

A multi-perspective analysis of adult learner differences in foreign language learning: Motivation, autonomous learning and self-regulation

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Abstract

Learner autonomy, self-regulatory strategies and motivational factors play a significant role in learning English as a foreign language (EFL) which can, nevertheless, show considerable changes in the lifetime of learning. There are thus numerous studies that investigate the dynamic nature of these constructs by exploring possible learner differences between younger and older adult population. However, research that discusses particularities within the age group of older adult learners is scarce. Hence, this paper examined the relationship among autonomous learning, self-regulation, and learner motivation by considering older adults' age and educational background. Results indicate that there are statistically significant differences among specific aspects of motivational and autonomy-related constructs when participants' age was taken into account. Certain self-regulatory and autonomous learning skills showed further differences when older adults' age and educational attainment were considered. Finally, we present practical pedagogical recommendations based on our empirical findings.

Keywords: learner autonomy; motivation; self-regulation; senior learners, EFL context

1. Introduction

Older people, particularly those aged 50 to 80+, represent a growing demographic group in societies (United Nations, 2017). Educational gerontology has therefore received greater attention in certain countries (Gómez, 2016) and numerous instructional programs have been introduced to promote older adults' active social involvement through education (Naegele & Bauknecht, 2013).

Previous research in this field focused on their changed mental abilities (Baddeley, Eysenck, & Anderson, 2009); however, only a few studies differentiated within the age range of 50 to 80+ and investigated the particularities of the different age groups (Lin & Sandmann, 2012). These include mainly cross-sectional investigations that examine the heterogeneity of various cognition-related capabilities among older adults in the first instance (Shimamura, Berry, Mangels, Rusting, & Jurica, 1995; Sward, 1945; Voelcker-Rehage, 2008). Some longitudinal studies highlighted age-differences as well as other factors that can impact the cognitive performance of older adults (Bosma van Boxtel, Ponds, Houx, & Jolles, 2003; Christensen, Henderson, Griffiths, & Levings, 1997; Shaie, 1994). In particular, it was found that an intellectually stimulating environment has a sustainable effect on primary mental abilities of the elderly (Shimanure et al., 1995; Stern, 2003; Van Hooren, Valentijn, Bosma, Ponds, Van Boxtel, & Jolles, 2007). However, research on foreign language (FL) education which explores differences and specifics within this age range (50+) is scarce (Klimczak-Pawlak & Kossakowska-Pisarek, 2018). Studies that make important distinctions based on age-groups within this larger range do not exist, to our current knowledge. Therefore, this study aims to fill in this gap by forming two age groups (below and above the age of 65 years, the retirement age in Hungary) and investigates the specifics of their learning behavior. Levels of educational background was also broken down into further categories in order to arrive at an in-depth multiperspective analysis of learner differences in motivational, self-regulatory- and autonomous learning.

2. Theoretical background

2.1. Key constructs for a multi-perspective analysis of adult learner differences in foreign language learning

There has been a growing interest in researching self-direction in learning since Hole's (1961) publication on adult learners' continuing education, in particular, by focusing on the multifaceted nature of post-school learning activities (e.g., Derrick & Carr, 2003; Diaz, 1988; Johnston & Riviera, 1965; Knowles, Holton, & Swanson, 2014). Three constructs that are closely related have been identified

as key for understanding adult learner differences in general and in particular, in language learning: motivational strategies, learner autonomy, and self-regulation.

Motivational strategies constitute a complex phenomenon that refers to strong persistence and willingness in intensifying effort in learning (Jones, 2013; Reeve, 2014). There are several rational as well as community-based motivational dimensions that contribute to adult engagement in learning (Knowles et al., 2014). These can be strengthened by various educational, professional developmental or social need-driven engagements which may enhance positive attitude towards learning in adulthood (Wlodkowski & Ginsberg, 2017). As for foreign language learning, it has been found that two main components affect foreign language learning, namely, integrative and instrumental orientation. The first one refers to a positive attitude towards the community and culture of the target language, while instrumentality concerns learning pursued with the purpose of practical gain (Gardner, 2010). These two components are relevant and concern multiple age groups (e.g., Csizér & Kormos, 2012).

Autonomy in learning is conceptualized as the capability and willingness to plan, conduct and reflect upon one's learning process (cf. Murray, 2014). Research has shown that pedagogical and psychological aspects of behavioral intentions in independent learning are equally crucial in order to unravel its complexity (Long, 1989 in Confessore & Park, 2004). Hence, the importance of understanding and facilitating autonomous learning emerged in language pedagogy as well (Little, 2007). As found, active engagement in taking control over learning management (including classroom and curriculum decisions), cognitive processes of strategic learning and study content regarding the independent use of technological or paper-based learning resources constitute key elements of autonomy in foreign language learning (Benson, 2001).

Self-regulatory strategies were also found to play a significant role in adult learners' independent learning process (Stefanou, Stolk, Prince, Chen, & Lord, 2013). Self-regulation concerns learners' capability of behavioral control regarding the motivational and cognitive elements of their own learning process (Zimmerman, 1986, as cited in Cubucku, 2009, p. 54). Self-regulatory skills in language learning specifically encompass control strategies over pursuing learning goals, maintaining concentration, and certain distracting emotional states as well that may arise while studying (Tseng, Dörnyei, & Schmidt, 2006).

2.2. Additional perspective: Selected demographic characteristics

Prior research has shown that certain demographic variables can be also related to one's learning behavior (Derrick, Rovai, Ponton, Confessore, & Carr, 2007). It was found that increase in age has a potential effect on participants' readiness

in learning (Dixon, 1992; Fontain, 1996). It was also proven that adult learners' prior educational level can also impact their independent learning, meaning that years spent in education had a positive bearing upon the level of propensity in learning (Martin, 1992; Owen, 1999; Scott, Furnell, Murphy, & Goulder, 2015).

Further, educational background may act as an important determinant on motivational orientation, that is, adults' willingness to participate in different learning activities is associated with higher level of education (Kim & Merrian, 2004). It was also revealed that learner motivation changes with age, meaning that older adults' motivational behavior is affected by different variables as compared to younger generations. In particular, important motivational factors are related to general interest in learning (Lin & Sandmann, 2012; Kim & Merrian, 2004), or learning motivation is maintained because of establishing social contact rather than in the interest of practical gains (Furst, & Steel, 1986).

Previous research highlighted that age, amongst others, may play an important role in developing self-regulation skills (Price, Hertzog, & Dunlosky, 2010). Regarding the level of learners' emotional control (Bigdeli, 2010), it was revealed that older adults often experience a higher level of learner anxiety than younger learners (Grein, 2013; Alvarado, 2008; Gómez, 2014). The ability to sustain focus was also found to show considerable changes with age, meaning that older learners have difficulties in maintaining attentive performance (O'Halloran, Finucane, Savva, Robertson, & Kenny, 2013), which may also impact their overall learning achievement (Grein, 2013).

As for language learning, FL learning behavior was found to be also determined by several socioeconomic variables including age or previous learning experiences (DeKeyser, 2000; Lightbown & Spada, 2006; Kaczor, 2011; Singleton & Ryan, 2004). Foreign language learning behavior differs from that of adult learners in some respects (Grein, 2013; Greilberger, Castellani, & Wachter, 2013). First, their motivational and goal orientation are different from those of younger adults. In particular, their overarching aims of FL learning include developing effective communicational skills that can be used either in maintaining social contacts (Klimczak-Pawlak & Kossakowska-Pisarek, 2018) or in accessing information in the target language (Schiller & Dorner, in press) rather than attending to potential pragmatic gains (Eguz, 2019).

Further, Berndt (2003, 2004) pointed out that age and educational background may affect the level of autonomy in learning. This means that older learners may not be able to manage their own learning process as effectively as younger adults because they lack past FL learning experiences. In other words, foreign language learning and language learning or study skills needed were not emphasized for these generations in their school years, which may pose challenges in independent learning.

These findings about factors influencing learning behavior were generated from studies that looked at older learners above 50, assuming that this demographic group had been homogenous. The current study, however, revisits this assumption and explores differences and specifics within this particular demographic group.

3. The study

3.1. Research design and methods

The main aim of this study is to measure older EFL learners' learning related-autonomy, motivation, as well as self-regulation. In particular, we explored the differences within the age-range (50-80+) by creating two larger groups (those below and above 65 years). As for educational attainment, there were three separate groups formed: secondary, college, and university degree. We designed a quantitative study with the following research questions:

1. Is there a significant relationship between motivational and self-regulatory learning behavior of the participating older learners?
 - 1.1. Are there any significant differences in the correlation of motivational and self-regulatory learning behavior with regards to the two age groups of older learners?
 - 1.2. Are there any significant differences in the correlation of motivational and self-regulatory learning behavior with regards to the educational attainment of these particular age groups?
2. Is there a significant relationship between motivational and autonomous learning behavior of the participating older learners?
 - 2.1. Are there any significant differences in the correlation of motivational and autonomous learning behavior with regards to the two age groups of older learners?
 - 2.2. Are there any significant differences in the correlation of motivational and autonomous learning behaviour with regards to the educational attainment of these particular age groups?
3. Is there a significant relationship between self-regulatory and autonomous learning behavior of the participating older learners?
 - 3.1. Are there any significant differences in the correlation of self-regulatory and autonomous learning behaviour with regards to the two age groups of older learners?
 - 3.2. Are there any significant differences in the correlation of self-regulatory and autonomous learning behaviour with regards to the educational attainment of these particular age groups?

3.2. Participants and setting

The study involved Hungarian older learners ($N = 106$) who studied English as a foreign language (EFL). Participation in the research was voluntary. Data collection took place in October 2019. The research was granted ethical clearance by the Ethical Committee of Eötvös Loránd University (ID: 2019/299). Participants' age-range was between 52 and 82 years with a mean of 65.81. The paper-based 5-point Likert scale questionnaire entailed 63 items. It also contained open-ended questions regarding the participants' age, educational attainment, and level of EFL knowledge. The constructs of the questionnaire are presented below.

3.3. Research instrument

The questionnaire was constructed following suggested protocols by Csizér and Kormos (2012) and Kormos and Csizér (2014) that investigated the relation among attitudes regarding language learning motivation, self-regulatory strategies, and autonomous learning behaviour of secondary school -and university students as well as adult learners. The following list entails the scales of our research instrument (see Appendix):

- *Motivational intensity*. It aimed at measuring invested effort and desire to learn EFL. Items were taken from research by Gardner (2004).
- *Integrative Orientation*. As a measure on cultural purposes of language learning, items were formed on the basis of the study of Kormos and Csizér (2014).
- *Instrumental orientation*. The other measure on motivation relies on our previous study investigating older adults' instrumentality regarding EFL learning. We found that old-aged FL learners' instrumental orientation is related to their experienced independence while travelling (Schiller & Dorner, in press).
- *Commitment control*. The items regarding goal-directed learning behaviour were developed based on the study of Csizér and Kormos (2012).
- *Satiation control*. It concerned self-regulatory control over boredom in particular (Csizér & Kormos, 2012).
- *Emotional control*. It served as a measure of emotional self-regulation over learning (Csizér & Kormos, 2012).
- *Metacognitive control*. The items over metacognitive control were used partly by Csizér and Kormos (2012), extended by items of Tseng and colleagues (2006) that concerned learning related attentive performance. Items originally written in English were translated into Hungarian by using the technique of forward and backward translation (Tsang et al., 2017).
- *Independent use of cognitive and metacognitive strategies*. It consisted of scales of cognitive strategies concerning autonomy-seeking opportunities

of learning with the focus on the four main skills of listening, reading, writing, and speaking. The construct was further extended by strategies on memorisation and metacognition. Scales were based on the study of Csizér and Kormos (2012) with an extension of self-developed items.

- *Independent use of learning resources*. It concerned the independent use of computer-based learning resources (Csizér & Kormos, 2012).

3.4. Data analysis

We conducted correlation analyses to see the strength of relationship between motivational, self-regulatory, and learner autonomy-related variables. Our aim was to find out more about the possible specifics within this age group. We thus created two separate groups within older learners: younger than 65 years ($N = 61$) and older than 65 years ($N = 45$). Furthermore, we split them into groups on the basis of their level of education: secondary education ($N = 15$), college degree ($N = 60$), or university degree ($N = 31$). We performed the statistical analyses with IBM SPSS version 26. Our primary goal was to measure the strength of relationship among variables concerning English as a Foreign Language motivation, self-regulation skills, and learner autonomy while taking age and educational background into consideration. Therefore, we used partial correlation by controlling for the effect of the other underlying variable (Rachmattullah, Ha, & Park, 2019). Moreover, we conducted further measurement in R (Kim, 2015; R Core Team, 2017) using package *diffcor* (Fukushima & Nishida, 2016) which is used for investigating significant changes in the correlation relationship among the tested variables. For the present study has an exploratory objective, all sub-variables were correlated with one another.

4. Results

4.1. Descriptive statistics and reliability measures

In order to define reliability, we used component analysis with the predefined internal consistency value of $\alpha \leq 0.60$ (DeVellis, 2012) and Cronbach's alpha internal consistency reliability coefficients. Results of the descriptive statistics are outlined in Table 1. As for internal consistency, all scales were found acceptable. The highest mean values included motivational intensity ($M = 3.86$) and integrative orientation ($M = 3.56$), which indicates that older learners' motivational attitudes concerning their intended learning effort and integrativeness play a significant role in their EFL learning. The largest variation in *SD*-values was determined in the case of cognitive strategies and metacognitive strategies of autonomous

learning behavior, suggesting a great diversity among older adults regarding their strategic EFL learning.

Table 1 Internal consistency coefficients and the descriptive statistics

| Scales | Item No. | Cronbach's alpha | <i>M</i> | <i>SD</i> |
|---------------------------------------|----------|------------------|----------|-----------|
| integrative orientation | 4 | .671 | 3.56 | .76 |
| instrumental orientation | 4 | .775 | 3.14 | .82 |
| commitment control | 4 | .737 | 3.18 | .74 |
| satiation control | 4 | .746 | 3.36 | .83 |
| emotional control | 4 | .821 | 3.37 | .82 |
| metacognitive control (concentration) | 4 | .774 | 3.43 | .81 |
| independent use of learning resources | 5 | .748 | 3.41 | .69 |
| cognitive strategies of writing | 4 | .799 | 3.02 | .80 |
| cognitive strategies of reading | 4 | .894 | 2.67 | .90 |
| cognitive strategies of speaking | 4 | .849 | 2.95 | .93 |
| cognitive strategies of memory | 4 | .856 | 2.88 | .85 |
| metacognitive strategies | 4 | .769 | 2.99 | .87 |

4.2. Correlation analysis

We explored the relations among motivational, self-regulatory- and autonomous learning behaviour of older adults by considering their age and educational attainment. We thus compared each construct with one another in order to see the emerging differences.

4.2.1. Relationship between motivational and self-regulatory learning behaviour and differences in the correlation regarding participants' age and educational attainment

First, we investigated the relationship between the subcategories of learner motivation and self-regulation. Additionally, we aimed to find out possible differences when participants' age or educational background was concerned. We found that in the case of both underlying variables (Table 2, Table 3), significant relationship emerged between motivational intensity and most of the sub-variables of self-regulation.

When participants' age was taken into consideration in the relationship among motivational and self-regulatory variables, the highest correlation coefficient was found between motivational intensity and satiation control (Table 2). Although correlation among variables does not suggest an inevitable causation; it may indicate that control over boredom plays an important role when strengthening inner drive to learn. All coefficients were positive and significant but did not reveal considerable differences between the two age groups.

Table 2 Pearson and partial correlation test of sub-variables of motivational and self-regulatory variables concerning the age of the participants

| Correlations | commitment control | satiation control | emotional control | meta-cognitive control |
|--------------------------|--------------------|-------------------|-------------------|------------------------|
| <u>Learners under 65</u> | | | | |
| motivational intensity | .43** | .59** | .34** | .55** |
| integrative orientation | .40** | .13 | .15 | .22 |
| instrumental orientation | .12 | .01 | .13 | -.05 |
| <u>Learners above 65</u> | | | | |
| motivational intensity | .64** | .64** | .46** | .63** |
| integrative orientation | .27 | .07 | .31 | .08 |
| instrumental orientation | .27 | .16 | .05 | .13 |

Note. N = 106. Learners under 65 (N = 61) and learners above 65 (N = 45); *p < 0.05 ** p < 0.01

Regarding the strength of relationship among motivational and self-regulatory variables when considering educational background, Table 3 presents that the highest correlation was again between motivational intensity with data items of satiation control. There were not any significant differences between the three groups of educational attainment; however, negative correlation could be detected between instrumental orientation and certain self-regulatory variables in the matter of participants with lower educational background. This may imply that pursuing practical aims of learning another language does not have an overall positive relation with self-regulation.

Table 3 Pearson and partial correlation test of sub-variables of motivational and self-regulatory variables concerning the educational background of the participants

| Correlations | commitment control | satiation control | emotional control | meta-cognitive control |
|----------------------------|--------------------|-------------------|-------------------|------------------------|
| <u>Secondary education</u> | | | | |
| motivational intensity | .36 | .49 | .28 | .48 |
| integrative orientation | .59 | .36 | .04 | .66* |
| instrumental orientation | .25 | .13 | -.01 | .45 |
| <u>College degree</u> | | | | |
| motivational intensity | .49** | .65** | .36** | .59** |
| integrative orientation | .27* | .03 | .17 | .08 |
| instrumental orientation | .07 | -.02 | .01 | -.16 |
| <u>University degree</u> | | | | |
| motivational intensity | .58** | .53** | .32 | .58** |
| integrative orientation | .27 | .11 | .28 | .18 |
| instrumental orientation | .28 | .21 | .05 | .24 |

Note. N = 106. Learners with secondary education (N = 15), college degree (N = 60), or university degree (N = 31); *p < 0.05 ** p < 0.01

4.2.2. Relationship between motivational and autonomous learning behaviour and differences in the correlation regarding participants' age and educational attainment

We conducted further measurement between motivational and autonomous learning behaviour and searched for differences in the correlation regarding participants' age and educational attainment. Significant relationship of sub-variables of learner motivation and autonomy was found between motivational intensity and sub-categories of autonomous learning behaviour (Table 4 and Table 5), meaning that invested effort in learning may have a positive relation with the action of taking responsibility over one's own learning project.

Concerning the age of the participants, correlation between motivational variables and sub-categories of autonomous learning behavior showed diversity in strength (Table 4). Results indicate that motivational intensity and listening ($p = .03$) as well as memory strategies related to autonomous learning behavior ($p = .01$) show statistically significant differences between the two age groups. We may draw the possible inference that in the case of learners above the age of 65, the level of the intended desire and effort to invest in learning EFL may play a greater role in the development of learner autonomy than the variables of integrative or instrumental orientation.

Table 4 Pearson and partial correlation test of sub-variables of motivational and autonomous learning behavioral variables concerning the age of the participants

| Correlations | learning resources | listening strategies | writing strategies | reading strategies | speaking strategies | memory strategies | meta-cognitive strategies |
|--------------------------|--------------------|----------------------|--------------------|--------------------|---------------------|-------------------|---------------------------|
| <u>Learners under 65</u> | | | | | | | |
| motivational intensity | .22 | .20 | .25 | .47** | .44** | .38** | .40** |
| integrative orientation | .07 | .26 | .29 | .17 | .45 | .24 | .35** |
| instrumental orientation | .09 | .15 | .05 | -.08 | .30* | -.06 | .51 |
| <u>Learners above 65</u> | | | | | | | |
| motivational intensity | .22 | .55** | .30 | .44** | .55** | .71** | .42** |
| integrative orientation | .04 | .15 | .12 | .18 | .35* | .19 | .05 |
| instrumental orientation | .14 | .03 | .02 | .03 | .24 | .14 | -.08 |

Note. $N = 106$. Learners under 65 ($N = 61$) and learners above 65 ($N = 45$); * $p < 0.05$ ** $p < 0.01$

According to the correlation test of sub-variables about motivational and autonomous learning behavioral scales (Table 5), statistically significant differences among the 3 types of educational background were between integrative orientation and speaking strategies ($p = .04$). The highest correlational coefficient was in the case of learners with secondary education. This indicates that in their case, social and cultural purposes of language learning may play a greater role in the development of effective communication strategies than practical reasons

of learning the language, such as being able to request information when interacting with people of different cultural background.

Table 5 Pearson and partial correlation test of sub-variables of motivational and autonomous learning behavioral variables concerning the educational background of the participants

| Correlations | learning resources | listening strategies | writing strategies | reading strategies | speaking strategies | memory strategies | meta-cognitive strategies |
|----------------------------|--------------------|----------------------|--------------------|--------------------|---------------------|-------------------|---------------------------|
| <u>Secondary education</u> | | | | | | | |
| motivational intensity | -.05 | .35 | .09 | .58* | .63* | .69** | .56* |
| integrative orientation | .12 | .44 | .43 | .56* | .75** | .58* | .56* |
| instrumental orientation | -.16 | .09 | -.05 | .26 | .52 | .17 | .19 |
| <u>College degree</u> | | | | | | | |
| motivational intensity | .28* | .25 | .32* | .41** | .45** | .47** | .36** |
| integrative orientation | .01 | .22 | .31* | .17 | .42** | .14 | .26* |
| instrumental orientation | .07 | .09 | .12 | -.03 | .28* | -.09 | -.16 |
| <u>University degree</u> | | | | | | | |
| motivational intensity | .04 | .46* | .24 | .45* | .44* | .64** | .42* |
| integrative orientation | -.14 | .01 | .03 | .03 | .27 | .20 | .03 |
| instrumental orientation | .24 | .07 | .05 | -.09 | .12 | .20 | -.03 |

Note. $N = 106$. Learners with secondary education ($N = 15$), college degree ($N = 60$), or university degree ($N = 31$); * $p < 0.05$ ** $p < 0.01$

4.2.3. Relationship between self-regulatory and autonomous learning behaviour and differences in the correlation regarding participants' age and educational attainment

Finally, we conducted further analysis in order to test for significant relationships between self-regulatory and learner autonomy related variables and looked for possible differences concerning the two background variables. Tables 6 and 7 show that the highest significant correlation coefficient was between metacognitive control and sub-categories of autonomous learning behaviour. This may suggest that attentive performance plays an important role in the development of learner autonomy related strategies.

As the results of the correlation analyses were relatively different in the two age-groups (Table 6), we conducted further tests to see whether these differences were statistically significant. Results indicate that there was substantial difference between satiation ($p = .02$), metacognitive control ($p = .00$) and listening strategies. There was also statistically significant difference between metacognitive control and autonomous learning behavior concerning memory-related cognitive strategies ($p = .00$). This may imply that for learners above 65, development in strategies of controlling boredom as well as attentive performance may have greater effect on their learner autonomy.

Table 6 Pearson and partial correlation test of sub-variables of self-regulatory and autonomous learning behavioral variables concerning the age of the participants

| Correlations | learning resources | listening strategies | writing strategies | reading strategies | speaking strategies | memory strategies | meta-cognitive strategies |
|--------------------------|--------------------|----------------------|--------------------|--------------------|---------------------|-------------------|---------------------------|
| <u>Learners under 65</u> | | | | | | | |
| commitment control | .21 | .35** | .45* | .39** | .46** | .75** | .55** |
| satiating control | .23 | .25 | .36** | .41** | .36** | .71** | .55** |
| emotion control | .36** | .29* | .23 | .31* | .28* | .47** | .29* |
| meta-cognitive control | .13 | .15 | .39** | .48** | .29* | .72** | .56** |
| <u>Learners above 65</u> | | | | | | | |
| commitment control | .37* | .52** | .33* | .41 | .60 | .85 | .64 |
| satiating control | .37* | .61** | .49** | .56** | .60** | .79** | .59** |
| emotion control | .25 | .39** | .25 | .27 | .52 | .59 | .44 |
| meta-cognitive control | .40** | .53** | .40** | .55** | .90** | .90** | .73** |

Note. $N = 106$. Learners under 65 ($N = 61$) and learners above 65 ($N = 45$); * $p < 0.05$ ** $p < 0.01$

Table 7 Pearson and partial correlation test of sub-variables of self-regulatory and autonomous learning behavioral variables concerning the educational background of the participants

| Correlations | learning resources | listening strategies | writing strategies | reading strategies | speaking strategies | memory strategies | meta-cognitive strategies |
|----------------------------|--------------------|----------------------|--------------------|--------------------|---------------------|-------------------|---------------------------|
| <u>Secondary education</u> | | | | | | | |
| commitment control | .07 | .28 | .21 | .26 | .52 | .17 | .19 |
| satiating control | .04 | .11 | .06 | .33 | .43 | .69** | .78** |
| emotional control | .18 | .27 | -.35 | -.19 | .11 | -.01 | .30 |
| metacognitive control | .11 | .30 | .26 | .53 | .75** | .86** | .77** |
| <u>College degree</u> | | | | | | | |
| commitment control | .34** | .38** | .36** | .27* | .51** | .81** | .56** |
| satiating control | .31* | .38** | .41** | .39** | .49** | .74** | .47** |
| emotional control | .37** | .37** | .41** | .39** | .49** | .74** | .47** |
| metacognitive control | .30 | .26* | .38** | .35** | .39** | .78** | .63** |
| <u>University degree</u> | | | | | | | |
| commitment control | .06 | .53** | .56** | .64** | .53** | .91** | .63** |
| satiating control | .25 | .59** | .65** | .66** | .49** | .77** | .69** |
| emotional control | .13 | .26 | .38 | .32 | .37* | .35 | .40* |
| metacognitive control | .13 | .47** | .48** | .57** | .38* | .89** | .68** |

Note. $N = 106$. Learners with -secondary education ($N = 15$), -college degree ($N = 60$), or- university degree ($N = 31$); * $p < 0.05$ ** $p < 0.01$

Further, results of the correlation analysis of self-regulatory and autonomous learning behavioral variables in case of different educational attainment (Table 7) show that positive, significant correlations appeared mostly in the case of older learners with higher educational background. We identified statistical differences between emotional control and the use of memory strategies. Differences appeared between people with intermediate or college degree ($p = .00$) as well as between the two levels of higher education ($p = .03$). It may imply that in the case of the latter groups,

development in recognizing and managing learning-related emotions causes improvement in certain study strategies which promote learner autonomy.

5. Discussion and pedagogical implications

The overarching aim of our study was to investigate the motivational, self-regulatory and autonomous learning behaviour-related aspects of EFL learning in groups of older adult learners. In doing so, we explored whether these relations are diverse in terms of age groups and educational attainment.

First, we found some similarities between motivational and self-regulatory behaviour. Our research revealed that motivational intensity plays an equally important role in self-regulation for those who are below or above 65 years. In other words, in the case of the so-called older demographic group, invested effort in studying has a potential effect on the ability of taking control of their own learning. This finding is thus in line with previous studies, according to which intrinsic interest in learning may have a potential effect on the development of strategic learning that is based on self-regulation (Zimmermann, 2000 p. 17; Türkben, 2019). Additionally, our results also revealed that the relation between self-regulation and autonomous learning was positive and mostly significant when we looked at all the various categories within the larger demographic group. We thus found that self-regulation skills have an overall positive relation to learner autonomy, regardless of older learners' age or educational level. Therefore, we reinforce the importance of supporting adults in taking control of their own learning and in formulating personal goals, as it may result in a more robust learner autonomy (cf. Stefanou et al., 2013).

However, unique in our study is that we found substantial differences among certain motivational and autonomy-related aspects of learning, as described below, when senior learners' age or education were considered. Data also revealed that particular self-regulation skills and autonomous learning behaviours vary according to participants' age and educational background. This finding suggests that these personal factors are crucial, therefore further refinement of teaching strategies is needed. This pedagogical adjustment is necessary as the demographic group of 'older learners' may not constitute a larger homogeneous audience but shows distinct differences in terms of their age, level of education and language skills.

5.1. Pedagogical implications for teaching adults aged 65+

Our findings suggest that those learners who are older than 65 need their instructors to pay more careful attention to supporting motivational intensity

when developing learner autonomy. Therefore, a supportive classroom atmosphere and more instructional opportunities to increase self-reinforcement should be created in order to contribute to becoming skilful language learners (Lowmann, 1990). Syllabus-related motivational strategies of adult learners include helping participants to integrate their existing knowledge into the material to be acquired effectively by raising their awareness of the potential intertwining content (Thoms, 2001). Additionally, pace and subject matter of the curriculum should also be adjusted to the individual needs of older adults (Berndt, 2004). Further, concentration-related self-regulation skills also need to be strongly promoted when developing autonomy in learning. Thus, applying attention training concerning task switching or coordination during teaching may also contribute to the development of attentive performance of this particular audience (MacKay-Brandt, 2011).

5.2. Pedagogical implications of educational attainment

For EFL learners, instrumentality and integrativeness may act as generally important components in their motivational behaviour (Csizér & Kormos, 2006; Dörnyei, 1994; Gardner, 2010). However, based on the present study, older adults' level of educational background needs to be considered when promoting their integrative orientation. Older learners may have diverse educational backgrounds (Fichman et al., 2009; Eloniemi-Sulkava, 2013), which also impacts their learning behaviour. As for EFL learning specifically, we found that for older adults with secondary education, integrativeness plays a more significant role when promoting their productive skills as compared to those with higher educational attainment. Hence, in their case, topics related to people and culture associated with the target language could contribute to a desire to communicate in the foreign language (cf. Ghanbarpour, 2014; Klimczak-Pawlak & Kossakowska-Pisarek, 2018) rather than emphasizing topics that can enhance older learners' purposefulness in language learning (cf. Eguz, 2019; Schiller, Dorner & Szabó, 2020)

Finally, control over emotion during learning is another aspect of learning that plays a significant role for older adults (Berndt, 2004). We found that the relationship between strategic learning and emotional control were positive and mostly significant in the case of those who had a higher educational degree as opposed to those with lower education. Hence, promoting emotional control of senior EFL learners who obtained tertiary education is particularly important. EFL instructors should support their students in obtaining a more realistic view of their own learning potential. Promoting open discussions in classrooms that focus on questioning one's learner beliefs in order to elicit one's own self-exploration is a useful approach (cf. Gómez, 2016).

6. Conclusion

This article explored older adults' motivational, self-regulatory- and autonomous learning behavior. We examined the differences from three perspectives: participants' age, level of education and EFL knowledge. We found that the demographic group (50-80+) was heterogeneous when studied from these perspectives. This implies that pedagogical strategies that support adult language learning should be adjusted according to these fine differences. We formulated recommendations that are grounded in our empirical findings but acknowledge the limitations of this study which are primarily associated with the sample. It included only Hungarian older language learners of English and the sample was relatively small. Nevertheless, our findings should be relevant in a broader (international) context, particularly, since through our detailed description of methodology the study lends itself to replication.

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Appendix

Research instrument

Questionnaire items on EFL learner motivation, self-regulation, and learner autonomy

Motivation:

Motivational intensity (Gardner, 2004)

1. I try to understand everything I see or hear in English.
2. I try to be up to date regarding the English language by studying regularly.
3. I am working hard to learn English.
4. When I do not understand the explanation of the English teacher, I try not to give up and I concentrate even more on what s/he is saying.

Integrative orientation (Gardner, 2004)

1. Learning English is important so that we can communicate more easily with native English speakers.
2. Learning English is important because it helps understand the English way of life and its values.
3. Learning English is important because it enables me to meet and speak to various people.
4. Learning English is important because it enables me to understand English speakers more easily.

Instrumental orientation (based on previous research. Schiller & Dorner, in press)

1. I am learning English because I love to travel abroad.
2. I am learning English because I would like to live abroad later on.
3. I am learning English so that I can communicate with ease in English during my travels abroad.
4. I am learning English so that using English when travelling abroad would not pose a problem.

Self-regulating Strategies (Csizér & Kormos, 2012; Kormos & Csizér, 2014; Tseng, Dörnyei, & Schmidt, 2006):

Commitment control:

1. I have designed methods in order to reach my aims in language learning.
2. I think I can reach my aim sooner than expected during language learning.
3. When learning a language, I hold on until I reach my aim I set for myself.
4. I believe that I will be able to overcome all the difficulties I encounter until I reach my aim.

Satiation control:

1. I have methods to make learning English interesting for myself.
2. When learning English becomes boring, I feel that I can easily overcome boredom.
3. I have my own methods not to be bored by learning English.
Item especially developed for the study:
4. I feel that it would be hard to be bored by learning English.

Emotional control:

1. If, for some reason, learning English causes anxiety, I feel that I can effectively cope with it.
2. If I am nervous about learning English for some reason, I can fight off this feeling.
3. I know how to fight it off when, during learning English, I am nervous because of something.
4. I do not give up learning even if something causes anxiety in learning English.

Metacognitive control:

1. I try not to get carried away when learning English.
2. I have my own methods to be able to pay attention during learning English.
Items adapted based on the article by Dörnyei, Tseng, & Schmidt (2006):
3. I consider my methods effective in keeping my attention in language learning.
Item especially developed for the study:
4. I feel I have effective methods regarding how to maintain my attention during language learning.

Student Autonomy (Csizér & Kormos, 2012; Kormos & Csizér, 2014):

Independent use of learning resources:

1. I use the internet often in order to develop my language skills.
2. I chat in English on the internet in order to practise English.
3. I read English-language blogs in order to practise English in the meantime.
4. I use English-language educational programmes on the computer.
5. I use international English-language social media (e.g., Facebook) in order to develop my English skills.

Learning strategies (specific language skills, memory strategy, metacognitive strategy)

Listening strategies:

1. I try to listen to as much spoken English as possible.
2. I seize every opportunity to listen to as much spoken English as possible.
Items especially developed for the study:
3. I try to find opportunities to participate in programmes outside of a language course where English is spoken around me.
4. I try to find opportunities to listen to English-language materials as much as possible.

Writing strategies:

1. I try to find opportunities to write in English as much as possible.
Items especially developed for the study:
2. Outside of language classes, I try to make notes in English – of whatever I can.
3. I try to find opportunities to write as much as possible in the target language.
4. I aspire to practise writing in English as well.

Reading strategies:

1. I seize every opportunity to read in English.
Items especially developed for the study:
2. I aspire to read as much as possible in the target language.
3. I try to spend as much time as possible to read in the language to be learned.
4. I try to find as many opportunities as possible to read English texts.

Speaking strategies:

1. I try to find opportunities to speak as much English as possible.
Items especially developed for the study:
2. I aspire to apply newly learned material in various spoken situations.
3. I seize every opportunity to speak in the foreign language to be learned.
4. I seize every opportunity to communicate in English as much as possible, outside of language classes.

Memory strategies:

1. Remembering the material to be learned during learning English does not pose a difficulty to me.
2. I have my tricks with which I can make learning English easier.
Items especially developed for the study:
3. I have the necessary methods to master the material to be learned during language learning.
4. I think that my methods are effective to remember the material to be learned during English language learning.

Metacognitive strategies:

1. I make time for practising things that are more difficult for me in foreign language learning.
2. I always plan when to do the English homework.
3. If there is an exercise to be solved, I always consider first what the best way might be to solve it.
4. I always plan how much English I am going to practise until the next lesson.