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Research Article

Exploring the Interplay between Agentic Engagement and Psychological Needs in Iranian EFL Learners: A Self-Determination Theory Perspective on Practices and Perceptions

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Abstract

Aim: This study explores the relationship between Iranian English Foreign Language (EFL) learners' agentic engagement and their psychological needs through the lens of Self-Determination Theory (SDT), focusing on learners' attitudes toward these concepts.

Methods: In this mixed-method research a pilot study was conducted with 15 participants to ensure reliability, evaluated by Cronbach's Alpha. In the main study, 300 homogenized learners from three language schools in Mahallat, Markazi Province, Iran, were selected through the OPT test, and they completed agentic engagement and psychological needs questionnaires. Additionally, semi-structured interviews were conducted with 20 EFL learners to gather qualitative data. The quantitative data were analyzed using structural equation modeling (SEM) to validate the study model and explore relationships between variables. The qualitative data were thematically analyzed, identifying key themes such as active participation, peer collaboration, teacher support, and diverse teaching strategies.

Results: The findings revealed a significant positive relationship between agentic engagement and psychological needs, with autonomy and relatedness as strong predictors. The study highlights the importance of creating supportive learning environments that address students' psychological needs and promote active engagement. Semi-structured interviews emphasized the importance of active participation, peer collaboration, teacher support, and diverse teaching strategies in fostering engagement. Overcoming barriers and addressing challenges in recognizing learners' efforts were highlighted as crucial for enhancing overall engagement.

Conclusion: Pedagogical implications based on SDT suggest that fostering a supportive learning environment that meets students' psychological needs of autonomy, competence, and relatedness is essential for enhancing agentic engagement among Iranian EFL learners.

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1. Introduction

The ever-growing importance of second language (L2) acquisition has spurred educators and researchers to explore a wide range of methodologies for identifying the factors that influence language learning success. Contemporary models of L2 learning acknowledge the interplay of cognitive, affective, and social factors in language acquisition (De Bot et al., 2007). However, for various reasons, mastering an L2 can be a challenging process that may hinder desired learning outcomes (Liu & Liu, 2015). Therefore, investigating the components that contribute to student learning and facilitate the L2 acquisition process is crucial. While previous research has examined the role of language characteristics in learning, the current focus has shifted to understanding the learner itself.

Previous research in psycholinguistics, second language pedagogy, and psychology has explored the potential link between learning style theories, tasks, and language characteristics, including agentic engagement (Dincer et al., 2019). For the past three decades, learner engagement has been a central and well-researched topic within educational psychology, including its application to second language learning (e.g., Boekaerts, 2016; Reeve & Jang, 2022; Yang & Zhang, 2023).

Learner engagement, as defined by Kahn (1990), is a multidimensional construct encompassing students' investment in learning tasks – physically, cognitively, and emotionally. This includes perceived meaningfulness, classroom safety, and resource availability (Reeve & Tseng, 2011). Building on this, Reeve and Tseng (2011) propose agentic engagement, emphasizing students' proactive contributions (seeking resources, asking questions, expressing preferences) (Zambrano et al., 2023). This active participation enriches the learning experience and fosters a responsive classroom, vital for language acquisition. The multifaceted nature of learner engagement is particularly critical in EFL contexts (Li & Li, 2022). EFL learners face unique challenges (cultural differences, language barriers, resource disparities) that can significantly impact engagement (Turney & Kao, 2009). Understanding these challenges and their influence on engagement is crucial for educators to develop effective support strategies (Turney & Kao, 2009). For instance, EFL learners might face additional pressures from societal expectations and educational policies potentially affecting their motivation and overall engagement in English language acquisition (Wang & Degol, 2014).

Self-Determination Theory (SDT), with its core tenet of Basic Psychological Needs Theory (BPNT), posits that the fulfillment of autonomy, competence, and relatedness is essential for motivation, well-being, and ultimately, learning success (Ryan & Deci, 2000). When these fundamental needs are met, individuals exhibit greater motivation and engagement, leading to improved learning outcomes (Cook & Artino Jr, 2016; Sepahvand et al., 2023). Within the context of English as a Foreign Language (EFL) learning, where student motivation and engagement are paramount for success, the interplay between these basic psychological needs and agentic engagement (taking ownership of learning) becomes particularly significant. Understanding how these psychological factors influence engagement can provide valuable insights for educators seeking to enhance their teaching practices. A growing body of research, informed by SDT principles, has explored the role of psychological needs in language learning outcomes (e.g., Meihami & Husseini, 2022; Sardabi et al., 2023). While some studies suggest that the specific combination and emphasis on these needs may vary in their impact on L2 (second language) learning across different contexts (e.g., Alamer, 2022), research on the direct correlation between psychological needs and students' agentic engagement remains in its early

stages. In the current study, learners' attitudes towards engagement practices and their psychological needs were emphasized. EFL learners' attitudes seem to be shaped by various interrelated factors and they generally exhibit varied attitudes toward different engagement strategies and the fulfillment of psychological needs. Many find collaborative learning, such as group work and peer discussions, to be beneficial for their language acquisition. These practices foster a sense of community and enhance motivation by allowing learners to share ideas and practice speaking in a supportive environment. However, some learners may feel hesitant or anxious in group settings, which can negatively impact their engagement. By studying the attitudes and acknowledging these aspects, educators can create more effective and responsive learning environments that cater to the diverse needs of EFL learners.

This study holds significant implications for informing educational practices and policies within EFL contexts. By elucidating how agentic engagement and psychological needs influence language learning, educators can be empowered to develop more effective strategies that support their students' intrinsic motivation and engagement, as a study by Mehdipour et al., (2018) confirmed agentic engagement can influence the students' agency, as well as their English learning. For example, teachers can cultivate learning environments that nurture autonomy, competence, and relatedness. Curriculum designers can integrate activities that promote agentic engagement, such as project-based learning or student-led discussions, fostering a more interactive and student-centered learning process. This research aligns with the introduction's emphasis on understanding the interplay between engagement and psychological needs in language learning (Ghadampour et al., 2018) . By investigating these relationships within the specific context of Iranian EFL learners, the study seeks to provide valuable insights that can contribute to improved educational practices and outcomes. Ultimately, this can lead to more effective and enjoyable learning experiences for students, aiding them in achieving their language learning goals and fostering a lifelong love of learning. In line with the purposes of the study, the following research questions are proposed:

RQ1. Does agentic engagement significantly predict psychological needs?

RQ2. What are the attitudes of EFL learners towards engagement practices and psychological needs?

2. Review of the Literature

2.1. Self-Determination Theory

Deci and Ryan (1985) introduced the SDT, which provides a thorough framework for the study of human personality. The theory posits three fundamental, innate needs that underpin self-determination, the sense of internal control over one's actions. These needs, autonomy, competence, and relatedness, have been associated with more positive experiences and increased participation in physical activity (Chiu, 2022). Within the SDT framework, behavior is driven by the fulfillment of these three psychological demands, which are crucial for mental health and overall well-being (Deci & Ryan, 2012). When considered in a social context, autonomy, competence, and relatedness significantly impact an individual's motivation (Deci & Ryan, 2008). According to Ryan and Deci (2000), these three basic psychological needs are intrinsic, universally experienced, and essential for every person. Failure to meet these needs can lead to psychological distress and decreased well-being (Chang et al., 2015). Conversely, their fulfillment fosters increased well-being. Analogous to the essential physiological needs for food and water, SDT posits three fundamental psychological needs – autonomy, competence, and relatedness – that are equally crucial for human flourishing (Ryan & Deci, 2000).

Ultimately, using SDT as the study's framework, it is believed that motivational forms have a major role in learner engagement; fostering a variety of inspirations is a critical source that forces students to become fully engaged in their studies (Reeve, 2013). As a result, it is located inside SDT. SDT defines both internal and external sources of inspiration. Its recommendations focus on the ways in which social and contextual factors support or undermine an individual's quality of life and performance (Ryan & Deci, 2020). There is a bulk of studies in SDT, for example, Jiang and Zhang (2021) adopted an integrated perspective, combining Self-determination Theory and Achievement Goal Theory, to investigate the influence of teaching styles—perceived autonomy support, social relatedness, and controlling—on university students' agentic engagement in EFL learning in China. Their findings indicated that autonomy support enhanced engagement via mastery-approach goals, while controlling negatively affected it through performance-approach goals. Social relatedness influenced engagement through both goal types. Schoofs et al. (2022) conducted a longitudinal study based on self-determination theory to examine how basic psychological need satisfaction mediates the relationship between social support and self-actualization at work. Results showed that both general and individual needs mediated this connection, except for the need for relatedness in coworker support.

2.2. Psychological Needs

Building upon SDT, Deci and Ryan (2000) introduced the Basic Psychological Needs Theory (BPNT). This theory emphasizes the intrinsic link between psychological needs – specifically, autonomy, competence, and relatedness – and motivation. Ryan (1995) further underscores the domain-specific nature of these needs, highlighting that their neglect or frustration can lead to negative consequences like fragmentation and alienation. Autonomy, competence, and relatedness form the core pillars of BPNT. Autonomy refers to the need for self-directedness and freedom from external control or undue influence (Carreira, 2012).

Accordingly, Deci and Ryan's (1985) Cognitive Evaluation Theory (CET) highlights how supportive learning environments fostering competence can enhance intrinsic motivation, defined by Froiland and Worrell (2016) as internally driven actions. Organismic Integration Theory (OIT), another SDT sub-theory, explores the internalization of extrinsic motivation (Deci & Ryan, 1985). OIT acknowledges external rewards (Oga-Baldwin et al., 2017; McEown et al., 2019) but proposes a continuum within extrinsic motivation, ranging from externally-driven to integrated with personal values (Pelletier & Rocchi, 2023). This continuum reflects increasing autonomy, a key concept in SDT. In essence, BPNT, along with its sub-theories like OIT and CET, provides a comprehensive framework for understanding the intrinsic motivational drivers of individuals within educational settings. In the area of BPN, Arifani et al. (2023) investigated in-service teachers' and learners' perspectives on BPN fulfillment in blended professional training, involving 60 teachers and 120 students across Indonesia. While no significant differences were found between the groups, learners reported low fulfillment of relatedness and competence, citing issues like inadequate online care and excessive tasks. Interviews further emphasized learners' dissatisfaction with teachers' empathy and engagement.

2.3. Agentic Engagement

In the educational context, agentic engagement refers to students' active involvement and participation in shaping their learning process (Fletcher, 2016). It goes beyond passive learning and empowers

students to take ownership of their educational journey by participating actively, making choices, and collaborating with peers (Winstone et al., 2017). This approach fosters a dynamic environment where students embrace intellectual risks, ask questions, and experiment with new ideas (Reeve & Tseng, 2011).

Agentic engagement is closely aligned with intrinsic motivation, where genuine interest drives engagement and perseverance (Delaney & Royal, 2017). Additionally, it promotes a growth mindset, encouraging students to view challenges as opportunities for learning and development (Dweck, 2006). This fosters resilience, adaptability, and self-directedness, ultimately leading to more meaningful and effective learning experiences (Reeve & Shin, 2020). By empowering students to take ownership, develop critical thinking skills, and collaborate with peers, educators can create an environment that enhances academic, emotional, and social well-being (Gu et al., 2024).

As we pursue innovative educational approaches, prioritizing agentic engagement becomes essential in nurturing intrinsic motivation, curiosity, and a lifelong love of learning in students. Regarding engagement, Reeve and Tseng (2011) examined the motivation and engagement criteria of Taiwanese EFL learners, correlating these with semester grades. Using structural equation modeling, they found that agentic engagement is a distinct and crucial concept linked to intrinsic motivation and is predictive of changes in autonomous achievement. This study highlights how students actively influence their educational experiences by customizing curricula and enhancing learning environments.

Suharti et al. (2021) conducted a descriptive survey to assess student engagement in online EFL classrooms at a vocational school in Indonesia. They used the Online Student Engagement Scale (OSE) to analyze data from 23 respondents through questionnaires and video observations. The results indicated that online language learning platforms significantly enhance EFL students' engagement in the learning process.

3. Method

3.1. Participants

The current study employed a sequential explanatory mixed methods design, utilizing qualitative data to enhance the interpretation and explanation of quantitative research findings. Participants included all intermediate EFL (English as a Foreign Language) students from three language schools in Mahallat, Markazi Province, Iran. These students were enrolled in a general language course aimed at improving their overall proficiency. A sample of 350 male and female EFL students, aged between 20 and 28, was selected through convenience sampling from the three Mahallat language institutes. To ensure participant homogeneity, the Oxford Placement Test (OPT) was administered during the selection process. Notably, out of the initial participants, approximately 46 students were eliminated due to their low or high scores on the homogeneity test, resulting in 304 students remaining as homogenized participants. To maintain balance in the study, 4 students were randomly excluded, leaving a total of 300 students (167 males and 133 females) who completed the study's questionnaires. Additionally, 20 Iranian EFL learners (11 males and 9 females) from the same population were selected based on convenience sampling to participate in voluntary interviews. These interviewees ranged in age from 21 to 26 and were also learning English in the language institutes in Mahallat, Iran.

3.2. Instruments

3.2.1. Oxford Placement Test

To create a homogeneous sample and assess the participants' general language proficiency, the Oxford Placement Test (OPT) was utilized. The test items were sourced from "The Longman

Complete Course for the TOEFL Test" by Phillips (2018). This 50-item test, which evaluates grammar, vocabulary, and pronunciation, took an average of 60 minutes to administer. Scores that fell one standard deviation above or below the mean were excluded from the analysis. Although the institute's report categorized the participants as intermediate-level learners, the OPT was employed to confirm the uniformity of their general language proficiency levels. The test demonstrated a high degree of internal consistency, with a reliability score calculated at 0.81. The KR-21 method was used to evaluate and report the reliability index for the OPT, yielding an acceptable level of reliability. Furthermore, the score distribution of the OPT test adhered to the normality assumption. The skewness and kurtosis ratios were within acceptable limits, remaining less than +/- 1.96 when compared to their standard errors. Additionally, the test's validity coefficient was calculated at 0.78, confirming that the OPT adequately measured general language proficiency.

3.3. Basic Psychological Needs Scale

The Basic Psychological Needs in Exercise Scale (BPNES), modified by Vlachopoulos and Michailidou (2006), was the second tool utilized in this study to assess the psychological needs of the participants. To assess relatedness, competence, and autonomy, the 12 questions on the modified scale—known as the BPN-PE—are divided into three subscales, each with four items. Enough proof of validity and reliability has been provided for the BPNES in exercise (Vlachopoulos & Neikou, 2007; Vlachopoulos & Karavani, 2009). Specifically, competence values ranged from 0.80 to 0.86, relatedness values from 0.88 to 0.92, and autonomy alpha values from 0.80 to 0.84. Regarding construct validity, confirmatory factor analyses in prior studies supported the three-factor structure of the BPNES, with factor loadings above 0.60 and fit indices within acceptable thresholds, confirming that the instrument reliably measures the intended psychological constructs.

3.4. Agentic Engagement Scale

As the third data collection method, the student agentic engagement was assessed using the original items from the Reeve and Tseng's (2011) scale. It is a scale with a total of 10 items, ranging from strongly agree to strongly disagree on a 5-point Likert scale. The agentic involvement of the languages was measured in the current study, and the scale was employed to address the first research question. Reeve and Tseng (2011) already attested to the scale's reliability (r=0.82).

3.5. Semi- Structured Interview

To explore the relationship among variables and understand the attitudes of English as a Foreign Language (EFL) learners towards engagement and psychological needs, we conducted a semi-structured interview. The interview comprised eight questions, which the EFL learners, acting as interviewees, were asked to answer. We utilized both quantitative and qualitative methods for data collection to achieve triangulation, thereby enhancing the credibility and validity of the research findings. To accommodate the participants, the interviews were conducted online via Skype. Each interviewee was interviewed individually, with their voices recorded for further analysis and presentation. The interviewees responded in Farsi to ensure they felt comfortable, and their responses were later translated into English for inclusion in the study's qualitative data. To allow for open expression, there was no time limit imposed during the interview phase. To confirm the credibility of

the interview questions, the information collected from the interviewees was presented back to them. They were encouraged to review each question and their answers to check for any issues or inconsistencies. A series of procedures were implemented to evaluate the interview's dependability and credibility. The authenticity of the interview data was confirmed after the participants attested to its accuracy. For reliability, two colleagues of the researchers, who were knowledgeable in data analysis, double-checked thirty percent of the interview results. The inter-rater reliability result was 89%. Additionally, meetings with language specialists were held to discuss preliminary findings and verify the transferability of these findings. This further established the conformance and consistency of the analysis. To enable the reader to assess whether the findings may be generalizable to other contexts, we carefully selected and reported on the context, participant demographics, data collection methods, and data analysis procedures. Finally, to investigate the typical engagement strategies for Iranian EFL learners, a semi-structured interview was again utilized

3.6. Procedure

The present study was performed in two distinct phases: the main study, which consisted of a quantitative phase, and a qualitative phase. The current study's piloting phase was its first stage of the treatment. One of the most important parts of the research process is piloting, which enables the discovery of unanticipated minute details and problems with the instruments used in the initial study. The researcher designed a pilot study in light of this. The two main objectives were to set a timetable and to determine which instruments' defects needed to be rectified in their finished forms. Moreover, during the piloting phase, language experts evaluated the validity of the research instruments through item reviews, and the reliability, as evaluated by Cronbach's Alpha, was used to recalculate the study's objectives. In the pilot study, 15 participants with similar characteristics to those of the participants in the main study were selected. Utilizing Cronbach Alpha, the reliability of research instruments was evaluated and reported (Basic Psychological Needs Scale, r=.89 and Agentic Engagement Scale, r=.79). In addition, to conduct the main study, the following steps were taken.

Initially, both male and female Iranian EFL students were given the OPT in order to assess the homogeneity of the learners in terms of general language proficiency. There was one hour allotted for this test. After the analysis, 300 homogenized learners were selected as the final participants. The learners were required to fill out the agentic engagement questionnaire and psychological needs scale, and they had no time limit for completing the scales.

Besides, from among the participants, 20 EFL learners (11 males and 9 females) were selected for the interviews. The interview was conducted through the Skype application. The individuals were interviewed in a semi-structured manner by the researcher. The purpose of conducting the interview sessions was to provide genuine and trustworthy results. In order to achieve this, the researcher first got in touch with each participant and extended an invitation to take part in the Skype interview. He then made the interviewees feel at ease by establishing a convivial environment. After introducing themselves, the interviewer explained to the participants the reason for the interview but refrained from giving away too much about the research project to prevent respondents' prejudice from developing. Language specialists with Ph.D. degrees in TEFL were asked to assess the suitability and relevance of the interview questions during a brief interview session in an effort to determine the validity of the interview questions. The experts' comments were measured for consistency and agreement, which served as a benchmark for reliability.

Some actions were also taken during the interview sessions. First, the interviewees were free to openly express their opinions in any language, whether Persian or English, that they felt comfortable using. Secondly, customers received guarantees that the confidentiality of their data would be maintained. Third, they were made aware that a recording of their voices would be made. Fourth, the researcher remained impartial and refrained from interfering with the subjects' conversations. Fifth, the interviews were given feedback and back-channel signals to avoid giving the impression that a monologue was being delivered. Sixth, in order to help the participants understand the material, the researcher made notes of the key ideas and followed up with questions for clarification. Lastly, member-checked data from the interviews was used to highlight any ambiguities and misconceptions. As a result, the researcher asked the interview subjects to revisit the subject and provide more context, and the participants went over their own opinions and added or eliminated any contradictions.

During the interviews, the researcher made notes even though every session was recorded to ensure that all the relevant information was obtained from the participants. Interviews were conducted until the data were saturated. Around seven sessions were devoted to the interview sessions, and after the three sessions, the results of the interviews were analyzed qualitatively. The method of analysis chosen for the interview section was a qualitative approach of thematic analysis, and it was reported in the form of themes and sub-themes for the semi-structured interview as well as the extracts. Following this procedure, the researcher examined the transcripts in an effort to identify any fleeting trends or patterns. According to Braun and Clarke (2006), thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) within data. Additionally, the researcher alternated between trying to process the data and reviewing the codes line by line to find relevant qualitative units for analysis. The information obtained from the respondents was presented to them by the researcher, who asked them to pay attention to each question and their responses to determine whether there were any discrepancies in the replies or issues with the questions themselves. This allowed the researcher to estimate the reliability of the interview questions.

3.7. Data Analysis

A set of steps were taken to assess the reliability of the qualitative data. The study's suggested model was evaluated using structural equation modeling (SEM) in order to analyze the quantitative data and offer solutions to the research questions that were raised. The initial step in doing SEM is validating the model by analyzing the measurement models (Baghaei & Tabatabaee Yazdi, 2016). Measurements of the discriminant validity, composite reliability score, average variance extracted (AVE), and loadings of the components of the latent variables should be performed in order to accomplish this goal. In order to ascertain the relationship and prediction between the variables, a regression analysis and a Pearson correlation were also carried out.

The study's model's constructs are regarded as explanatory variables. The investigation only looked at indicators, latent variables, and routes that were significant at the.05. This was done after bootstrapping analysis. Using random sampling techniques, bootstrapping determines the sample distribution (Varian, 2005). Parametric significance tests cannot be used to determine the significance of coefficients like outer weights, outer loadings, and path coefficients since PLS-SEM does not assume that the data are normally distributed. As an alternative, PLS-SEM tests the significance of likely route coefficients models using a nonparametric bootstrap

approach (Davison & Hinkley, 1997). The nature and intensity of the associations between the variables are evident in the SEM software analysis of the baseline model.

In order to address the second question and evaluate the information gathered from the interviews, a thematic analysis of the data was employed. The data of interview were offered qualitatively by reflecting the statements that were presented by the candidates. Recording the subjects' voices for later reference was an important step taken by the researcher. For the data analysis of the interview data, the interviews were tape recorded, and were thematically analyzed and coded. As the next step and based on their themes, they were classified. Consequently, the results of the focus group interview (to answer the last research question) were analyzed qualitatively in the form of extracts to explore the attitudes of the learners to reflect on the views on the variables under the study.

4. Results

4.1. Quantitative Data Analysis

In order to see whether agentic engagement significantly predict psychological needs, a set of activities has been done. To answer this research question, the descriptive statistics of the variables were calculated. **Table 1** illustrates the results.

Table 1. 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
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.**

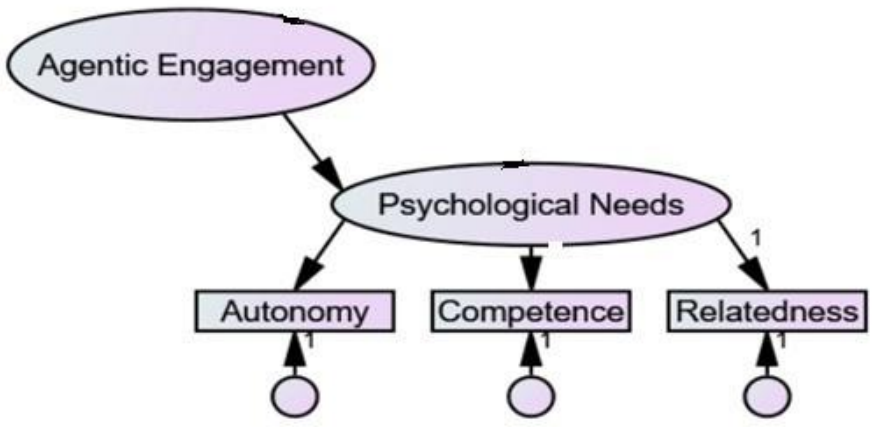


Figure 1. The Proposed Model of the Study

The suggested model was then subjected to PLS-SEM analysis in order to exclude the non-significant pathways from the structural model and the indicators with low factor loadings (less than 0.40). The structural model retained the T-values for the relationships in the suggested model that were higher than 1.96. The final model was created by removing the non-significant associations. As a result, this model was the subject of all evaluations during the other phases of the investigation.

Furthermore, an analysis was conducted on the correlation between the research's hidden variables. The coefficients R2 associated with the endogenous (dependent) variables of the structural model serve as the initial criterion for assessing the model's fit. A metric called R2 illustrates how an exogenous variable affects an endogenous variable. According to Davari and RezaZadeh (2018), there are three numbers that are regarded as the criteria values for weak, medium, and strong values, respectively: 0.19, 0.33, and 0.67. The Q2 values of the endogenous variables in the model serve as the second criterion for evaluating the study's structural model's fit. This criterion establishes the model's predictive ability. Henseler et al. (2009) state that the three values for this criterion—0.02, 0.15, and 0.35—indicate, respectively, weak, medium, and great predictive potential for the structure.

Table 2. Coefficient Results of R2 and Q2

Variable	R^2	Q^2
Psychological needs	0.254	0.133
Autonomy	0.613	0.291
Competence	0.109	0.061
Relatedness	0.612	0.277

The resulting R2 values demonstrate the adequacy of the study's structural model, as shown in Table 2. Furthermore, the results obtained from **Table 2** demonstrate that all endogenous variable Q2 values are greater than 0.35, indicating the model's good predictive ability and confirming the structural model of the current investigation's appropriate fit. Using the goodness of fit criterion (GOF), the general model of the study's structural equations was evaluated following an inspection of the measurement and structural models' fits. This index is used to assess the overall performance of the model by looking at both structural and measurement models. This index is equivalent to the mean of the endogenous latent variables' coefficient of determination (R2) and the average geometric mean of their shared values.

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

For GOF, the three values of 0.01—0.01, 0.25—and 0.36 were regarded as weak, medium, and strong, in that order. The entire research model fits the data quite well, as seen by the value of 0.406 for the research model. Next, all of the variables under investigation and their correlations with agentic engagement were calculated; these relationships were significant since $p<0.5$. Table 3 presents the results.

Table 3. 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
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; A: Autonomy; C: Competence; R: Relatedness

Subsequently, three dimensions of indicator reliability, convergent validity, and discriminant validity were used to assess the measurement model. **Table 4** displays the α coefficient, CR, and AVE values for every variable.

Table 4. α Coefficient CR and AVE Values of Variables

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

As illustrated in Table 4, α coefficient is acceptable for the variables. However, since it is more proper to utilize CR in PLS-SEM analysis, its values are acceptable. Hence, the variables of the model have an acceptable level of reliability. Finally, to test the proposed model and null hypotheses, the final model was analyzed and interpreted.

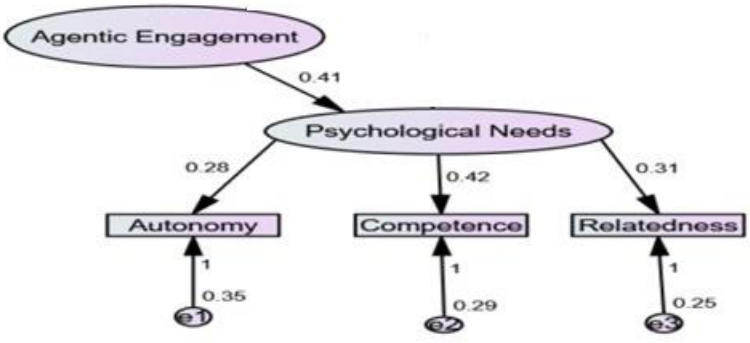


Figure 2. Structural Model of the Study

As Figure 2 shows, agentic engagement (β= .41, p<.05) is a positively significant predictor of psychological needs. To assess the model fit, a number of fit indices were also looked at. 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 5**. As a result, it may be said that the suggested model and the empirical data suit each other perfectly.

Table 5. 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 its sub-components was appropriate for Iranian EFL contexts based on self-determination theory.

Qualitative Data Analysis

The second phase of the study, as the qualitative phase, aimed to explore EFL learners' attitudes towards the variables such as agentic engagement, psychological needs, and self-determination in English classrooms. Furthermore, exploring different types of engagement in English classrooms was the other aim. Both of the research questions were answered through semi-structured interviews. The first question of interview was on the definition that EFL learners expressed about engagement. From the total of 20 EFL learners, all of them pointed to the theme of Active Participation equals to engagement. Interaction with Peers (17 out of 20) and Enjoyment and Enthusiasm (14 out of 20) were the other two themes reported by the interviewees. Following three extracts clarifies the results.

Extract 1: "For me, class engagement means actively participating in discussions and activities. When I raise my hand to answer questions, share my thoughts, or work on group projects, I feel more connected to the class."

Extract 2: "Engagement includes interacting with my classmates. Whether it's collaborating on assignments, discussing ideas, or helping each other, the social aspect is a big part of what makes a class engaging for me."

Extract 3: "Engagement is also about enjoying the learning process. When the teacher brings enthusiasm to the class, it creates a positive atmosphere that motivates me to participate actively and makes the overall experience enjoyable."

The second question of the interview was to explore the attitudes of the subjects, on the manner in which they engage themselves in class activities before/during/after the class. The highlighted extracts were Preparing Ahead (13 out of 20), Active Participation During Class (20 out of 20), Reflecting After Class (10 out of 20), and Collaboration with Peers (16 out of 20). One of the learners (22 years old, male) believed in preparing ahead before the class time:

Extract 4: "Before class, I engage myself by preparing for the upcoming lesson. I review the materials, read ahead, and familiarize myself with the topics. This helps me feel more confident and ready to actively participate during the class."

However, a 24 years old female learner, similar to the others, saw active participation as the strategy during the class and other reported on the role of peers, while some of the interviewees reported on the reflection after the class, as the out of the class strategy for the engagement.

The third question of the interview was on the role of teacher on learners' engagement. Learners believed that instructors play critical role in engaging students in class activities and they mentioned to the Well-defined Goals (11 out of 20), Enthusiastic Teaching, Varied Teaching Methods (both of them 17 out of 20), Providing Feedback (9 out of 20), and Encouraging Participation (14 out of 20). Following extract is one of the sample answers to this question.

Extract 5: "The teacher plays a crucial role in engaging me by communicating the lesson objectives clearly. When the goals are well-defined, it helps me understand the purpose of the activities, making the class more engaging."

The variety of activities used by the teachers to increase engagement was the other question of the interview. The reported answers were different, as mentioned by the learners, for example, students stated that their professors only employ the tactics when they have the time and typically use audio aids since they have to teach listening skills. Furthermore, the participants contended that using various reading techniques, such as scanning, skimming, and self-monitoring were the other aids in the efficient acquisition of English and encourages students to practice reading in class. They even asserted that these reading techniques enhance their comprehension and inspire them to read English courses.

Additionally, participants generally agree that different tactics have varying degrees of efficacy, thus teachers should carefully select strategies that match the competence levels of their pupils. This knowledge highlights how crucial it is to modify teaching strategies to meet the various demands and ability levels of the learner population. Regarding language education teaching methodologies, different students had different viewpoints. Some contend that certain instructional strategies give each student a chance to participate, communicate, and share their thoughts. For instance, one female (21 years old) stated that:

Extract 6: One method to actively involve all pupils is to use the pair discussion tactic. Conversely, detractors contend that methods such as pair talks can result in an unruly and boisterous classroom setting, hence decreasing their efficacy.

The other strategies for engagement enhancement were problem-based learning, integrating literature into group problem solving, mind mapping, brainstorming, role-playing, simulations, case studies, and student creative construction. Additionally, they stated that they took notes (e.g., "By raising my hand, I get right to speak") and actively participated in class by doing things like raising their hands and offering to write on the whiteboard. Additionally, they reported feeling at ease in the classroom, enjoying the course, and being engaged in the material. They studied more English-language books, went over their course notes, and made an effort to apply the language in everyday situations (e.g., "I go to the library during the course"). These were more advanced cognitive strategies for learning the language. The following extract was worthwhile:

Extract 7: “In my experience, educators use a variety of instructional resources to hold students' attention. They use a variety of resources in addition to conventional textbooks to add some humor to the classroom. Using newspaper articles, audio readings, role-playing exercises, movies, music, educational games, group projects, experiments, field excursions, guest lecturers, and quizzes are some examples of how to do this. In addition, educators actively work to push children by providing engaging, hands-on activities that require critical thinking, like riddles, reading comprehension challenges, and problem-solving. Some of these activities are designed to be done in groups to encourage communication and cooperation. The goal of this multimodal strategy is to establish a stimulating and rewarding learning environment”.

The other question of the interview had two intentions and it aimed to explore learners’ attitudes towards both the kind of support or encouragement that the learners find most helpful in keeping them motivated and while facing difficulties in English studies, the manner in which they how do you seek support. All of the interviewees mentioned to Teacher Support, and some of them reported on Peer Support (11 out of 20), Real-life Application (9 out of 20), and Recognition of Progress (8 out of 20) as helpful support in engagement enhancement. Following are some of the selected extracts.

Extract 8: "I really appreciate it when my English teacher acknowledges my efforts and gives constructive feedback. It motivates me to keep going, knowing that someone is there to guide and support me."

These extracts highlight the importance of various types of support, including teacher guidance, peer collaboration, personalized feedback, real-life application, and recognition of progress, in keeping intermediate level EFL learners in Iran motivated during their English studies. In order to explore learners’ attitudes while facing difficulties in English studies and the type of support they seek; another question was asked and the learners mentioned to online resources (16 out of 20) and self-directed learning (1o out of 20) besides support through peer collaboration and teacher guidance, as the following extract showed.

Extract 9: "In my idea, although teacher support and classmates’ collaboration are solutions, actually online materials can be good choice. I use online resources like educational websites and forums when I'm stuck. Finding explanations and examples online is like having an additional support system that I can access anytime, making it easier to navigate through challenging topics."

To explore the pros and cons of peer collaboration (What is the role of the peers in engaging you in class activities), the interviewees’ attitudes were triggered. The following extracts highlight the significance of creating a supportive atmosphere (14 out of 20), language practice (18 out of 20), and building friendships (10 out of 20) as key elements in the role of peers in engaging intermediate level EFL learners in class activities in Iran. There were two additional extracts that expressed a more negative perspective on the role of peers in engaging intermediate level EFL learners in class activities, as the following extracts indicate.

Extract 10: "Sometimes, peers not participating or showing disinterest can be demotivating. When there's a lack of engagement from others in group activities, it makes the overall learning environment less dynamic and hinders my motivation."

Extract 11: "In certain situations, the class can become competitive, with peers trying to outshine each other. This kind of atmosphere can be discouraging, especially if it creates pressure rather than fostering a collaborative and supportive learning environment."

The next question was as follows:

Which factors hinder your active engagement in class activities?

The interviewees mentioned various factors, including lack of confidence (19 out of 20), difficulty understanding the material (18 out of 20), and lack of interest in the topic (16 out of 20). In fact, they can hinder active engagement in class activities for intermediate level EFL learners in Iran, as the extracts clarified.

Extract 12: "Sometimes, a lack of confidence hinders my active engagement. If I feel unsure about my language skills or fear making mistakes, it can hold me back from actively participating

in class activities."

The last question aimed to explore the relationship between psychological needs of the learners and their engagement in the classrooms. Surprisingly, learners reacted to this question differently and they mentioned to the elements and factors which show lack of such relationship and existence of the relationship. The participants believed that there is an association between two variables due to the satisfaction of psychological needs (15 out of 20), sense of belonging (13 out of 20), and autonomy (14 out of 20). Furthermore, the learners mentioned to the factors that create difficulty such as lack of recognition (9 out of 20) and absence of personal relevance (13 out of 20). The following extracts provide insights into how certain factors contribute to or hinder the connection between these elements.

Extract 13: "I feel motivated when the teacher acknowledges our efforts and gives us positive feedback. It fulfills my need for competence. When my classmates and I are encouraged, I'm more engaged in the lesson. It's like a cycle of motivation and involvement."

Extract 14: "I've noticed that when the class is more interactive and we collaborate on projects, it satisfies my need for social connection. I look forward to coming to class because I feel like I belong. This sense of belonging makes the learning experience more enjoyable and engaging for me."

In conclusion, learners universally associated engagement with active participation, including raising hands, answering questions, and contributing to group activities. The social aspect of engagement, involving collaboration with peers, was emphasized as valuable, along with the positive impact of an enjoyable and dynamic classroom atmosphere. Participants employed various strategies for engagement, including preparing ahead, active participation during class, reflecting after class, and collaborating with peers on group projects. These strategies were perceived as essential for boosting confidence, understanding content, and reinforcing learning. The teacher played a crucial role in fostering engagement through clear communication of lesson objectives, enthusiastic teaching, varied teaching methods, providing constructive feedback, and encouraging active class participation. A supportive teaching environment positively influenced learners' motivation. Also, multimodal teaching approaches, incorporating role-playing, simulations, case studies, and multimedia presentations, aimed to create a stimulating and rewarding

learning environment. Learners appreciated the diversity and adaptability of these approaches to different skill levels.

Teacher support, including acknowledgment of efforts and constructive feedback, along with peer collaboration, was identified as crucial for motivation. Recognition of progress further reinforced positive engagement. In addition, peer collaboration contributed to a supportive class atmosphere, provided opportunities for language practice, and enhanced the overall learning experience by fostering friendships within the class. However, some learners expressed concerns about potential challenges, such as lack of participation or a competitive atmosphere among peers. Barriers to engagement included a lack of confidence, difficulty understanding material, and lack of interest in the topic. Overcoming these barriers was deemed crucial for maintaining active participation and motivation.

5. Discussion

This study explored the potential for agentic engagement to predict psychological needs and their sub-components in Iranian EFL learners, addressing the first research question. The findings revealed a significant positive association between agentic engagement and psychological needs, aligning with existing literature on engagement practices and psychological needs across various educational contexts.

Our results are consistent with studies by Reeve and Tseng (2011) and Reeve (2013), which highlighted the importance of agentic engagement as a predictor of intrinsic motivation and academic achievement among Taiwanese and Korean students. Similarly, we found that agentic engagement in Iranian EFL learners correlates significantly with the fulfillment of psychological needs—specifically autonomy, competence, and relatedness. This finding reinforces the idea that when students actively participate in their learning process and perceive support from their teachers, their motivation and academic performance improve.

The work of Klem and Connell (2004) also supports our findings by underscoring the role of teacher support in enhancing student engagement and academic success. While their research focused on middle school students in the United States, our study extends these findings to Iranian EFL learners, suggesting that the positive effects of teacher support and engagement practices are universal across different educational contexts and age groups.

Shernoff and Schmidt's (2008) exploration of student engagement—through interest, enjoyment, and focus—mirrors our study's results. They found that these elements significantly contribute to student involvement in learning activities. This study similarly emphasizes that agentic engagement, which encompasses these aspects, is crucial for fostering a supportive learning environment that meets students' psychological needs.

In contrast to the context-specific findings of Jiang and Zhang (2021) in China and Suharti et al. (2021) in Indonesia, our research highlights the unique educational environment of Iran. For instance, while Jiang and Zhang found that autonomy support influenced agentic engagement through mastery-approach goals among university students in China, our study indicates that autonomy support directly impacts psychological need satisfaction and agentic engagement among Iranian EFL learners. This suggests that cultural and educational contexts may moderate the pathways through which engagement practices influence student outcomes.

This study, along with the findings of Mohammad Hosseini et al. (2022), emphasizes the importance of a positive classroom social climate and the enjoyment of learning in fostering student engagement. For Iranian EFL learners, creating a supportive and enjoyable learning

environment is essential. Teachers should prioritize autonomy support, provide opportunities for students to exercise agency in their learning, and ensure that the classroom climate is conducive to fulfilling students' psychological needs. Furthermore, insights from Arifani et al. (2023) regarding basic psychological need (BPN) fulfillment highlight the necessity for balanced instructional strategies that cater to both teachers' and learners' perspectives. In the context of Iranian EFL education, addressing perceived gaps in relatedness and competence is particularly crucial, especially in online and blended learning environments.

The relationship between learner autonomy and agentic engagement is multifaceted. While autonomy emphasizes the freedom to express thoughts and pursue learning (e.g., Gonzalez-Cutre et al., 2020), agentic engagement goes further, encompassing student input, recommendations, and communication of preferences. Research indicates a strong connection between autonomy fulfillment and student outcomes, including motivation, inspiration, and academic achievement (Gonzalez-Cutre et al., 2020; Furrer & Skinner, 2003; Pan et al., 2023). For instance, Furrer and Skinner (2003) found a positive correlation between feelings of relatedness—specifically a sense of belongingness and security within the learning environment—and engagement, which in turn predicted higher academic achievement. This suggests that fostering a sense of relatedness can serve as a motivational tool for promoting increased engagement.

The positive correlation between student autonomy and agentic engagement observed in this study resonates with prior investigations (e.g., Reeve & Shin, 2020). This alignment suggests that the collaborative nature of learning activities may contribute to this connection. Humans naturally desire social connections and support (Baumeister & Leary, 1995). Therefore, the social dimension of autonomy can be nurtured through interactions with peers and teachers. Smith (2008) emphasizes the interconnectedness of the social and individual aspects of autonomy, which evolve as learners develop greater independence. A supportive social environment, employing effective strategies, is essential for fostering this engagement among students.

5.1. Limitations of study

The relatively small sample size may also constrain the generalizability of our findings. Furthermore, the reliance on a single-center cohort limits the generalizability of the findings and introduces the potential for institutional bias in patient selection or management.

6. Conclusion

This study demonstrates a significant positive relationship between agentic engagement and psychological needs among Iranian EFL learners. The quantitative data revealed that as learners exhibited greater agentic engagement, their psychological needs also increased, suggesting that fostering such engagement can be beneficial for their overall motivation and satisfaction. Additionally, insights from semi-structured interviews reinforced these findings, with participants expressing a strong belief in the positive correlation between engagement practices and their psychological needs. These results underscore the importance of implementing engagement strategies in EFL contexts, highlighting the potential for enhancing learners' motivation and well-being. Future research could explore further dimensions of this relationship and the implications for teaching practices.

7. Author Contributions

M A: Conceptualization, the original draft writing, investigation, writing including reviewing and editing and investigation and formal analysis; S B: Conceptualization, supervision, and

project administration; D K: Conceptualization, the original draft writing, investigation; R R M: Conceptualization, supervision, and project administration

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9. Conflicts of Interest

There are no conflicts of interest.

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