frequently experienced affective states. Moreover, Albert et al. (2018a, 2018b) investigated students' feelings of enjoyment, anxiety, boredom and apathy in connection with their language classes using a representative national sample. Two age groups were compared, and the findings revealed that while 7th-graders seemed to enjoy language learning more than 11th-graders, anxiety and apathy characterized the older students more than their younger peers. Despite the growing number of investigations focusing on different emotions besides anxiety, studies covering a wider range of emotions and attempting to link them to other individual variables are still lacking; thus, our study attempts to fill this niche.

## *2.4 Self-Efficacy*

Another, although less frequently investigated, yet seemingly key individual difference in terms of language learning success is learners' self-efficacy (Mills et al., 2007). According to Bandura's (1986) social cognitive theory, self-efficacy beliefs comprise "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (p. 391). In the present study, these actions were related to the language learning process, and the judgements referred to generally how capable people thought they were to successfully learn a foreign language in the school context and to complete particular language-learning tasks.

It is important to note that self-efficacy beliefs constitute a cognitive construct (in contrast with, for example, self-confidence, a socially defined construct), since they

involve cognition about one's own abilities (Mills, 2014). Self-efficacy beliefs in the academic context are said to be strongly influenced by learning experiences, more precisely mastery experiences, which include perceptions of a person's own abilities based on their successes/failures; vicarious experiences, which build on perceptions of the learners' own abilities compared to the perceived abilities of peers; verbal persuasions, in the academic context usually appearing as praise primarily coming from the instructor; and the experience of physiological and emotional states (Mills, 2014). Thus, learners' thoughts about their ability to learn a foreign language can be attributed to their experiences of success, how their achievements compare to those of their peers, the feedback from their instructor, as well as the emotions they experience during the process of language learning.

As for the effect of self-efficacy on learning, Linnenbrink and Pintrich (2002), in line with Zimmerman (2000), posited that learners with higher levels of self-efficacy beliefs are more inclined to invest more effort into their own learning. This relationship between L2 motivation and self-efficacy beliefs was investigated among Hungarian foreign language learners by Piniel and Csizér (2013). The authors found that self-efficacy beliefs impacted motivated learning behavior as well as learners' level of language anxiety, while self-efficacy was influenced by language learning experiences. Because self-efficacy seldom appears in investigations on individual differences in language learning, in the present study, we not only wanted to gain insight into this construct, but also to explore its possible links with learner autonomy, motivation, including learners' contact with the English language, as well as learners' emotions.

## 3 Methods

### *3.1 Research Questions and Design*

The following research questions were formulated to guide our investigation:

1. What characterizes secondary school students' autonomous learning behavior and autonomous use of technology, language learning motivation, emotions, and self-efficacy beliefs?
2. How can the relationships of the ID variables in the secondary school EFL context be described?

In order to answer these research questions, we designed and carried out a quantitative questionnaire study. Data was collected in the 2018–2019 academic year in two rounds from a secondary school in the capital city of Hungary, which resulted in two distinct data sets from two non-overlapping samples. The first set was gathered in January (Study 1) and the second set in May 2019 (Study 2). The two subsamples were analyzed separately due to technical reasons linked to the necessity of the

execution of the research plan submitted to the National Research, Development and Innovation Agency that provided the financial support for the study.

## 3.2 Participants

The sample in both Study 1 and Study 2 consisted of 53–53 learners, whose L1 was Hungarian. They all attended a secondary grammar school in Budapest, the capital city of Hungary and were students in Grade 10 and 11. The first set of data comprised 26 males and 27 females, while the second set included 31 male and 22 female learners' responses. The mean age in the first group was $M_{Sample1age} = 17.24$ years and in the second $M_{Sample2age} = 16.60$ years. The average time spent studying English as a Foreign Language was $M_{Sample1Englishlearning} = 9.2$ years in the first group and $M_{Sample2Englishlearning} = 8.8$ years in the second, which indicates that participants started learning English in primary schools. Participants in both samples can be characterized by comparable levels of English proficiency, from B1 to B2 according to the *Common European Framework of Reference* (Council of Europe, 2001). Around one third of the students in the samples had completed a complex B2-level exam at the time of the survey.

## 3.3 Questionnaires

Both studies utilized instruments with five-point Likert scales, where participants had to indicate the extent to which they agreed with particular statements (1 = *strongly disagree* to 5 = *strongly agree*). The questionnaire employed in Study 1 was slightly modified for Study 2 primarily in order to enhance the quality of the instrument and not all constructs were included in Study 2. As shown in this section, two scales were deleted from the second wave of data collection (*Direct contact* and *Perceived importance of contact*) due to questionnaire length considerations. In addition, items were added to some scales (*Autonomous learning behavior*, *Language learning experience*, *Cultural contact*), while for some scales, items with low item-level correlation were deleted from scales (*Autonomous use of technology*, *Hope*, *Pride*, *Anger*, *Shame* and *Apathy*). Apart from the scales, the final part of the instrument contained background questions concerning the participants' gender, age, and language learning history. The language of the questionnaire was Hungarian, the mother tongue of the participants. In what follows, we present the four groups of scales with their sources and definitions as well as sample items translated into English.

Two autonomy-related scales were used in the study that were based on Csizér and Kormos (2012):

1. *Autonomous learning behavior* (Study 1: 11 items; Study 2: 12 items): the extent to which participants are able to learn and practice English on their own

(example: "I spend more time practicing elements in English that I find difficult to understand").

2. *Autonomous use of technology* (Study 1: 6 items; Study 2: 4 items; based on Csizér & Kormos, 2012): learners' abilities to utilize the internet- and computer-based opportunities in order to improve their English knowledge (example: "I often use the Internet to improve my English").

The following motivation-related scales were included in our study. They were based on Dörnyei (2005, 2009), Csizér and Kormos (2012), and Kormos and Csizér (2008):

3. *Motivated learning behavior* (Study 1: 5 items; Study 2: 5 items): the extent to which learners are ready to invest energy in their foreign language learning (example: "I can honestly say that I do everything I can to master the English language").
4. *Ideal L2 self* (Study 1: 4 items; Study 2: 4 items): participants' vision about their future language use (example: "When I think of my future life, I imagine myself using English regularly").
5. *Ought-to L2 self* (Study 1: 5 items; Study 2: 5 items): what participants perceive as expectations in terms of their own language learning (example: "For all the people around me, English proficiency is an important part of general knowledge").
6. *Language learning experiences* (Study 1: 4 items; Study 2: 5 items): participants' experiences concerning learning English (example*:* "I like the activities that we do in English lessons").
7. *Cultural contact* (Study 1: 4 items; Study 2: 5 items): learners' perceived contact with English language cultural products (example: "I often watch films in English").
8. *Direct contact* (Study 1: 6 items): the perceived frequency of learners' direct contact with or use of the English language (example: "How often do you use English to speak with foreign friends?").
9. *Perceived importance of contact* (Study 1: 6 items): the extent to which learners find it important to use English with native or non-native speakers outside the language classroom (example: "I believe it is good to speak to foreigners because I can get to know their ways of speaking, their accents and vocabulary").

The concept of self-efficacy was measured by one scale. The selection of the items were guided by Albert et al. (2018b) and Piniel and Csizér (2013).

10. *Self-efficacy* (Study 1: 6 items; Study 2: 6 items): learners' beliefs about their abilities to successfully learn a foreign language (example: "I believe that I can do the speaking tasks we are given during English lessons").

A variety of positive and negative emotions related to the English lessons was assessed in our study. These scales were based on Pekrun (2014) and Pekrun et al. (2011) and were directly adopted from Albert et al. (2018a, 2018b) and Albert et al. (2020):

11. *Hope* (Study 1: 6 items; Study 2: 4 items): the extent to which learners feel hopeful about achieving success in learning English in the school context (example: "I feel hopeful about overcoming challenges in the process of learning English").
12. *Pride* (Study 1: 6 items; Study 2: 5 items): how proud learners are of their achievements in language learning and their attained proficiency (example: "I am proud of my achievements in learning English").
13. *Enjoyment* (Study 1: 4 items; Study 2: 4 items): the extent to which learners enjoy language learning in the school context (example: "I enjoy the topics that we discuss in English lessons").
14. *Curiosity* (Study 1: 6 items; Study 2: 6 items): participants' interest in learning English within the school context (example: "In English lessons, we deal with topics that arouse my curiosity").
15. *Confusion* (Study 1: 5 items; Study 2: 5 items): the extent learners feel confused about language learning (example: "Sometimes I feel confused because I don't understand what is happening in the English lesson").
16. *Boredom* (Study 1: 4 items; Study 2: 4 items): the extent participants feel bored during school language lessons (example: "I get bored by the activities in English lessons").
17. *Anger* (Study 1: 6 items; Study 2: 4 items): the extent participants feel angry related to English lessons at school (example: "It makes me angry if I can't complete the activity that the teacher assigns").
18. *Anxiety* (Study 1: 4 items; Study 2: 4 items): participants' feelings of worry and frustration related to activities in English language lessons (example: "I get frustrated if I can't understand an English-language text").
19. *Shame* (Study 1: 6 items; Study 2: 5 items): participants' feelings of shame related to their performance in English lessons (example: "I feel ashamed if I can't answer a question during our English lesson").
20. *Apathy* (Study 1: 5 items; Study 2: 4 items): learners' feelings of hopelessness about successful language learning in the school context (example: "I feel hopeless about ever mastering English in the school").

## *3.4 Data Collection Procedures and Analysis*

After gaining the approval of the school principal, the questionnaires were administered in January (Study 1) and May (Study 2) 2019 respectively. The participants were ensured of the anonymity of their responses and their participation was voluntary. The data collected was recorded and subjected to analysis using IBM's SPSS software version 20. The data was checked for normal distribution, then descriptive statistical analyses (means, standard deviations), reliability analysis using the Cronbach's alpha coefficient and correlational analyses using Pearson correlations were conducted using parametric procedures.

# 4 Results and Discussion

## *4.1 Descriptive Analyses*

First, we looked at the reliability of the scales by calculating Cronbach's alpha values, then we calculated the average scores and standard deviations for each of the scales. Concerning the individual variables in the focus of our study (i.e., autonomy, motivation, contact, self-efficacy, and emotions), all scales had an acceptable reliability coefficient of $\alpha = 0.61$ or higher (for details, see Tables 1 and 2).

**Table 1** The reliability analysis and descriptive statistics of the autonomy, motivation, contact and self-efficacy scales

| | Study 1 | | | Study 2 | | |
|---|---|---|---|---|---|---|
| Scales | α | *M* | *SD* | α | *M* | *SD* |
| Autonomous learning behavior | 0.81 | 3.10 | 0.64 | 0.80 | 3.18 | 0.61 |
| Autonomous use of technology | 0.82 | 3.84 | 0.71 | 0.63 | 3.60 | 0.83 |
| Motivated learning behavior | 0.83 | 3.87 | 0.74 | 0.79 | 3.77 | 0.79 |
| Ideal L2 self | 0.62 | 4.60 | 0.54 | 0.79 | 4.68 | 0.46 |
| Ought-to L2 self | 0.64 | 4.07 | 0.62 | 0.60 | 3.95 | 0.67 |
| Language learning experiences | 0.61 | 3.07 | 0.91 | 0.93 | 3.36 | 1.07 |
| Perceived importance of contact | 0.83 | 3.85 | 0.80 | n.a | n.a | n.a |
| Direct contact | 0.79 | 3.01 | 0.81 | n.a | n.a | n.a |
| Cultural contact | 0.66 | 4.63 | 0.65 | 0.64 | 4.67 | 0.51 |
| Self-efficacy | 0.94 | 4.04 | 0.78 | 0.92 | 4.07 | 0.81 |

**Table 2** The reliability analysis and descriptive statistics of the emotion scales

| | Study 1 | | | Study 2 | | |
|---|---|---|---|---|---|---|
| Scales | α | *M* | *SD* | α | *M* | *SD* |
| Hope | 0.87 | 4.10 | 0.84 | 0.74 | 4.21 | 0.66 |
| Pride | 0.83 | 3.60 | 0.91 | 0.88 | 3.72 | 0.92 |
| Enjoyment | 0.70 | 3.38 | 0.74 | 0.67 | 3.45 | 0.77 |
| Curiosity | 0.76 | 2.86 | 0.78 | 0.62 | 2.84 | 0.72 |
| Confusion | 0.84 | 2.67 | 0.66 | 0.70 | 2.29 | 0.75 |
| Boredom | 0.70 | 2.63 | 0.76 | 0.62 | 2.36 | 0.77 |
| Anger | 0.77 | 2.60 | 0.94 | 0.70 | 2.75 | 0.94 |
| Anxiety | 0.66 | 2.54 | 0.86 | 0.63 | 2.63 | 0.78 |
| Shame | 0.85 | 2.49 | 1.01 | 0.80 | 2.44 | 0.91 |
| Apathy | 0.84 | 2.23 | 1.00 | 0.78 | 2.22 | 0.95 |

In terms of autonomous language learning, in both samples the participants' mean scores were above 3 on a five-point Likert scale ($M_{Sample1} = 3.10$; $M_{\text{Sample2}} = 3.18$), which means that the learners in our study claimed to sometimes seek out opportunities on their own to expand their English language knowledge, but these average scores also suggest that there is still room for improvement in terms of increasing language learners' autonomy.

As regards language learning motivation, all three aspects resulted in relatively high average scores, with the ideal L2 self exhibiting the highest mean in both samples ($M_{\text{Sample1}} = 4.60$; $M_{\text{Sample2}} = 4.68$). Nonetheless, it must be noted that language learning experiences had the lowest mean in both of our studies among the motivational constructs ($M_{\text{Sample1}} = 3.07$; $M_{\text{Sample2}} = 3.36$) and the largest standard deviation ($SD_{\text{Sample1}} = 0.91$; $SD_{\text{Sample2}} = 1.07$). Among the motivational variables we measured, language learners' experiences are the most susceptible to everyday influences in and outside the classroom; therefore, the relatively low and wider spread of scores here deserve attention.

Based on the mean scores, we can say that our participants attributed high importance to contact with the cultural products related to the English language ($M_{\text{Sample1}} = 4.63$; $M_{\text{Sample2}} = 4.67$). Unfortunately, by looking at the data in the first sample, this result seems to be somewhat in contrast with the perceived direct contact that learners actually reported having with English. In fact, perceived direct contact had the lowest average among the variables measuring contact with the English language ($M_{\text{Sample1}} = 3.01$). Therefore, the notion that learners readily consume cultural products related to the English language should provide ample basis for the necessity of increasing their direct contact opportunities.

In connection with self-efficacy beliefs, participants' answers on the questionnaire showed that generally they believe they are able to complete language learning related tasks involving the different language skills ($M_{\text{Sample1}} = 4.04$; $M_{\text{Sample2}} = 4.07$). This is a promising result, as self-efficacy beliefs have been theorized to stem from language learning experiences (Mills, 2014) and have been shown to positively influence language learning motivation (Piniel & Csizér, 2013).

Concerning emotions related to learning English in the foreign language context, we found that the secondary school participants in our samples generally had stronger positive than negative emotional experiences (see Table 2). Among the positive emotions in our enquiry (hope, pride, enjoyment, curiosity), hope had the highest average score ($M_{\text{Sample1}} = 4.10$; $M_{\text{Sample2}} = 4.21$). This is an encouraging result because it further underpins the idea that the learners see knowing and using English as part of their future goals. Hope not only comprises the vision of a goal, but also a vision of the path that can lead towards reaching that goal (Snyder et al., 2002), which means that our participants are ready to take that path. Among the positive emotions, for both of our samples, curiosity seemed to have the lowest means ($M_{\text{Sample1}} = 2.86$; $M_{\text{Sample2}} = 2.84$).

As for the negative emotions that were measured (i.e., confusion, boredom, anger, anxiety, shame, and apathy), confusion appeared to have the highest average in the first sample ($M_{\text{Sample1}} = 2.67$), while the negative emotion with the highest mean in the second sample was anger ($M_{\text{Sample2}} = 2.75$). Apathy exhibited the lowest averages

in both studies ($M_{\text{Sample1}} = 2.23$; $M_{\text{Sample2}} = 2.22$), which is a logical outcome given the fact that hope (the opposite of apathy) had the highest mean score among the positive emotions.

## 4.2 Interrelationships of Language Learning Autonomy, Motivation, Self-Efficacy, and Emotions

Results of the Pearson correlational analyses of the two studies can be seen in Tables 3 and 4. Because of the high number of significant correlations, only those above $r = 0.50$, $p < 0.01$ are discussed here, which means the results from moderate to strong effect sizes are considered (Dörnyei, 2007). Correlations between the different scales revealed that in both of our samples, the two autonomy scales, namely autonomous use of technology, referring to the autonomous use of electronic devices and the Internet, and autonomous learning behavior, referring to students' ability to learn independently, correlated very strongly with motivated learning behavior ($r_{study1} = 0.608$, $r_{study1} = 0.709$, $r_{study2} = 0.563$, $r_{study2} = 0.776$ respectively). This finding supports the results of earlier studies which also found strong links between autonomy and language learning motivation (Kormos & Csizér, 2014). Although there were several significant correlations between components of the L2 motivational self-system, the only two correlations that reached the previously specified level were between autonomous use of technology and ideal L2 self in our first sample ($r_{study1} = 0.505$) and autonomous learning behavior and ought-to L2 self in our second sample ($r_{study2} = 0.522$). These findings might point to the importance of future self-images in promoting learner autonomy.

Having direct contact with the English language outside the classroom or having indirect contact with it through culture were strongly correlated with the autonomous use of technology ($r_{study1} = 0.686$ and $r_{study1} = 0.822$ respectively), while the perceived importance of contact was more highly correlated with autonomous learning behavior ($r_{study1} = 0.550$) in the case of our first sample (see Table 3). In our second study, we reduced the number of contact scales keeping only cultural contact, but a similarly high correlation between this scale and the autonomous use of technology could be seen there ($r_{study2} = 0.630$), as well. This might suggest that while having actual contact is related to the autonomous use of technology as technology can be used as an instrument for establishing contact, autonomous learning behavior is more strongly linked to the self-perceived importance attached to contact experiences, signifying the value assigned to those experiences by the learner.

Although correlations between both aspects of autonomy and self-efficacy were significant in our first sample, their magnitude only reached the previously specified level in the case of the autonomous use of technology ($r_{study1} = 0.633$). In our second study, this correlation was lower but still statistically significant, while the relationship between autonomous learning behavior and self-efficacy was no longer significant there. The trend identified here seems to support the existence of a link

**Table 3** Correlations between language learning autonomy, motivation, self-efficacy, and emotions in Study 1

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Motivated learning behavior | 1 | | | | | | | | | |
| 2. Ideal L2 self | 0.671** | 1 | | | | | | | | |
| 3. Ought to L2 self | 0.259 | 0.366** | 1 | | | | | | | |
| 4. Learning experience | 0.150 | 0.005 | 0.141 | 1 | | | | | | |
| 5. Culture | 0.574** | 0.561** | 0.212 | 0.058 | 1 | | | | | |
| 6. Perceived importance of contact | 0.656** | 0.514** | 0.311* | 0.189 | 0.505** | 1 | | | | |
| 7. Direct contact | 0.563** | 0.506** | 0.226 | 0.232 | 0.643** | 0.620** | 1 | | | |
| 8. Autonomous use of technology | 0.608** | 0.505** | 0.184 | 0.089 | 0.822** | 0.482** | 0.686** | 1 | | |
| 9. Autonomous learning | 0.709** | 0.379** | 0.248 | 0.459** | 0.393** | 0.550** | 0.454** | 0.567** | 1 | |
| 10. Self-efficacy | 0.661** | 0.508** | 0.029 | 0.053 | 0.606** | 0.509** | 0.589** | 0.633** | 0.425** | 1 |
| 11. Enjoyment | 0.509** | 0.418** | 0.142 | 0.468** | 0.297* | 0.492** | 0.479** | 0.330* | 0.590** | 0.332* |
| 12. Anxiety | −0.287* | −0.159 | 0.006 | −0.153 | −0.100 | −0.157 | −0.343* | −0.184 | −0.081 | −0.454** |
| 13. Boredom | −0.280* | −0.208 | −0.189 | −0.663** | −0.167 | −0.269 | −0.234 | −0.276* | −0.580** | −0.198 |
| 14. Apathy | −0.448** | −0.305* | −0.089 | −0.608** | −0.386** | −0.475** | −0.435** | −0.445** | −0.438** | −0.525** |
| 15. Hope | 0.735** | 0.662** | 0.140 | 0.155 | 0.649** | 0.558** | 0.647** | 0.696** | 0.526** | 0.731** |
| 16. Pride | 0.653** | 0.548** | 0.140 | 0.319* | 0.543** | 0.615** | 0.613** | 0.518** | 0.566** | 0.618** |
| 17. Curiosity | 0.326* | 0.168 | 0.256 | 0.632** | 0.165 | 0.299* | 0.238 | 0.272* | 0.720** | 0.043 |
| 18. Confusion | −0.342* | −0.166 | 0.051 | −0.001 | −0.266 | −0.150 | −0.260 | −0.241 | −0.076 | −0.533** |
| 19. Anger | −0.143 | −0.133 | 0.178 | 0.053 | −0.071 | −0.171 | −0.281* | 0.022 | 0.095 | −0.391** |
| 20. Shame | −0.143 | −0.087 | 0.185 | 0.094 | 0.009 | −0.161 | −0.189 | 0.087 | 0.174 | −0.310* |

*Note* *$p < 0.05$, **$p < 0.01$

**Table 4** Correlations between language learning autonomy, motivation, self-efficacy, and emotions in Study 2

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 1. Motivated learning behavior | 1 | | | | | | | |
| 2. Ideal L2 self | 0.362** | 1 | | | | | | |
| 3. Ought to L2 self | 0.407** | 0.380** | 1 | | | | | |
| 4. Learning experience | 0.041 | 0.124 | 0.115 | 1 | | | | |
| 5. Culture | 0.408** | 0.465** | 0.147 | −0.104 | 1 | | | |
| 6. Autonomous use of technology | 0.563** | 0.379** | 0.416** | −0.124 | 0.630** | 1 | | |
| 7. Autonomous learning | 0.776** | 0.366** | 0.522** | 0.030 | 0.338* | 0.662** | 1 | |
| 8. Self-efficacy | 0.133 | 0.550** | −0.021 | 0.085 | 0.543** | 0.359** | 0.187 | 1 |
| 9. Enjoyment | 0.331* | 0.374** | 0.441** | 0.595** | 0.018 | 0.117 | 0.454** | 0.061 |
| 10. Anxiety | 0.292* | 0.061 | 0.365** | −0.363** | 0.035 | 0.148 | 0.316* | −0.340* |
| 11. Boredom | −0.138 | −0.331* | −0.270 | −0.524** | 0.010 | −0.041 | −0.149 | −0.111 |
| 12. Apathy | 0.016 | −0.294* | 0.033 | −0.657** | −0.119 | 0.099 | 0.070 | −0.386** |
| 13. Hope | 0.506** | 0.659** | 0.202 | 0.168 | 0.560** | 0.443** | 0.361** | 0.708** |
| 14. Pride | 0.287* | 0.421** | 0.089 | 0.144 | 0.387** | 0.500** | 0.358** | 0.672** |
| 15. Curiosity | 0.115 | 0.258 | 0.269 | 0.671** | −0.097 | −0.026 | 0.174 | 0.005 |
| 16. Confusion | −0.016 | −0.303* | 0.147 | −0.016 | −0.363** | −0.236 | 0.013 | −0.680** |
| 17. Anger | 0.398** | 0.104 | 0.404** | 0.033 | −0.004 | 0.077 | 0.390** | −0.354** |
| 18. Shame | 0.333* | 0.030 | 0.443** | 0.022 | −0.208 | 0.108 | 0.315* | −0.429** |

between autonomy and self-efficacy also found in other studies (Mahmoudi & Asadi, 2016; Tilfarlioglu & Ciftci, 2011); however, it suggests that the association between self-efficacy and the use of technology might be more prominent than with other aspects of autonomy.

Both aspects of autonomy were strongly associated with a number of emotions in the classroom in the case of our first sample. Hope and pride correlated very strongly with autonomous use of technology ($r_{study1} = 0.696$, $r_{study1} = 0.518$ respectively), while in the case of autonomous learning behavior, there were very strong positive links with enjoyment ($r_{study1} = 0.590$) and curiosity ($r_{study1} = 0.720$) besides hope and pride ($r_{study1} = 0.526$, $r_{study1} = 0.566$, respectively) and a very strong negative one with boredom ($r_{study1} = -0.580$). Although similar trends can be witnessed in our second sample (see Table 4), their magnitude only reached the previously specified level in the case of autonomous use of technology and pride ($r_{study2} = 0.500$). It seems that feelings of pride deriving from previous successes and feelings of hope pertaining to future achievements are especially important emotions that correlate with learner autonomy. However, since the relationships of autonomy and affect related to language learning are still an uncharted territory, further research is needed to lend support to our findings.

As regards motivated learning behavior, besides its links with autonomy, it was also strongly correlated with the ideal L2 self ($r_{study1} = 0.671$) from Dörnyei's L2 motivational self-system. These findings are not surprising in light of the fact that the ideal L2 self has often been found to be associated with L2 motivation (for an overview see Csizér, 2020). Similar trends can be observed in the case of our second study (see Table 4) although the correlations were more moderate there.

Contact also had strong links with motivated learning behavior in our first sample; this was true for direct contact ($r_{study1} = 0.563$) as well as indirect contact exemplified by culture ($r_{study1} = 0.574$). Nevertheless, the strongest correlation was detected in connection with the perceived importance of contact ($r_{study1} = 0.656$) which lends support to Kormos's and Csizér (2007) earlier claim that the perceived importance attached to the contact experiences might be just as important as the actual amount of contact experiences the students have. Cultural contact had a weaker but still significant correlation with motivated learning behavior in our second sample, as well (see Table 4).

Besides motivated learning behavior, contact scales were also very strongly associated with certain emotions: in the case of our first sample the feelings of both hope and pride correlated positively and above $r = 0.50$ with direct contact, culture, and the perceived importance of contact (for hope $r_{study1} = 0.647$, $r_{study1} = 0.649$, $r_{study1} = 0.558$, for pride $r_{study1} = 0.613$, $r_{study1} = 0.543$, $r_{study1} = 0.615$ respectively), while in the case of our second sample only hope had such strong positive correlations with culture ($r_{study2} = 0.560$). Quantity and even more so the quality of contact were found to be consistently positively related to positive emotions and negatively to negative ones in an earlier study by MacIntyre and Vincze (2017). Although they used different scales and the magnitudes of the associations found by them were more moderate, it suggests that the investigation of the relationship of contact experiences and emotions might be an area worthy of future research.

Self-efficacy was positively correlated with motivated learning behavior in the case of our first sample ($r_{study1} = 0.661$), lending support to earlier claims stating that learners with higher levels of self-efficacy beliefs are more likely to put more effort into their own learning (Linnenbrink & Pintrich, 2002; Piniel & Csizér, 2013; Zimmerman, 2000). Besides motivated learning behavior and the earlier discussed autonomy, self-efficacy also seemed to be linked with several other constructs of our questionnaire. For example, it was positively correlated with the ideal L2 self in both our samples ($r_{study1} = 0.508$, $r_{study2} = 0.550$), indicating that future self-images of success are probably rooted in cognitions about the individual's capability for language learning success in the present. Self-efficacy also had strong ties with all types of contact, for example direct contact ($r_{study1} = 0.589$), cultural contact ($r_{study1} = 0.606$) and the perceived importance of contact ($r_{study1} = 0.509$) in the case of our first sample, and with culture ($r_{study2} = 0.543$) in the case of our second. This might suggest either that self-efficacy beliefs are important prerequisites of establishing contact or that contact experiences are beneficial with regard to enhancing self-efficacy beliefs. These possibilities should be explored in further studies.

The idea that self-efficacy beliefs, which refer to cognitions regarding an individual's abilities, might be linked to emotions through the appraisal processes involved in both of them (Lazarus, 1991) seems to be supported by the fact that self-efficacy had strong correlations with several emotions tapped by our questionnaire. In the case of both of our samples, hope and pride correlated highly positively with self-efficacy ($r_{study1} = 0.731$, $r_{study2} = 0.708$; $r_{study1} = 0.618$, $r_{study2} = 0.672$ respectively), whereas it had strong negative relationships with confusion ($r_{study1} = -0.533$, $r_{study2} = -0.680$) in both cases. In our first sample, its relationship with apathy was also strongly negative ($r_{study1} = -0.525$). Although the positive relationships of self-efficacy with hope and pride and the negative ones with confusion and apathy seem intuitively appealing, these results should be confirmed via future research since this area is rather unexplored.

Emotions also need to be highlighted with regard to motivated learning behavior. Hope had very strong positive links with it in both of our samples ($r_{study1} = 0.735$, $r_{study2} = 0.506$) whereas in the case of our first sample, pride ($r_{study1} = 0.653$) and enjoyment ($r_{study1} = 0.509$) also reached our previously specified level. Emotions also had strong correlations with various components of the L2 Motivational Self System. Hope had high positive correlations with the ideal L2 self in both of our samples ($r_{study1} = 0.662$, $r_{study2} = 0.659$), while its relationship with pride only reached the previously specified level in the case of our first sample ($r_{study1} = 0.548$). As regards the ought-to L2 self, we found no significant correlations with emotions in our first sample, and although it had significant correlations in our second sample, they were all below $r = 0.50$, so they will not be discussed here. Perhaps it is not surprising that out of the three components of the L2 Motivational Self System, the learning experience seemed to be most strongly associated with emotions. The learning experience had strong positive correlations with curiosity in both of our samples ($r_{study1} = 0.632$, $r_{study2} = 0.671$) with enjoyment also reaching our previously specified level in our second ($r_{study2} = 0.595$), while boredom and apathy had strong negative links with it ($r_{study1} = -0.663$, $r_{study2} = -0.524$, $r_{study1} = -0.608$, $r_{study2} =$

−0.657 respectively). The fact that besides enjoyment so many other emotions had strong correlations with the ID constructs examined suggests that for a more refined understanding of classroom learning experiences probably a wider array of emotions should be investigated in the future, which is in line with the proposal put forward by MacIntyre and Vincze (2017) earlier.

## 5 Conclusion

Based on the above presented results and discussion, we can draw the conclusion that the ID scales investigated manifest intricate interrelationships and hence their isolated investigations cannot be justified in the future. It seems that when learning processes are to be investigated in the foreign language classroom, the traditional motivational and emotion-related scales should be complemented with other scales as well. Hope and pride, and in some cases curiosity, seem to be just as important if not more prominent than enjoyment. In addition, boredom, apathy and confusion had stronger links with ID variables than anxiety did in our samples. The role of both contact experiences and self-efficacy beliefs is important in shaping the positive language learning experiences and the effort students are willing to invest into foreign language learning.

As for pedagogical implications, we can say that our study has proven that the interconnected relationships of individual differences variables provide a more comprehensive picture in contrast with singling out one factor in particular. Our data and findings have led us to see that present experiences of success in language learning in the form of using technology and other resources autonomously, positive experiences with cultural contact, and associated positive emotions, especially pride, are strongly connected to language learners' future images, as embedded in motivation, in their sense of self-efficacy to be successful, and in their feelings of hopefulness. This suggests that the language learning experiences of the present are inherently tied to the future paths language learners take. The magnitude of this link should raise the awareness of language educators concerning the importance of providing learners with positive experiences, not in the mere sense of enjoyable activities, but in the sense of allowing for successes that learners can take pride in, where they can feel that they are equipped with the tools they need in order to become competent foreign language users. These experiences in the present are likely to feed into language learners' future by way of fostering feelings of hope, strengthening learners' motivation, and encouraging taking responsibility for their own learning.

No research is without limitations, and ours is no exception in this respect. The small sample sizes should remind us to be cautious when the generalizability of our results is discussed. As a follow-up, we are in the process of employing the questionnaire presented in Study 2 in a large-scale nationwide study in Hungary. In addition, we must also not forget that the above analyses were based on self-reported data that carry their own limitations. In order to counteract this problem, we are in the process of exploring the relationships described above by employing a more situated

and task-based research design in order to investigate how the abovementioned ID variables contribute to task execution in the foreign language classroom. Finally, further comparative studies between the roles of positive and negative emotions should also be welcome.

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