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Learner autonomy, motivation, and self-regulated learning. How do these factors interrelate when senior adults learn English as a foreign language?

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Abstract

Learner autonomy has become a key notion for adult education as it calls attention to the ability of directing one's own independent learning. Although studies extensively discuss adult learners' autonomous learning behavior, research on senior learners' autonomy in the context of foreign language learning (FL) is scarce. Therefore, this paper explores motivational and self-regulatory factors that influence old-aged learners' independent FL learning. Survey data were collected and analyzed. Findings of multiple regression analyses showed that influential factors of older learners' autonomous learning behavior are related to goal commitment, positive attitude towards the culture and people of FL, and the ability to control over boredom while studying. Recommendations on supporting senior adults' learner autonomy development are outlined.

Keywords: learner autonomy; motivation; self-regulation; senior learners

1. Introduction

The number of senior citizens has massively increased across the world (DESA, 2017). Hence, in today's society, active aging has become an important agenda (Naegele & Bauknecht, 2013). In this context, learning is crucial for enhancing the quality of later life (Escuder & Jaume, 2013; Narushima et al., 2016). In fact, in countries with aging population, an extensively growing number of older adults would like to participate in educational programs (Pearse, 1991). Therefore, instruction of senior adults has become even more relevant in education (Schmidt-Hertha et al., 2014).

Research on gerontology has already uncovered instructional methods for teaching senior adults (Berndt, 2003; Delaud et al., 2012). Results have indicated that biological, psychological (Grein, 2013), as well as social factors need to be taken into consideration when teaching older adult learners (Villar et al., 2010). For instance, older adults' FL learning behavior was found to be significantly different from that of younger generations (Berndt, 2003). Various age-specific background variables such as changed language learning motivation and learning aims (Klimczak-Pawlak & Kossakowska-Pisarek, 2018), or the extent to which their out-of-class learning is maintained (Berndt, 2004) must be considered in older adults' FL learning.

This study too is concerned with age-specific variables and aims to expand the perspective on senior adult learners by focusing on their learner autonomy in FL learning. In particular, we conducted a quantitative study on motivational and self-regulatory aspects of older adults' out-of-class learning and explored how these constructs affect their learner autonomy.

2. Literature review

Three conceptual areas underpin this study, which have also informed the research design and the research tool development. These are as follows: learner autonomy, learning motivation, and self-regulated learning in the first instance.

2.1. Learner autonomy

Holec (1981) first defined autonomy in learning as "the ability to take charge of one's own learning" (Holec, 1981, cited in Benson, 2006, p. 23). Although there are numerous definitions concerning learner autonomy, common features include the ability of conscious planning, maintaining, and evaluating one's own learning process (Hardeland, 2013; Little, 1999; Mynard & Carson, 2012). The concept of learner autonomy emphasizes the importance of experienced independence (Krumm, 2005); however, support from peer students and that of the instructor are needed for further developing autonomous learning-related skills

(Cubucku, 2016; Thavenius, 1999; Vieria, 1999). Benson's (2001) model of learner autonomy thus encompasses classroom and curriculum decisions as well as aspects of independent studying, such as the effective use of autonomous learning skills and study resources.

Moreover, learner autonomy was found to play an important role in the development of language proficiency, namely, effective use of learning strategies for memorization or (meta-)cognition have a positive impact on the achievement in FL classroom (Griffiths, 2003; Jianfeng et al., 2018; Murray, 2010). Concerning strategic language learning of older adults, Schneider and Uhl (1990) pointed out that senior learners obtain fewer effective methods of learning as compared to younger generations. However, it was also found that targeted strategy training has an overall positive effect on senior learners' learning performance (Ball et al., 2002; Blackburn et al., 1988; Kliegl et al., 1989).

2.2. Self-regulated learning

The concept of autonomous language learning and self-regulation are assumed to overlap. The first term, however, has its origins in the reform pedagogical conceptualization of educational change of the 20th century and highlights the notion of individual differences and needs among learners (Krumm, 2005). Further, autonomy refers to a broader concept of learning including not only the ability to take responsibility over the organization of learning procedure but also the management of study-content and the social context in which knowledge acquisition occurs (Kormos & Csizér, 2014, p. 280). As opposed to that, self-regulated learning is related to educational psychology concerning the behavioral control over certain cognitive and affective aspects of learning (Murray, 2014). Nevertheless, self-regulatory strategies were found to play a significant role in learners' independent learning process (Stefanou et al., 2013), since self-regulation concerns learners' capability of behavioral control regarding the motivational and cognitive elements of their own learning process (Zimmerman, 1998). Dörnyei (2001) presented a taxonomic system on self-regulation in FL learning, which was empirically validated (Tseng et al., 2006). His conceptualization of self-regulatory skills entail control over one's achievement goals, attentive performance, study environment, and emotions during learning (Dörnyei, 2001).

As for attentive performance, older adults' capability of maintaining focus was found to be significantly different than that of younger generations. It was found that this age-group may have difficulties in closing out irrelevant information during sustained attention (O'Halloran et al., 2013). This may influence their cognitive performance and achievement (Bäckman & Molander, 1986) and play an affective role during their learning process (Grein, 2013). Similarly, older

adults' learning aims are also considerably different than achievement goals of younger generations (Villar et al., 2010). Older adults' study goals are mainly related to their cognitive interest in learning (Lin & Sandmann, 2012) or to certain communication situations (Eguz, 2019), which may influence their learning progress (Klimczak-Pawlak & Kossakowska-Pisarek, 2018).

2.3. (FL) learning motivation

Most models of motivational language learning entail the notion of invested effort and persistence (Dörnyei & Ushioda, 2011); therefore, research has been conducted to examine the potential motivational factors of language learning (Dörnyei, 1994). Amongst others, Gardner (1985) investigated possible reasons of motivational behavior and formulated the categorization of motivation by indicating two main types, namely, instrumental and integrative orientation. The former one refers to practical reasoning of learning a foreign language, while the latter concerns active interest in the culture and the people of the target language (Gardner, 1983; Gardner, 2001). Gardner's (1985, 2010) socio-educational model became a widespread conceptualization of FL motivation and numerous studies have dealt with the instrumentality of motivated learning behavior of young learners as well as adult students (Dordi-nezhad, 2015; Kormos & Csizér, 2008; Molaee et al., 2014; Taie & Afshari, 2015). Later, a revised model was created in order to serve the international nature of English as a lingua franca including readiness of communicating with other people of different cultures rather than with a specific L2 group (Yashima, 2009; Yashima et al., 2004). Older adults' language learning motivation is characterized by a diversity of existing motivational factors, that is, numerous practical and cultural reasons explain why they learn a foreign language, which also plays an important role in the learning process (Eguz, 2019; Klimczak-Pawlak & Kossakowska-Pisarek, 2018; Schiller & Dorner, 2021).

2.4. The relationship among learning motivation, self-regulated learning, and learner autonomy

Most studies discuss the link between learner motivation and perceived ability in autonomous learning and highlight the importance of intrinsic interest and invested effort (e.g., Jianfeng et al., 2018; Lam & Gurland, 2008; Prigmore et al., 2016). For instance, Jianfeng and his associates (2018) investigated the correlation between learner autonomy and motivation and their impact on adult EFL learners' language proficiency. It was found that there was a positive and significant relationship between the two constructs, both of which considerably affected participants' language abilities. Results also showed that certain motivational variables,

such as intrinsic interest, had a major impact on participants' language learning behavior. Lam and Gurland (2008), who researched the possible predictors of motivational behavior in the context of work-based learning, found a strong link between participants' perceived autonomy and their work-related invested effort. Based on exploratory qualitative data, Prigmore and his colleagues (2016) also argued that learner motivation plays a decisive role in students' abilities to take responsibility for their own learning.

Further, Cubucku (2009) found that adult learners with high self-regulation habits show a greater degree of learner autonomy and use more cognitive and metacognitive strategies in learning. Similarly, Dawson and his colleagues (2015) investigated the possible ways of enhancing autonomous learning and found that promoting effective methods of formulating learning goals can positively affect adult learners' development in learner autonomy. Notwithstanding these important results about learner autonomy in general (Benson, 2001, 2006; Hardeland, 2013; Little, 1999; Mynard & Carson, 2012), research addressing factors which influence senior adults' autonomy in learning is scarce. Therefore, the aim of the present paper is to examine how motivational and self-regulatory strategies affect autonomous learning behavior of senior adult learners. To investigate this, we formulated the following research questions:

1. What are the motivational factors and self-regulatory strategies that have a direct effect on autonomous learning behavior of senior FL learners?
2. What motivational factors and self-regulatory strategies have an indirect effect on autonomous learning behavior of senior FL learners?

3. The study

3.1. Participants

The research was conducted in an instructional setting that is specialized in teaching FL to senior adult language learners in Hungary. Altogether 106 senior adults (with the average age of 65.81) participated in the quantitative study in October 2019. Their level of English as a Foreign Language (EFL) was elementary or pre-intermediate.

3.2. Research instrument

The questionnaire measured senior adult learners' motivation, self-regulatory behavior, and autonomous learning skills of EFL. It is based on the comprehensive model on learner autonomy validated in a large-scale empirical study (Csizér & Kormos, 2012;

Kormos & Csizér, 2014). It consists of three main parts: language learning motivation, self-regulatory strategies, and autonomous learning behavior (cf. Schiller & Dorner, 2020). As for the motivational scales, this study relies on Gardner's (1985) motivational component regarding the intended desire and effort to invest in learning the language (Gardner, 2004). Survey items on language learning goals encompass instrumentality (Gardner, 1985) and integrativity by emphasizing the significance of English as a global language (cf. Csizér & Kormos, 2012). The scale *instrumental orientation* was altered to include the notion of experienced independence while travelling (Schiller& Dorner, 2021). In addition, Dörnyei's (2005) self-regulatory strategies of independent learning such as maintaining emotional control (e.g., managing emotions that can hinder effectual learning) or commitment control concerning specific goal setting, as well as strategies of controlling boredom (satiation control) and metacognitive control (over confining focused attention) were also included (Tseng et al., 2006). Self-regulatory scales were extended by items from Tseng et al.'s (2006) original survey. Finally, items on the cognitive and metacognitive aspects of learning as well as the independent use of study resources were also included (cf. Benson, 2001; Kormos & Csizér, 2014). The scales of cognitive strategies were extended with the four main skills (listening, reading, speaking, writing) of learning a FL (Schiller & Dorner, 2020). Items that were originally written in English were translated into Hungarian by using the technique of forward and backward translation (cf. Tsang et al., 2017). The scales of the questionnaire are presented below:

Scales regarding learning motivation:

- *Motivational intensity* (4 items): refers to the intended effort of learning a FL (Gardner, 2006);
- *Integrative orientation* (international posture) (4 items): concerns students' personal interest in different cultures (Kormos & Csizér, 2014);
- *Instrumental orientation* (4 items): deals with the pragmatic gains of learning SL. Scales constructed for assessing instrumental orientation of the elderly (Schiller & Dorner, 2021).

Scales regarding self-regulated learning:

- *Commitment control* (4 items): concerns the goal commitment of FL learners (Csizér & Kormos, 2012);
- *Satiation control* (4 items): deals with control over boredom (Csizér & Kormos, 2012);
- *Emotional control* (4 items): concerns self-regulation of emotional self-management (Csizér & Kormos, 2012);

- *Metacognitive control* (4 items): deals with self-regulatory control over attentive performance while learning (Csizér & Kormos, 2012; Tseng et al., 2006);

Scales regarding autonomous learning behavior:

- *Independent use of cognitive and metacognitive strategies* (24 items): learner's independent use of cognitive and metacognitive strategies including the ones concerning the four main skills of language learning (listening, reading, writing, speaking) (Csizér & Kormos, 2012). The scale was extended by items specially developed for the study;
- *Independent use of learning resources* (5 items): independent use of digital learning resources (Csizér & Kormos, 2012).

3.3. Procedure

Participants filled out the questionnaire on a voluntary basis. It consisted of 63 items including 57 5-point Likert scale items (5 = strongly agree, 1 = strongly disagree) as well as open-ended questions regarding their age, gender, educational background, and the level of their EFL knowledge. The study received ethical clearance (No. of Ethical Permission: 2019/299).

3.4. Data analysis

First, we conducted descriptive statistics in order to estimate the reliability of the applied instrument. Cronbach's Alpha values were computed to measure the reliability of the investigated constructs. Subsequently, multiple regression analysis was conducted by applying a step-by-step approach (i.e., stepwise regression). Our aim was to find out more about the variables affecting participating older adults' autonomous learning behavior. We used SPSS to compute regressions (Version 26).

4. Results

4.1. Descriptive statistics and reliability measurements

First, we will present the descriptive statistics and reliability measures of the instrument. In order to measure the internal consistency of each scale, Cronbach's alpha was used. The minimum acceptable value of the internal consistency was set for $0.6 \leq \alpha$ (DeVellis, 2012). As for the internal consistency coefficients and the descriptive statistics, all the scales were acceptable in terms of their reliability (Murphy & Davidshofer, 1988) with integrative orientation obtaining the lowest Cronbach's alpha (.671) and cognitive strategies of reading the

highest coefficient alpha (.894) values (cf. Schiller & Dorner, 2020). With regards to the descriptive statistics, motivational intensity (*M* = 3.86), integrative orientation (*M* = 3.56), and metacognitive control (*M* = 3.43) showed the highest mean values. It was also found that there was a significant difference between integrative (*M* = 3.56, *SE* = 0.74) and instrumental motivation (*M* = 3.14, *SE* = 0.79), the difference of which is statistically significant (*t(*105) = 5, 45, *p* = .00). Further, participants appeared to have scored higher on motivational intensity (*M* = 3.86, *SE* = 0.57) than on satiation control (*M* = 3.36, *SE* = 0.80). This difference is also statistically significant (*t*(105) = -6, 72 *p* = .00). These results may imply a great diversity among senior adult learners' motivational behavior. Additionally, cognitive strategies concerning oral production (.93) and metacognitive strategies (.87) of autonomous learning behavior showed the largest variation. The result can indicate a degree of heterogeneity between senior adult learners' ability to provide a structure for strategic learning.

4.2. Predictors of senior adult learners' autonomous learning behavior

The aim of this study was to detect which motivational and self-regulatory scales have a direct and indirect impact on senior adults' learner autonomy; therefore, we conducted multiple regression analyses with a stepwise approach. Similarly to Kormos and Csizér (2014), we compounded the scales from Benson's (2001) model of autonomy by calculating the mean of the scores of scales. We named it autonomous learning behavior, which was also set as the criterion variable of our analyses. In the initial model, the independent variables were all the presented self-regulatory and motivational scales of the research instrument. The stepwise approach resulted in a regression model with three independent variables. The results show (Table 1) that commitment control and satiation control were the predictor variables that had a direct effect on autonomous learning behavior as they had statistically significant positive relationship with the dependent variable. Out of these, satiation control had the strongest relationship with autonomous learning behavior followed by commitment control. Based on the *β* values, all the significant relations were indicated as positive, which implies that the investigated criterion and independent variables increased in relation to one another. Although this positive relationship among the criterion and predictive variables does not mean an inevitable causation, it can be inferred that a possible increasement in these values may have a positive effect on autonomous learning behavior. This means that the better older learners can manage boredom during their self-study practice, the greater responsibility they will be able to accept for their own learning. Further, firmer commitment over maintaining study goals can also be resulted in learner autonomy-development in the case of old-aged EFL learners.

Table 1 Results of the regression analysis of the motivational and self-regulatory scales with autonomous learning behavior as the criterion variable

Variable	*B*	*SE*	*β*	*Sig*
Satiation control	.33	.07	.43	.00*
Commitment control	.26	.08	.31	.002*
Integrative orientation	.12	.05	.15	.029
R Square	.60			

Subsequently, we conducted further regression analyses in order to identify those variables affecting autonomous learning behavior in an indirect way. Therefore, we set those predictive variables presented in Table 1 as criterion ones to see what other scales have an impact on them. All the independent variables were the remaining self-regulatory and motivational ones.

In the case of commitment control as a dependent variable (Table 2), it was found that metacognitive control, satiation control, and integrative orientation were the significant predictive variables having the strength of the relationship in descending order. This means that older adults' goal-directed learning behavior was greatly affected by their attentive performance, in particular. Further, old-aged learners' capability to control over boredom and their cultural purposes of language learning also had a significant impact on their dedication to FL learning.

Table 2 Results of the regression analysis of the motivational and self-regulatory scales having indirect impact on autonomous learning behavior

Commitment control as the criterion variable				
Variable	*B*	*SE*	*β*	*Sig*
Metacognitive control	.49	.09	.46	.00*
Satiation control	.31	.07	.35	.00*
Integrative orientation	.21	.05	.22	.00*
R Square	.68			
Satiation control as the criterion variable				
Variable	*B*	*SE*	*β*	*Sig*
Metacognitive control	.45	.11	.38	.00*
Commitment control	.36	.10	.32	.001
Motivational intensity	.29	.10	.20	0.05
R Square	.38			
Integrative orientation as the criterion variable				
Variable	*B*	*SE*	*β*	*Sig*
Instrumental orientation	.40	.07	.43	.00*
Commitment control	.26	.08	.25	.003
R Square	.30			

When establishing satiation control as a criterion variable, it is perceived that the strongest predictor variable was metacognitive control, followed by commitment

control and motivational intensity. This implies that the more careful attention old-aged learners are able to pay to maintain their own learning, the higher older adults' self-regulatory control over managing their lack of interest is. Further, senior learners' ability to control over boredom is also significantly influenced by their general motivational behavior.

Integrative orientation was predicted by commitment control and instrumental orientation, having the latter as a stronger predictor variable. This indicates that older adults' intensive cultural interest in FL learning is significantly affected by goal-directedness and instrumentality specifically, by the latter referring to the en route-experienced independence in their case.

We also used path analysis (Figure 1) to gain a better understanding of the complex relations of the predictive variables. It was found that satiation control, commitment control and integrative orientation have both direct and indirect effect on autonomous learning behavior. Commitment control has the most complex relation to learner autonomy by having an indirect impact on it too through the two other most significant predictive variables.

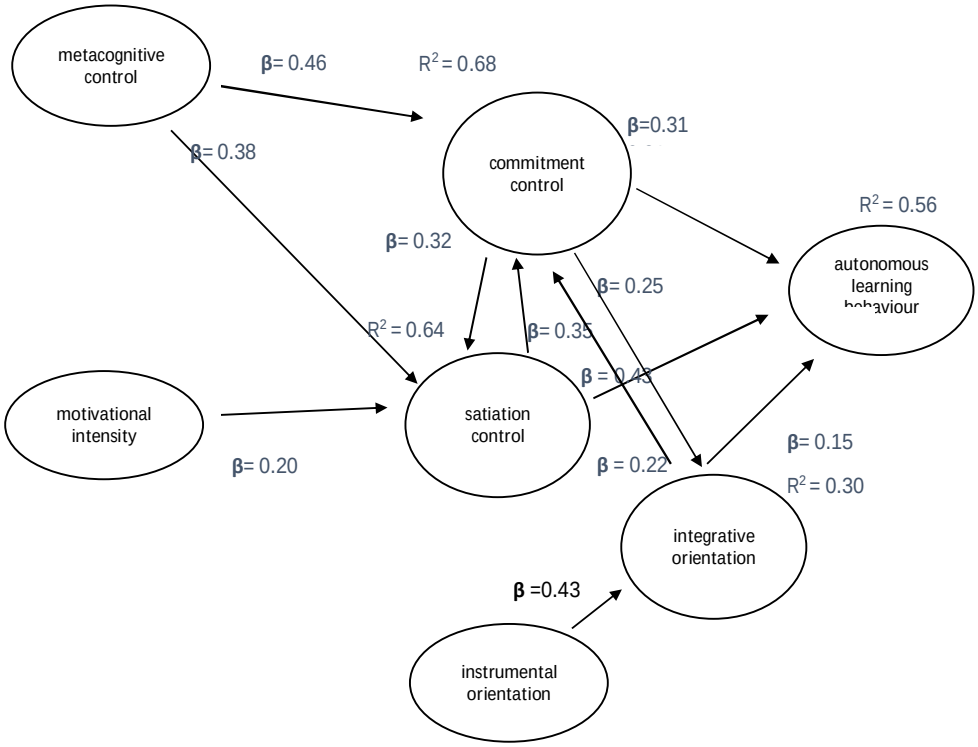

Figure 1 Path model of the hypothesized relationships between autonomous learning behavior and the predictive motivational and self-regulatory scales

5. Discussion

In this study, we investigated the main characteristics of older adults' learner autonomy by exploring which self-regulatory and motivational factors and self-regulatory strategies have a direct and indirect effect on senior FL learners' autonomous learning behavior. We found that older adults' learner autonomy is significantly directly affected by commitment and satiation control. This means that goal-directed learning behavior and the ability to control over boredom play a vital role in older adult learners' autonomy-development. This is in line with previous research according to which adult learners' self-regulation is key when enhancing autonomy in learning (Cubucku, 2009; Stefanou et al., 2013).

Integrative orientation was found to have an indirect effect on old-aged learners' autonomy. Notably, however, according to our final model, positive attitude towards FL communities had higher impact on the autonomous learning process than instrumentality on the whole. This is different than found earlier in the case of adult learners (cf. Wong, 2011).

Furthermore, autonomous learning behavior was inter alia indirectly affected by motivational intensity. In other words, the desire to learn the language has a relatively significant effect on learner autonomy. Our findings share a number of similarities with those of Liu (2015), according to whom, invested effort and persistence in learning could most likely predict learner autonomy in the case of adult learners. However, we detected that senior adult learners' motivational intensity has only an indirect impact on autonomous learning behavior, predicting satiation control in the first place.

Moreover, we also found that those variables having a direct impact on autonomous learning behavior also affect it in an indirect way. Interestingly, commitment control showed the most definite link with learner autonomy. This is consistent with previous studies that also underline the importance of effective goal setting regarding learner autonomy-development (Coterall, 2000; Yang, 1998; Ushioda, 2014).

These findings have implications for developing senior adult learners' FL learning autonomy. Our data indicate that enhancing different facets of learner motivation is crucial when promoting senior adults' learner autonomy. The instructor should pay special attention to the different individual needs and preferences of senior adult learners in the first instance (Chang & Lin, 2011). Further, promoting motivation through positive reinforcement (Beisgen & Kraitchman, 2003) should also be used as an overarching instructional strategy throughout the entire learning process. It is further recommended to raise senior adult learners' awareness about the possible benefits of constant personal development, such as experienced increased independence (Chaffin & Harlow, 2005) and perceived enhancement of cognitive abilities (Weinstein 2004).

As motivation is closely related to goal-directedness (Gómez-Miñambres, 2012; Lunenburg, 2011; Sullivan & Strode, 2010) it is essential to encourage older adult learners to realize their concrete learning aims which they wish to achieve in the first place (Eguz, 2019). In so doing, as Magid (2013) points out, learners' goal specification can be best promoted by stimulating the vision of the qualities of their ideal L2 selves. The ideal L2 self refers to a set of attributes that one intends to achieve when acquiring the given foreign language (Dörnyei, 2009). Subsequently, the instructor should help them become aware of those competences which are needed to attain to the specific learning objectives (Emmons, 1999, cited in Chaffin & Harlow, 2005 p. 316).

A possible way to promote and support learner autonomy is through advising in language learning in a one-to-one setting. This approach is a form of humanistic counselling (Mynard & Carson, 2012). It develops learner autonomy by focusing on promoting certain (meta)cognitive and affective aspects of learning, such as effective planning, monitoring and reflecting upon the entire learning process and the constant sustaining of learner motivation (Karlsson et al., 2007; Mehlhorn, 2006; Mozzon-McPherson, 2001; Siebert, 2000).

6. Conclusion

The results of the study indicate that senior adults' learner autonomy is mainly influenced by how effectively they set their own learning goals and how invested they are in learning a foreign language because of their interest in the culture and people of that target language. Apart from that, the ability of controlling boredom and maintaining attentive performance also play a crucial role in their learner autonomy development. These findings suggest that these aspects need to be taken into consideration when senior adults' independent learning processes are promoted.

The current study was limited by the invented sampling method in particular. That is, participating learners of our research belonged to one institution solely, suggesting that participants coming from more heterogenous locations would indicate more generalizable results to the Hungarian elderly population. Another limitation refers to our research instrument that focused on motivational factors, self-regulatory strategies and autonomy in learning being self-reported by the participants which hinders the objectivity of the outcome. Finally, future research that investigates the separate scales of learner autonomy will need to be performed in order to find further information about its influencing factors.

Despite the fact that there are some limitations of the study, we believe that this study serves as the first step towards understanding the affecting factors of senior adult learners' learner autonomy. In so doing, it also enables us to refine our understanding of the large 'category' of adult learners by drawing our attention to the specifics and needs of senior adult learners within the larger population.

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