University of Hormozgan

Iranian Journal of Educational Research

Print ISSN: 1735 - 563X Online ISSN: 2980 - 874X

Homepage: http://ijer.hormozgan.ac.ir

Educational and Behavioral Research Center

Examining Psychological Needs, Active Engagement and Individual Satisfaction of Students through Self-Determination Theory

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Article Info

Article type:

Research Article

Article history:

Received 13 May. 2024

Received in revised form 16 Jun. 2025

Accepted 31 Jul. 2024

Published online 01 Jun. 2026

Keywords:

Agentic Engagement,
Engagement,
Iranian EFL learners,
Psychological Needs,
Self-actualization

ABSTRACT

Objective: This study aimed to examine whether Iranian EFL learners' agentic engagement significantly predicts their psychological needs and self-actualization. It also investigated whether self-actualization significantly predicts psychological needs. Additionally, the study explored common engagement practices among Iranian language learners.

Methods: An explanatory correlational design was employed. A total of 300 EFL learners from three private language institutes in Mahallat, Iran, participated in the study. Data were collected using the Oxford Placement Test, the Basic Psychological Needs Scale, the Agentic Engagement Scale, and the Self-Actualization Questionnaire. Quantitative data were analyzed through descriptive and inferential statistics, including Pearson correlation and regression analyses. Partial Least Squares Structural Equation Modeling (PLS-SEM) was further applied to refine the structural model by removing non-significant paths and indicators with low factor loadings.

Results: The findings indicated that agentic engagement was a positive and statistically significant predictor of both psychological needs and self-actualization among Iranian EFL learners. Furthermore, self-actualization significantly predicted learners' psychological needs.

Conclusions: The results highlight the central role of agentic engagement in fostering psychological needs satisfaction and self-actualization among EFL learners. These findings suggest that promoting agentic engagement in language classrooms may enhance learners' psychological development and overall learning experience. Pedagogical implications for language educators are discussed.

Cite this article: Abbasvandi, M., Behroozizad, S., Kuhi, D. & Ranjbar Mohammadi, R. (2026). Examining psychological needs, active engagement and individual satisfaction of students through self-determination theory. *Iranian Journal of Educational Research*, 5 (2), 1-23.

. DOI: https://doi.org/10.22034/5.2.1

Publisher: University of Hormozgan.

DOI: https://doi.org/10.22034/5.2.1

Introduction

The importance of acquiring a second language (L2) has consistently driven educators and scholars to explore diverse methodologies in identifying the determinants of language learning. Contemporary conceptualizations of L2 learning now consider cognitive, affective, and social factors in language acquisition (Stander, 2022). Consequently, for a variety of reasons, mastering a second language might become a challenging experience that hinders the intended learning outcomes (Liu & Liu, 2015). Hence, it is imperative to investigate the components that contribute to students' learning and enhance their process of acquiring a second language. One of the components is engagement, as outlined by Kahn (1990), which is essential for establishing a link between the learning environment and students' performance, including aspects of psychological significance, safety, and accessibility (Kossyva, 2023).

In the area of engagement, agentic engagement plays a vital role in educational setting. As defined by Reeve and Tseng (2011), agentic engagement refers to students actively contributing to the learning process, demonstrating their commitment and participation. Student engagement serves as a crucial link between the learning environment and student performance, and includes elements like psychological significance, safety, and accessibility (Kahu, 2013). This concept emphasizes students' active participation and positive contributions to which learning, ultimately impacts their academic outcomes (Gray & DiLoreto, 2016). Several scholars (Ciric & Jovanovic, 2016; Delfino, 2019; Kahu, 2013; Kossyva et al., 2023; Mortezapour et al., 2023) recognized the importance of student engagement in achieving academic success and these researchers provided classroom-based illustrations of learner agentic engagement, including offering input; voicing a preference; providing a suggestion or involvement; asking a question; expressing what they are thinking and needing; demonstrating a goal or objective to be completed; conveying their level of interest; soliciting resources or learning opportunities; searching for ways to tie the lesson to your own experiences; requesting to have a say in how issues are solved; seeking explanation; producing options; and communicating likes and dislikes (Zambrano et al., 2023).

In academic discourse, the Basic Psychological Needs Theory (BPNT) asserts that human drive and mental wellness rely on meeting essential psychological needs such as independence, proficiency, and interpersonal connections (Chen, et al., 2015). Likewise, Maslow's hierarchy of

needs underscores the importance of self-actualization in shaping language acquisition and fluency, highlighting the critical role of meeting psychological needs for personal development and involvement (Maslow, 2000). It is worth noting that self-actualization, defined as the pursuit of personal growth, creativity, and fulfillment (Vikram & Hiremath, 2015), plays a pivotal role in shaping learners' identities and aspirations. When students are unable to self-actualize, they may experience a sense of stagnation or lack of direction in their educational journey. This can lead to diminished self-esteem, reduced confidence in their abilities, and a limited sense of purpose in their academic pursuits. Without self-actualization, learners may struggle to harness their full potential, resulting in underachievement and unfulfilled academic outcomes (Aljaser, 2019). Recent academic discussions have increasingly scrutinized the intricate facets of language learning, with a particular focus on active participation, psychological needs, and self-realization (Nafar et al., 2023; Noels, et al., 2019; Vansteenkiste, et al. 2020).

Basic Psychological Needs Theory (BPNT), a component of Self-Determination Theory (SDT), revolves around human beings' psychological needs for autonomy, competence, and relatedness, and their relationship with motivation (Ryan & Deci, 2000). Self-determination theory (SDT) used at this study, developed by Deci and Ryan (Deci, 1991), offers a broad perspective on human motivation, elucidating the interplay of human needs, drive, and well-being within a social milieu. The theory posits that all individuals harbor three fundamental psychological needs - autonomy (feeling self-regulated and self-supported), competence (feeling capable and efficient), and relatedness (feeling connected, valued, engaged) (Chiu, 2020). Consequently, this theory can elucidate the impacts of need-based encouragement on student motivation, involvement, and learning outcomes. Embedded in the comprehensive framework of SDT, BPNT underscores the significance of fulfilling psychological needs to foster involvement and self-actualization, thereby enhancing learners' holistic well-being and academic accomplishments (Saleem & Javaid, 2023).

The absence of learners' agentic engagement and self-actualization can hinder their personality development by limiting opportunities for growth, exploration, and self-discovery. This, in turn, may contribute to reduced academic achievement and a diminished sense of fulfillment in their educational endeavors. So, understanding the significance of agentic engagement and self-actualization is crucial in the context of language instruction. Similarly, self-actualization, which involves the pursuit of personal growth, creativity, and fulfillment, is fundamental for learners'

psychological well-being and academic success (Almashy, 2018). When students are self-actualized, they are more likely to exhibit intrinsic motivation, persistence, and a positive outlook towards language learning challenges. Due to the importance of the mentioned variables and despite the growing recognition of the importance of agency, psychological needs, and self-realization in language acquisition, scholarly research lacks comprehensive investigations into these elements among individuals learning English as a Foreign Language (EFL). This study seeks to fill this gap by exploring the intricate relationships between agency, psychological needs, and self-realization among Iranian EFL learners.

Material and Methods

In the present investigation, explanatory correlational design was employed. Correlational studies are often used when the researcher does not have control over the selection and manipulation of the independent variable. This is why researchers look at the type and/or degree of relationship between the two variables rather than at a cause-and-effect relationship" (Hatch & Farhadi, 1981, p.26). This study involved all intermediate EFL learners enrolled in a general language course at three language institutes in Mahallat, Markazi Province, Iran. The project was done with consideration of ethical issues and obtaining license from the ethics of their local committee and obtaining the written consent of participants. Also, it was done according to ethical standards of human experimentation in accordance to the Helsinki Declaration (www.cirp.org/library/ethics/helsinki).

The course aimed to improve participants' general English knowledge. The target population comprised 350 EFL students learning English as a foreign language across three language institutes in Mahallat. These students were aged 20 to 28 and included both males and females. To ensure homogeneity, 300 participants out of 350 were selected using the Oxford Placement Test (OPT). The aim was to select students with similar educational backgrounds and first languages (L1), primarily native Persian speakers. Table 1 summarizes the demographic information of the study participants.

Table 1. Specifications of the Student Participants

Place of Experiment	three language institutes in Mahallat, Iran
Number of Participants	300 participants
Age Range of Participants	20-28 years old
Gender of Participants	Both male and female
Native Language of Participants	Persian
Proficiency	Intermediate

Of the 350 EFL learners who participated in the initial homogeneity screening, 46 were excluded due to scoring outside the desired range on the homogeneity test, which was one standard deviation above and below the mean. This resulted in a group of 304 learners. To create balanced groups for further analysis, 4 additional learners were randomly excluded, leaving a final sample of 300 participants who completed the study questionnaires.

Materials and Instruments

Oxford Placement Test: The Oxford Placement Test (OPT) was used to establish a homogeneous sample and assess participants' initial general English proficiency. The reason for using OPT was ensuring the homogeneity of the learners based on their general English knowledge. The learners in the current study were the intermediate level learners, based on the institute's report, however to ensure more, OPT test was used to examine whether the participants were homogeneous in terms of their general language proficiency level. The OPT draws its content from Philips' "Longman Complete Course for the TOEFL Test" (2003). This 50-item test covers pronunciation, grammar, and vocabulary, with an average administration time of 60 minutes. To ensure participant homogeneity in terms of general language ability, scores falling within one standard deviation (SD) of the mean were selected. While the participating institutes classified them as intermediate learners, the OPT served to verify this classification and achieve a more homogenous group. The OPT demonstrated good internal consistency, with a KR-21 reliability coefficient of .81. Additionally, the distribution of scores met the assumption of normality. Skewness and kurtosis values, divided by their standard errors, fell below ±1.96, further supporting normality.

Basic Psychological Needs Scale: The second instrument employed in this study was the updated Basic Psychological Needs in Exercise Scale (BPN-PE) developed by Vlachopoulos and Michailidou (2006). This 12-item scale, a modification of the BPNES, assesses participants' psychological needs through three subscales (relatedness, competence, and autonomy) with four

items each. Evidence for the validity and reliability of the BPNES in exercise contexts has been established (Vlachopoulos & Neikou, 2007; Vlachopoulos & Karavani, 2009), with reported alpha coefficients ranging from .80 to .92. However, the scale was piloted by a sample of 15 learners of the current study and the reliability of .89 was reported. Furthermore, its validity was confirmed by three professors in TEFL. The BPN-PE was used to examine the relationship between Iranian EFL learners' psychological needs and their self-actualization.

Agentic Engagement Scale: Student agentic engagement was assessed using original items adapted from the Reeve and Tseng (2011) scale. This 10-item instrument employs a 5-point Likert scale ranging from "strongly agree" to "strongly disagree." Items 1-5 correspond to the original Agentic Engagement Scale (AES) items. The scale was used to investigate the participants' agentic engagement. Reeve and Tseng (2011) established the scale's reliability (r = .82) and validity however, during piloting. Its reliability reported to be .79.

The Short Index of Self-Actualization (SISA) Questionnaire: The Short Index of Self-Actualization (SISA) Questionnaire, developed by Jones and Crandall (1986), was employed to measure participants' self-actualization levels. This 15-item questionnaire uses a 4-point Likert scale ranging from "agree" to "disagree." Scores on items 1, 3, 4, 7, 10, 12, and 15 indicate self-actualization, while disagreement with items 2, 5, 6, 8, 9, 11, 13, and 14 also suggests self-actualization. The SISA's possible scores range from 15 (lowest) to 60 (highest). According to D'Souza et al. (2015), scores above 50 indicate high self-actualization. During piloting phase, the questionnaire was piloted by a sample of 15 learners of the current study and the reliability of .81 was reported. Furthermore, its validity was confirmed by three professors in TEFL.

Procedure

The present study was performed in a quantitative phase. Table 2 shows the timeline for the data collection procedure.

Table 2. Timeline for Data Collection Procedure

Piloting the Instruments	1.	Piloting Basic Psychological Needs Scale
	2.	Piloting Agentic Engagement Scale
	3.	Preparing The Short Index of Self-actualization Questionnaire
	4.	Piloting Semi Structured Interview
Quantitative Phase	1.	Selecting 300 Iranian EFL students based on OPT
	2.	Administering the Basic Psychological Needs Scale
	3.	Administering Agentic Engagement Scale
	4.	Administering the Short Index of Self-actualization Questionnaire
	5.	Running the Related Data Analysis

The study commenced with a pilot phase, a crucial step that allows for the identification of unforeseen issues with the research instruments. During piloting, the researcher developed a pilot study with two primary objectives: to identify and address potential flaws in the instruments before the main study, and to assess their internal consistency using Cronbach's Alpha. Additionally, language specialists reviewed the instrument items during piloting to ensure their validity. A sample of 15 participants, similar in characteristics to the main study's participants, was selected for the pilot study. Cronbach's Alpha was used to evaluate the reliability of the research instruments, with the results presented in Table 3.

Table 3. Reliability Indices of the Research Instruments

	Items	Index
Basic Psychological Needs Scale	22	0.89
Agentic Engagement Scale	10	0.79
The Short Index of Self-actualization Questionnaire	15	0.81

According to Table 3, the reliability of each research instrument was acceptable for the purpose of the study. In addition, to conduct the main study the following steps were taken:

In order to address the primary research issues in this study, the OPT was initially given to male and female Iranian EFL students. It was expected of all participants to complete this placement test. This test had a time limit of one hour. Then, 300 intermediate learners were chosen in accordance with the outcomes of the placement tests. Stated differently, individuals who scored one standard deviation higher than the mean and one standard deviation lower than the mean were chosen. To take part in the current study, 350 Iranian EFL students from the language institutes were chosen and the homogeneity test was presented. After the analysis, 300 homogenized learners were selected as the final participants based on one standard deviation above and below the mean

score in OPT. The questionnaires were distributed to 300 participants in several ways to ensure maximum response and convenience for the participants. Initially, the questionnaires were handed out in person during meetings and training sessions, giving participants enough time to complete them. In cases where physical presence was not possible, the questionnaires were sent electronically via email or online platforms. Links to the questionnaires were provided along with detailed instructions for completing and submitting them. Additionally, to ensure the receipt and completion of the questionnaires, follow-ups were conducted regularly through email, text messages, and phone calls. Participants were assured that their information would remain confidential and that the results would be analyzed anonymously.

Data Analysis

To analyze the questionnaires, Structural Equation Modeling (SEM) was employed to analyze the quantitative data and test the study's proposed model, addressing the research questions (Hair et al., 2014; Lowry & Gaskin, 2014). SEM is particularly suited for situations with small sample sizes, complex models with latent variables, and the examination of serial effects or group comparisons (Hair et al., 2014). Additionally, SEM can be beneficial in exploratory research to develop theoretical models (Baghaei & Ravand, 2016; Rönkkö & Evermann, 2013).

The first step in SEM analysis involves validating the measurement model (Baghaei & Tabatabaee Yazdi, 2016). This requires assessing discriminant validity, composite reliability, average variance extracted (AVE), and loadings of the latent variable components (Ringle et al., 2010). Pearson correlation and regression analyses were also conducted to explore associations and predictive relationships between the variables.

Following these analyses, the study's model was evaluated, focusing on significant explanatory variables and relationships at the .05 level after bootstrapping. Bootstrapping, a technique using random resampling, estimates the sampling distribution of the data (Varian, 2005). Since Partial Least Squares SEM (PLS-SEM) does not assume normality, traditional parametric significance tests are not used for coefficients like outer weights, loadings, and path coefficients. Instead, PLS-SEM utilizes a nonparametric bootstrap approach to assess the significance of path coefficients in the model (Davison & Hinkley, 1997). The final SEM analysis software output provides insights into the nature and strength of associations between the variables.

Results

To answer the research questions, the descriptive statistics of the variables were calculated. Table 4 illustrates the results.

Table 4. Descriptive Statistics of the Variables of the Study

	N	Min.	Max.	M	SD	Skewness		Kurtosis	
Agentic engagement	300	1.00	5.00	3.040	1.009	-.083	.337	-.478	.662
Psychological needs	300	1.00	5.00	2.920	1.065	.165	.337	-.462	.662
Self-actualization	300	1.00	5.00	2.720	1.161	-.073	.337	-.953	.662
Autonomy	300	1.00	5.00	2.900	1.233	-.075	.337	1.078	.662
Competence	300	1.00	5.00	2.860	1.106	-.089	.337	-.568	.662
Relatedness	300	1.00	5.00	2.920	1.209	.159	.337	-.848	.662
Valid N	300								

Then, a model for the variables and their relationship was proposed and tested. The proposed model is presented in Figure 1.

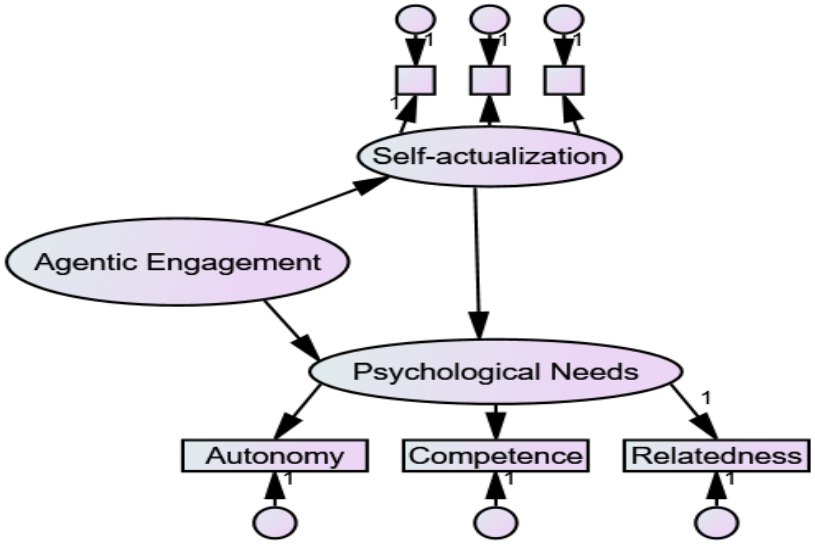

Figure 1. The Proposed Model of the Study

Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis was then conducted on the proposed model to refine it. This iterative process involved removing non-significant pathways and indicators with low factor loadings (below 0.40). A PLS-SEM model consists of two parts: the measurement model, which reflects the relationships between observed variables (indicators) and latent variables (constructs), and the structural model, which depicts the interactions between the latent variables themselves (Hair et al., 2017). As illustrated in Figure 1, the study employed ovals to represent latent variables (constructs) and rectangles for observed variables (indicators)

(Hair et al., 2017). Pathways with t-values exceeding 1.96 and significant at the 95% confidence level were retained in the structural model, while non-significant associations were removed (Hair et al., 2017). The final model, resulting from the removal of non-significant relationships, served as the basis for all subsequent analyses.

An analysis was further conducted to assess the correlations between the study's latent variables. The coefficient of determination (R^2) for each endogenous (dependent) variable in the structural model served as the primary indicator of model fit. R^2 reflects the proportion of variance in an endogenous variable explained by the exogenous (independent) variables in the model. According to Davari and Rezazadeh (2018), R^2 values of 0.19, 0.33, and 0.67 are generally considered benchmarks for weak, moderate, and strong explanatory power, respectively. The predictive capability of the structural model was evaluated using the Q^2 values of the endogenous variables. Henseler et al. (2009) proposed that Q^2 values of 0.02, 0.15, and 0.35 indicate weak, moderate, and strong predictive ability, respectively.

Table 5. Coefficient Results of R^2 and Q^2

Variable	R^2	Q^2
Psychological needs	0.254	0.133
Self-actualization	0.944	0.451
Autonomy	0.613	0.291
Competence	0.109	0.061
Relatedness	0.612	0.277

The R^2 values presented in Table 5 indicate an adequate fit for the study's structural model. Furthermore, all endogenous variable Q^2 values in Table 5 exceed 0.35, suggesting strong predictive ability and supporting the model's overall fit. Following the evaluation of the measurement and structural model fits, the overall performance of the model was assessed using the Goodness-of-Fit (GOF) index. This index considers both aspects of the model by incorporating the average R^2 of the endogenous latent variables and the average geometric mean of their shared variance. In simpler terms, the GOF index provides a summary measure of how well the model explains the data.

$$GOF = \sqrt{\overline{communalities} \times \overline{R^2}}$$

The GOF index considers three thresholds for weak, moderate, and strong fit, with values of 0.01-0.02, 0.25-0.35, and above 0.36, respectively. The model achieved a GOF value of 0.406, indicating a good fit to the data. Pearson correlation coefficients were then calculated to examine the relationships between all study variables and agentic engagement. All correlations were statistically significant ($p < 0.05$), as shown in Table 6.

Table 6. Pearson Correlation of the Variables of the Study

		AE	PN	SA	A	C	R
AE	Pearson Correlation	1	.325*	.271	.364**	.279*	.454**
	Sig. (2-tailed)		.021	.057	.009	.050	.001
	N	300	300	300	300	300	300
PN	Pearson Correlation	.325*	1	.295*	.429**	.388**	.565**
	Sig. (2-tailed)	.021		.038	.002	.005	.000
	N	300	300	300	300	300	300
SA	Pearson Correlation	.271	.295*	1	.507**	.191	.449**
	Sig. (2-tailed)	.057	.038		.000	.184	.001
	N	300	300	300	300	300	300
A	Pearson Correlation	.364**	.429**	.507**	1	.333*	.460**
	Sig. (2-tailed)	.009	.002	.000		.018	.001
	N	300	300	300	300	300	300
C	Pearson Correlation	.279*	.388**	.191	.333*	1	.525**
	Sig. (2-tailed)	.050	.005	.184	.018		.000
	N	300	300	300	300	300	300
R	Pearson Correlation	.454**	.565**	.449**	.460**	.525**	1
	Sig. (2-tailed)	.001	.000	.001	.001	.000	
	N	300	300	300	300	300	300

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

AE: Agentic Engagement, PN: Psychological Needs, SA: Self-actualization, A: Autonomy, C: Competence, R: Relatedness

The measurement model was assessed using three key criteria: indicator reliability, convergent validity, and discriminant validity (Hair et al., 2017). Indicator reliability reflects the internal consistency of a construct and was evaluated using factor loadings, Cronbach's Alpha (α), and Composite Reliability (CR). PLS-SEM software was employed to generate loadings, path coefficients, and construct values before assessing these parameters. While α is a traditional measure of internal consistency, PLS-SEM utilizes CR as an alternative (Hair et al., 2017). According to Nunally and Bernstein (1994), acceptable CR ranges from 0.60 to 0.70 in exploratory research and 0.70 to 0.90 in confirmatory research. Table 7 presents the α, CR, and AVE values for all variables. Convergent validity examines the extent to which indicators of a construct truly

measure that construct. Average Variance Extracted (AVE) was used to assess convergent validity in this study. Discriminant validity ensures that constructs in the model are distinct from each other. The Fornell-Larcker criterion was employed to evaluate discriminant validity (Hair et al., 2017).

Table 7. α Coefficient CR and AVE Values of Variables

	CR	AVE
AE	0.546	0.768
PN	0.768	0.835
SA	0.469	0.789
A	0.581	0.842
C	0.768	0.845
R	1.000	1.000

Table 7 displays the alpha (α), Composite Reliability (CR), and Average Variance Extracted (AVE) values for all variables. While alpha coefficients appear acceptable, CR is the preferred measure of reliability in PLS-SEM analysis, and all CR values in the table meet established criteria. Therefore, the model exhibits acceptable levels of reliability. Convergent validity, the second key criterion, assesses the extent to which indicators of a construct truly reflect that construct. Here, convergent validity was evaluated using Average Variance Extracted (AVE). AVE represents the amount of variance in an indicator explained by its underlying construct. A minimum AVE value of 0.5 is considered acceptable (Fornell & Larcker, 1981). As shown in Table 7, all constructs in the model demonstrate acceptable convergent validity. It is important to note that PLS-SEM assigns a weight of 1.0 to constructs measured by a single indicator, such as RC in Table 4.4. This reflects the inherent redundancy of a single-item measure.

Discriminant Validity: The degree to which a notion is actually different from other constructs according to empirical standards is known as discriminant validity (Hair et al., 2017). Making sure a reflective construct has the strongest link with its own indicators is the aim of discriminant validity (Hair et al., 2017). There are two approaches that have been suggested to assess discriminant validity: the Fornell-Larcker criterion (Fornell & Larcker, 1981) and analyzing the cross-loadings of the indicators (Hair et al., 2011). According to Hair et al. (2017), this criterion requires that the square root of each construct's AVE be higher than the estimated correlation values with other constructs. In other words, the values in the main diagonal of Fornell-Larcker

matrix should be higher than the below values. Since the values in the main diagonal of Fornell-Larcker matrices are greater than the below values the discriminant validity of all four models is satisfied.

T-Values and f^2 values were then used to evaluate the suggested model (Hair et al., 2017). The most crucial metric for assessing the importance of the connections between a model's constructs is its T-Value. According to Hair et al. (2017), the route coefficient will be significant at the 95% confidence level if the size of the resulting T-value is greater than 1.96. At a 95% confidence level, the T-values that were obtained demonstrated substantial correlations between the constructs of the suggested model. It should be noted that, at 99% confidence level, values larger than 2.58 indicate significant associations.

The magnitude of an effect one construct has on another is indicated by its effect size. It is evident that the structural model's constructs now have better effect sizes thanks to agentic participation. The variation of an endogenous construct that is clarified by its predictor constructs is measured by the coefficient of determination. According to Hair et al. (2017), the PLS-SEM model's prediction accuracy increases with increasing values. Chin (1998) suggested values of 0.19 (weak), 0.67 (significant), and 0.33 (moderate). Finally, to test the proposed model and null hypotheses, the final model was analyzed and interpreted.

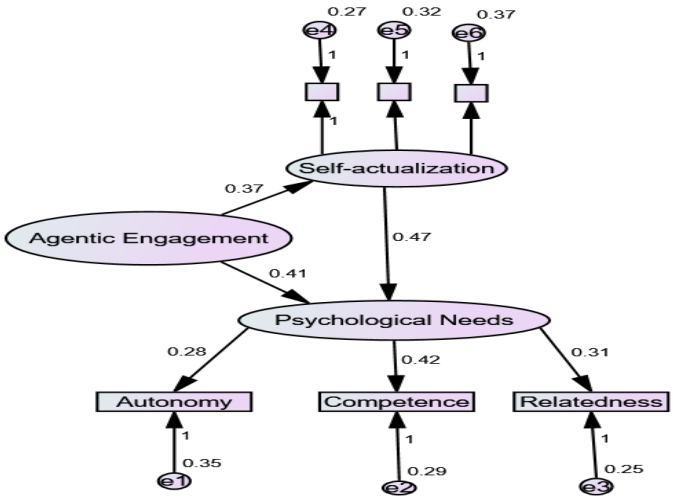

Figure 2. Structural Model of the Study

As Figure 2 shows, agentic engagement (β= .41, p<.05) is a positively significant predictor of psychological needs. In addition, according to Figure 3, agentic engagement predicts self-actualization significantly (β= .37, p<.05). In addition, self-actualization significantly predicted psychological needs (β= .47, p<.05). To assess the model fit, a number of fit indices were also looked at. Table 4.6 displays the indexes of goodness of fit. The chi-square/df ratio (2.01), RMSEA (.051), GFI (.94), and CFI (.92) all fall inside the acceptable fit thresholds, as shown by Table 8. As a result, it may be said that the suggested model and the empirical data suit each other perfectly.

Table 8. Goodness of Fit Indices

	X2/df	GFI	CFI	RMSEA
Acceptable fit	<3	>.90	>.90	<.08
model	2.01	.94	.92	.051

As stated by Tseng et al. (2006), it is acceptable in structural equation modeling for some indices to not conform to the majority trend. Therefore, it was assumed that the proposed model was a moderately good fit with the fit thresholds data, verifying that the proposed model in the current study for Iranian EFL learners' agentic engagement, psychological needs, and self-actualization was appropriate for Iranian EFL contexts based on self-determination theory.

Discussion

The current study was set to examine whether Iranian EFL learners' agentic engagement significantly predicted psychological needs and self-actualization. It also investigated whether Iranian EFL learners' self-actualization significantly predicted psychological needs. The findings revealed that Iranian EFL learners' agentic engagement was a positively significant predictor of the psychological needs and self-actualization. In addition, the results showed that Iranian EFL learners' self-actualization significantly predicted psychological needs.

Reeve's (2018) notion that highly agentically engaged learners give teachers opportunity to autonomously self-learn how to become more autonomy-supportive provides one explanation for the outcomes and the link among variables. According to Reeve, the characteristics of autonomy support include taking the perspective of the students, incorporating their ideas, emotions, and actions into the way that instruction is delivered, and designing learning activities so that they

enhance students' intrinsic motivational resources rather than undermining or frustrating them (Reeve, 2018). As a result, agentically engaged students act as a laboratory for educators, helping them to develop behaviors that support autonomy by sharing their viewpoints and incorporating their ideas, emotions, and actions into lessons. They also successfully communicate their needs, wants, and preferences to the teachers.

Moreover, another factor contributing to the results is the varying ways in which language learners engage with and approach the tasks assigned by their instructors (Rapanta, et al., 2020). Certain students may exhibit higher levels of motivation, enthusiasm, and strategic interaction. These behavioral, emotional, and cognitive variances serve as significant predictors of their learning outcomes (Dixson, 2015). Importantly, students also demonstrate diversity in their intentional efforts to influence their learning environment. For instance, they may provide suggestions on personalizing learning experiences to suit individual needs or enhancing overall educational quality (Slavich & Zimbardo, 2012).

Moreover, the outcomes correspond with earlier research that showed the basic demands in Self-Determination Theory (SDT) have predictive value for several dimensions of student engagement (Reeve & Tseng, 2011). This research highlighted the fact that students are more likely to engage in their learning activities in a behavioral, emotional, cognitive, and agentic way when they are presented with chances that generate ideal challenges (competence) and supportive relationships (relatedness). The results are consistent with the research conducted by Cook and Artino (2016), which indicates that students' efforts, perseverance, and emotional reactions to success and failure are highly predicted by the fulfillment of their basic needs. Reeve (2013) went on to emphasize that meeting fundamental requirements motivates students to use complex, in-depth, and self-regulatory learning techniques, which in turn supports proactive, deliberate, and positive engagement in their educational endeavors.

In the context of the relationship between language autonomy and agentic participation, it has been suggested that the active involvement of students can be considered as a significant complement to independence. This is because agentic engagement entails learners contributing ideas, making recommendations, and stating their preferences (Winstone, et al. 2017) while the realization of autonomy implies that learners have the liberty to express their thoughts, engage in interactions, and make intentional decisions (Murray, 2014). Previous findings have revealed that fulfilling

autonomy is closely linked to students' vitality, motivation, dispositional flow, and academic achievement in the realm of physical education (González-Cutre, et al. 2020).

The study's results align with previous research (Reeve & Shin, 2020) suggesting that the cooperative interactions within the educational environment's activity structure may explain the positive relationship observed between students' independence and active engagement. As people inherently seek connection and assistance from others, the communal aspect of autonomy can be nurtured through interactions with peers and educators. According to Ryan et al. (2015), autonomy encompasses social as well as personal components, and these facets interact as students' progress towards becoming more self-reliant learners.

Individuals are more likely to feel as though their needs are met when the social environment uses techniques that support them. This ultimately produces adaptive outcomes and a more independent drive for the task. On the other hand, environments that employ need-thwarting tactics tend to frustrate needs, control motivation, and anticipate maladaptive outcomes. Social agents (teachers, coaches, etc.) that use autonomy-supportive, competence-supportive, and relatedness-supportive tactics create need-supportive social settings.

It is worth noting that the quantitative findings reported the existence of significant relationship between agentic engagement and psychological needs and self-actualization all underscore the critical role of active involvement and ownership in the educational experiences of Iranian EFL learners. Without fostering these aspects, students remain passive, unfulfilled, and lack self-determination, reinforcing the need for educational strategies that promote greater engagement and empowerment. The results are consistent with previous research (Rapanta, et al., 2020) and suggest that initiatives aimed at encouraging intrinsic motivation and agentic engagement could have an impact on final results. It is necessary to conduct additional study to investigate tactics in inclusive settings that support intrinsic motivation and agentic participation in all students, thereby improving their academic performance, well-being, and sense of self. The study's findings are consistent with past investigations in the area (e.g., Chiu, 2022; Kossyva et al., 2024). The cooperative dynamics present in the learning environment's activity system could be one reason for the positive correlation shown between students' engagement and the other variables. the results are in harmony with Schoofs et al. (2022) study that conducted a longitudinal study based on self-determination theory to explore the mediating role of basic psychological need satisfaction in the

relationship between social support and self-actualization indicators at work. Similar to the current study, Schoofs et al. (2022) reported that the fulfillment of general and individual basic psychological needs mediated the connection between social support from various sources and self-actualization at work.

Limitations of study

As with all the studies, there are limitations that might affect the results of the study. First, there were some language learners' characteristics such as self-efficacy, motivation and so on, which were not controlled, and may affect the internal validity of this research. The other limitation to be mentioned was that the participants were only 300 Iranian EFL learners, in language institutes which may jeopardize the generalizability of the study to other EFL or ESL contexts. The specific cultural and educational background of Iranian learners might not represent the diverse experiences of EFL learners in different countries or educational settings. While the study included both male and female students, it did not explore potential gender differences in engagement practices and outcomes.

Conclusion

This study examined whether there was any significant relationship between Iranian EFL learners' agentic engagement and their psychological needs, agentic engagement and self-actualization, as well as psychological needs and their self-actualization. It was found that there was positive relationship between Iranian EFL learners' agentic engagement and their psychological needs and self-actualization. Further, Iranian EFL learners' psychological needs and their self-actualization had a positive relationship. Additionally, autonomy and relatedness highly predicted Iranian EFL learners' agentic engagement. The results imply that SDT (Self-Determination Theory) and activity theory can both adequately explain the relationships between the variables under investigation. Since SDT outlines how the social environment can be improved to foster adaptive motivation, it is particularly helpful for understanding motivation and other structured activities. In sum, the findings indicate that when individuals communicate their needs and desires, experience satisfaction in their relationships, and receive support to be proactive in their environment, they tend to have favorable outcomes linked to self-determination. Additionally, it is proposed that increasing the opportunities for students to engage in self-directed activities may boost their internal motivation levels. This underscores the importance of creating a supportive

environment that promotes student initiative and fosters positive relationships to enhance self-determination and intrinsic motivation. The consensus reached by research on SDT and activity theory highlights the significance of encouraging students' independent motivation and participation in the classroom. This suggests that educators should make an effort to support students' self-motivation and engagement, paying special attention to meeting their psychological requirements. Fostering an atmosphere that meets students' core psychological needs—autonomy, competence, and relatedness—is essential to encouraging their active participation. Administrators should provide teachers the autonomy to create curricula, select instructional materials, and oversee classroom operations in order to do this. Further professional development for educators, including the use of particular teaching strategies, can also be required to satisfy students' demands for competency. Building a supportive community where students can share instructional ideas and concerns can contribute to fulfilling the need for relatedness. Considering the findings and limitations of this investigation, it is recommended to conduct further exploration on the topic. By introducing additional independent variables like gender, motivation, socioeconomic status, or the individual characteristics of language learners, upcoming research in relevant areas could explore a wider scope. Future research initiatives could benefit from a diverse and varied sample of participants, including students from various educational institutions. Inclusion of environments such as bilingual and private schools could lead to a more comprehensive understanding of the psychological prerequisites and active involvement of Iranian English as a Foreign Language (EFL) learners. Additionally, subsequent studies could employ an experimental approach to examine the interrelation between psychological needs, language skills (e.g., speaking and writing), and the level of active participation.

Acknowledgment

The authors would like to express their gratitude to the clinical research development unit of Imam Khomeini Hospital, Urmia University of Medical Sciences, for English writing and editing.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by the ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

M.A., S.B, R. R and D. K. contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

Funding

The authors did (not) receive support from any organization for the submitted work.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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