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The Relationship of Aspects of Identity, Awareness of Brain-Friendly Instruction and Language Skills: A Correlational Study

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ABSTRACT

Objective: The main objective of this study is to explore the relationship between different aspects of identity, awareness of brain-friendly instruction (BFI), and language skills (Reading and Speaking) among Iranian psychology students.

Methods: The study included 100 male and female students aged 18 to 30, who were attending English classes. To assess the various aspects of identity in psychology students, the researchers utilized the fourth version of Aspects of Identity Questionnaire (AIQ-IV) (Cheek, Smith, and Tropp, 2002). This questionnaire consists of 45 items, measuring five aspects of identity: Personal (10 items), relational identity (10 items), social identity (7 items), collective (8 items), and special items (10 items). Additionally, the researchers assessed the awareness of brain-friendly instruction using Brain-Friendly Teaching Inventory developed by Sattari Gavareshk & Tabatabaee-Yazdi (2021). After completing the questionnaires, the participants were scheduled for reading and speaking tests.

Results: 2021). After completing the questionnaires, the participants were scheduled for reading and speaking tests. The study's findings revealed that social identity and motivation (a component of awareness of brain-friendly instructions) were the most significant predictors of psychology students' speaking performance. Furthermore, motivation and personal identity were identified as the strongest predictors of reading performance among psychology students.

Conclusions: These findings hold significant implications for language teachers and individuals planning to take preparation courses for the IELTS examination.

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Introduction

The evidence from diverse fields is increasingly pointing towards a strong link between language learning and the process of constructing one's identity (Cervatiuc, 2009; Harvey, 2017). This subject has been extensively studied, and numerous scholars now view language learning and identity as deeply intertwined and inseparable. Norton and Toohey (2011) highlight that the current fascination with identity in language learning has emerged due to a shift in emphasis from the psycholinguistic facets of language acquisition to exploring the sociological and anthropological aspects of the process. Two distinct paradigms exist regarding identity. The Western monoculture's cognitive view examines individuals as independent, autonomous, and self-contained entities. On the other hand, constructivism posits that human identity is a combination of cognitive or individualistic elements and social influences (Kouhpaeenejad & Gholaminejad, 2014). Identity orientations pertain to the varying significance that individuals assign to different identity attributes or characteristics while forming their self-definitions (Cheek, 1989).

Identity is a complex and multifaceted concept that profoundly influences an individual's self-perception. It encompasses a wide array of aspects and dimensions that collectively contribute to shaping a person's identity. Scholars and researchers have extensively explored these diverse facets of identity to gain a comprehensive understanding of how individuals perceive themselves and their position in society (Sharma et al., 2020).

One notable model for comprehending the various aspects of identity is proposed by Cheek (1989), who introduces the concept of "identity orientations." These orientations refer to the relative importance individuals assign to different identity attributes or characteristics when constructing their self-definitions. These attributes may encompass personal traits, relational identity, social roles, collective affiliations, and unique traits that set individuals apart from others. Personal identity pertains to how individuals view themselves as distinct and autonomous, embracing their unique traits, abilities, and preferences. It involves understanding one's individuality and self-worth based on personal achievements and values.

Relational identity focuses on how individuals define themselves in relation to others, be it family members, friends, or significant others. It involves understanding oneself through interpersonal connections and the roles one assumes in various relationships (Smith et al., 2014). Social identity involves the identification with larger social groups, such as nationality, ethnicity, race, religion,

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or gender. It entails viewing oneself as part of a broader collective with shared characteristics and experiences. Collective identity relates to identifying with specific communities or organizations, such as political groups, sports teams, or cultural movements. It involves aligning oneself with a particular group and adopting its values, beliefs, and goals (Islam, 2014).

Additionally, "special items" in identity orientations may refer to unique aspects that hold deep personal significance to an individual, which may not fit neatly into predefined categories of personal, relational, social, or collective identity. Understanding these diverse aspects of identity is crucial for comprehending how individuals develop their self-concept and interact with others in various social contexts. The intricate interplay of these identity dimensions shapes an individual's perception of themselves and their role in the broader social milieu (Cheek, 1989).

In recent times, researchers in the fields of Second Language Acquisition (SLA) and Applied Linguistics have directed their attention towards investigating the connection between language learning and an individual's sense of self. This perspective, known as the sociocultural perspective, has sparked numerous studies that explore how different aspects of identity influence language learning within diverse educational contexts. While some findings have been subject to debate, researchers have observed certain associations between identity and language learning (Barcelos, 2015; Norton, 2016).

For example, in their study, Cheek and Busch (1982) revealed a positive correlation between social identity and public self-consciousness, sociability, institutional and altruistic selves. Conversely, personal identity was found to be associated with private self-consciousness, the need for uniqueness, and an achievement-oriented self. Cervatiuc (2009) investigated the process of linguistic and cultural identity formation among adult immigrants in Canada who perceive themselves as professionally successful and highly proficient in the target language (English). The study aimed to understand the characteristics of "good language learners" by examining how they navigated their marginalized status in Canadian society to achieve success in their careers and language proficiency. Through interviews with 20 practicing professionals who immigrated as adults, the study sheds light on how these adult immigrants effectively constructed their linguistic and cultural identities, paving the way for their professional success and language proficiency in their adopted country. Penner and Wymer (1983) found that personal identity was more strongly

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linked to private self-consciousness, while social identity demonstrated a closer relationship with self-monitoring.

Identity is a dynamic and fluid construct, continuously shaped by our self-understanding and experiences. Language plays a crucial role in this process, as it is through language that we construct our sense of self (Noels et al., 2020). Our identities consist of multiple, often conflicting aspects that are influenced by cultural and social contexts, formed through our engagement in socially and culturally constructed worlds. Two theories that support this perspective are social identity theory and cross-cultural theory. Leibowitz (2015) conducted research focusing on higher education institutions and found that language, both as proficiency in the dominant medium of communication and as discourse, plays a vital role in shaping individuals' identities within the academic community. Interviews with lecturers and students revealed that language and discourse are significant factors affecting individuals' adaptation and inclusion in this setting.

Razmjoo and Neissi (2010) explored the relationships between normative and informational communication styles and language proficiency, including its subscales: grammar, vocabulary, and reading. The findings indicated positive and significant correlations between normative and informational styles and language proficiency and its subscales. On the other hand, a negative association was observed between the diffuse-avoidant communication style and language proficiency, as well as its subscales: grammar, vocabulary, and reading. Additionally, the study revealed significant sex differences in the diffuse-avoidant communication style and vocabulary.

Rashidi and Mansurian (2015) in their study on identity and language achievement in Iranian academic contexts, the researchers administered the aspects of identity questionnaire, specifically the fourth version of Cheek, Smith, and Tropp's (2002) scale (AIQ-IV), along with a language achievement test consisting of 70 items. The language achievement test comprised 10 listening comprehension questions, 30 vocabulary and expressions questions, 20 grammar questions, and 10 reading comprehension questions. Unexpectedly, the findings of the study revealed no significant relationship between the aspects of identity as measured by the AIQ-IV questionnaire and the components of the language achievement test. In other words, the researchers did not find any evidence to suggest that students' identities had an impact on their language proficiency, as measured by the various components of the achievement test.

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Brain-friendly instruction, also known as brain-compatible teaching or brain-based learning, is an approach to education that takes into consideration the principles of neuroscience and how the brain learns best (El-Henawy, 2020). It seeks to align teaching methods with the brain's natural processes, optimizing the learning experience for students. This educational approach recognizes that the brain is not a passive receptacle of information but an active and dynamic organ capable of making connections, forming new neural pathways, and adapting to new experiences (Rueckert et al., 2020). Traditional education often follows rigid teaching methods that may not always align with the brain's natural learning mechanisms. Brain-friendly instruction, on the other hand, aims to create a learning environment that maximizes the brain's potential for retention, understanding, and application of knowledge. By incorporating strategies that support how the brain processes information, educators can foster more engaged, motivated, and successful learners (Panteeva, 2015).

In this approach, educators use a variety of techniques and principles informed by neuroscientific research. These may include incorporating movement and physical activity into lessons, providing opportunities for meaningful and relevant learning experiences, utilizing multisensory approaches to engage different senses, and encouraging active participation and collaboration among students. The goal is to promote deeper understanding, critical thinking, and long-term retention of the material (Rueckert et al., 2020). As our understanding of the brain and learning continues to advance, brain-friendly instruction provides valuable insights for educators seeking to enhance their teaching practices and create optimal learning environments. By aligning teaching methods with how the brain naturally learns, brain-friendly instruction has the potential to revolutionize education and empower students to reach their full cognitive potential.

Sattari Gavareshk and Tabatabaee-Yazdi (2022) stated that brain functions, and teachers use this knowledge to enhance their classroom practices. Sousa (2015) expanded on this idea, explaining that brain-friendly instruction involves employing strategies that are aligned with the brain's natural processes and are informed by neuroscience. Winarso and Karimah (2017) echoed these sentiments, stating that brain-friendly teaching draws on neuroscience research to create an environment that optimizes learners' thinking and learning capabilities. This is achieved by prioritizing a conducive physiological state that enables efficient, seamless, and rational brain functioning.

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Ghanbari et al. (2019) proposed that brain-friendly teaching encompasses techniques and strategies that motivate learners to reach their full potential and excel academically. Saleh (2012) examined the effectiveness of the Brain-Based Teaching Approach (BBTA) in addressing conceptual understanding challenges of Form Four students in secondary science schools, specifically in the domain of Newtonian physics. The results demonstrated that the BBTA proved to be highly effective in addressing the aforementioned conceptual understanding issues. Upon analyzing the data, it was evident that students who received physics education using the BBTA exhibited a significantly improved conceptual understanding of Newtonian physics compared to their counterparts who were taught using conventional teaching methods. Furthermore, the students exposed to the BBTA also displayed higher levels of motivation in the subject of physics. These findings indicate that the BBTA holds great promise as a teaching method to enhance conceptual comprehension and learning motivation in the field of physics. By capitalizing on the brain's natural processes and incorporating neuroscience insights into teaching practices, the BBTA appears to offer a more effective and engaging approach to teaching complex scientific concepts.

To assess awareness of brain-friendly instruction, Sattari Gavareshk and Tabatabaee-Yazdi (2022) developed a scale consisting of three constructs and 54 items. The constructs include Assessment (items 1-12), Motivation (items 13-30), and Instruction (items 31-54). Overall, brain-friendly instruction emerges as a promising approach that aligns teaching practices with the brain's natural functioning, fostering an optimal learning experience for students. By integrating neuroscience insights into education, educators can create engaging and effective learning environments that support students' cognitive development and academic achievements.

Based on this, the present study aims to explore the relationships among aspects of identity, Brain-Friendly Instruction (BFI), and language skills (reading and speaking) among Iranian psychology language learners preparing for the IELTS exam. This investigation is of particular significance due to the importance of identity and language components on one hand, and the potential influence of motivation, instruction, and assessment - the three constructs of BFI - on language skill attainment on the other.

As far as the researchers are aware, few or no studies have yet examined whether these three constructs are related in the academic context of Iran. Therefore, the primary objective of this

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study is to uncover the extent of the relationship between aspects of identity, BFI, and language skills (reading and speaking) in this specific setting.

The second objective of the study is to identify which aspects of identity and BFI can best predict the speaking skill performance of Psychology students taking the IELTS exam. Similarly, the third aim is to ascertain which aspects of identity and BFI are the most influential predictors of the reading skill performance of these students. To address these research objectives, the following research questions have been formulated:

1. Which aspect of identity and brain-friendly instruction can be considered as the best predictors of IELTS speaking performance among Psychology students?
2. Which aspect of identity and brain-friendly instruction can be considered as the best predictors of IELTS reading performance among Psychology students?

By exploring these questions, the study endeavors to shed light on the interplay between identity, BFI, and language skills in the context of Iranian psychology language learners preparing for the IELTS exam. The findings may have significant implications for language teaching and learning strategies in this academic setting.

Materials and Methods

The present study employed a correlational research design to explore the relationships between aspects of identity, awareness of brain-friendly instruction, and language skills (speaking and reading) among Iranian psychology language learners preparing for the IELTS exam. The participants of this study were selected randomly from among psychology students of Islamic Azad University of Bandar Abbas as well as Hormozgan University who wanted to take the IELTS examination. They consisted of 100 male and female students between 18 to 30 years of age who attended English classes where emphasis was put on learning the four skills in order to prepare for the IELTS exam. They were informed that the data obtained from them during the study would remain anonymous and there would be no report of their personal information. Ethical guidelines were followed throughout the study. Informed consent was obtained from all participants, ensuring that they were aware of the study's purpose and their voluntary participation. Participants'

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anonymity and confidentiality were maintained during data collection and analysis. The study was also approved by the Institutional Review Board to ensure ethical compliance.

Instruments

The instruments used in this study include: a) aspects of identity questionnaire, B) BFI questionnaire and C) An IELTS test (speaking and reading sections). To identify aspects of identity among psychology students, the fourth version of identity questionnaire (Cheek et al., 2002) was employed. It consists of 45 items which measure five aspects of identity: Personal (10 items) , relational identity(10 items), social identity(7 items), collective (8 items) and special items (10 items). The special identity was not scored in the present study because there was not report of its relationship with language skills in literature. The validity of the scale was approved of by Jowkar and Latifian (2006) cited by Mehri et al. (2011). In addition, Rashidi and Mansurian (2015) reported the reliability index of 0.79 for all the items of the questionnaire. In the present study, the reliability of this scale was obtained to be 0.79 using Cronbach's alpha coefficient.

In addition, Awareness of brain-friendly instructions was also assessed through a scale developed by Sattari Gavareshk and Tabatabaee-Yazdi (2022). The scale has three constructs and 54 items. The constructs include Assessment (items 1-12), Motivation (items 13- 30), and Instruction (items 31-54). Its reliability was reported as .79 by Sattari Gavareshk and Tabatabaee-Yazdi (2022) and Rash Model showed item fit indices which account for internal validity of the scale. In this study, the Cronbach's alpha coefficient yielded a reliability score of 0.79 for the scale.

In order for the reading ability of the candidates to be tested, a mock test of IELTS Reading was used. The test included 3 sections and the participants had 60 minutes to answer 40 questions. The total length of the passages varies from 2150 to 2750 words. To measure the speaking ability of psychology students, a Mock test of IELTS Speaking was used. The test included three sections which lasted around 11 to 14 minutes for each candidate. In section 1, general questions about the test takers' home, family, studies and interest were posed. In the second section, a cue card was given to the test takers and they were required to prepare for 1 minute before they were allowed to speak for 2-3 minutes. In the third section, further questions pertinent to the second part were posed and participants were allowed to freely discuss their ideas on the topic.

Research procedure: After randomly choosing 100 psychology students from a pool of 150 ones recognized upper-intermediate according to PET test from among those who were currently doing

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their psychology studies at Islamic Azad University of Bandar Abbas and Hormozgan University, they were invited to participate in the study. Two questionnaires (Aspects of identity & BFI) were given to them in a random order to avoid order effects in the data. After the completion of the questionnaires, they were assigned a date at which participants took the reading and speaking tests. The reading test lasted 60 minutes and participants read three long texts of IELTS and answered 40 questions. Then, a rater corrected the answer sheets according to the answer key. After a break of an hour, participants were invited to take the speaking test of IELTS. The Mock test had 3 sections. In the introduction section, participants were asked general questions about home, work and their interests. It took about 4-5 minutes. In the second part, participants were given a card they were supposed to speak about its topic for about 2-3 minutes after having 1 minute to think about it. In the third section, called two-way discussion, participants were asked further questions related to the previous section and they were allowed to discuss it for about 4-5 minutes. It is worth mentioning the participants' voices were recorded for further scrutiny and analysis by an independent rater to ensure the inter-rater agreement regarding the speaking score each participant was given. A trained examiner who posed the questions also assigned a score for each participant. Due to the fact that 100 participants took part in the study, the speaking test was held in 4 consecutive days and participants were rated according to the IELTS speaking rubric. The rubric comprises 4 criteria, Fluency and coherence, lexical resource, grammatical range and accuracy, and pronunciation, according to which the candidates were given a band score between 0 to 9.

Data Analysis: The collected data were subjected to statistical analysis to determine the relationships between the variables. Multiple regression analysis was conducted to identify which aspects of identity and awareness of brain-friendly instruction significantly predict participants' speaking and reading performance. This analysis helps determine the relative contributions of different variables to the outcome variables (speaking and reading skills).

Results

Table 1 presents the results of descriptive statistics obtained from the data analysis. The table provides a comprehensive overview of the key characteristics and central tendencies of the variables under investigation. For the variable "Aspect of Identity," the mean and standard deviation values reveal the average level of each identity aspect and the extent of variability among

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the participants. Similarly, for the variable "Awareness of Brain-Friendly Instruction," the descriptive statistics shed light on the overall level of awareness and the degree of dispersion in participants' responses. Furthermore, the descriptive statistics for language skills (speaking and reading) highlight the mean scores, offering insights into the participants' performance levels in these domains. Also, the results of the Kolmogorov-Smirnov (K-S) test indicated that the data distributions were found to be normal.

Table 1. The results of descriptive statistics of study variables

Variables	Mean	SD	K-S	p
Speaking performance	3.586	0.252	0.060	0.074
Reading performance	3.720	0.288	0.052	0.097
Assessment	3.806	0.288	0.059	0.08
Motivation	3.856	0.292	0.042	0.136
Instruction	3.929	0.295	0.049	0.115
Personal	3.262	0.302	0.048	0.131
Social	3.088	0.287	0.055	0.081
Collective	3.500	0.297	0.058	0.079
Relational	3.497	0.302	0.044	0.133

In order to find out which aspect of identity and brain-friendly instruction best predict the performance of Psychology students in terms of IELTS speaking and reading, Standard Multiple Regression was run alongside its preliminary assumptions as follows.

Table 2. Regression results of speaking performance prediction based on aspects of identity and brain-friendly instruction

Variables	Beta	T value	p	R	R^2	Adjusted R^2	F value	p
(Constant)	-	2.657	.009	0.757	0.574	0.541	17.67	0.001
Assessment	.283	4.023	.000					
Motivation	.368	5.345	.000					
Instruction	.185	2.677	.009					
Personal	-.003	-.049	.961					
Social	.628	8.820	.000					
Collective	.227	3.237	.002					
Relational	.040	.566	.573					

As Table 2 indicates, 57 percent of the variance in the dependent variable(speaking) is explained by the model. As it can be seen in Table 1, a standard multiple regressions were conducted to find out whether aspects of identity and brain-friendly instruction predict speaking performance of

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Psychology students. The results indicated that among the components of brain-friendly instruction, motivation (.368) has the highest contribution in predicting the speaking performance of Psychology students. Social identity (.495) was also found as the best predictor of identity component. Therefore, social identity and motivation are among the strongest predicators of speaking performance of psychology students.

Table 3. Regression results of reading performance prediction based on aspects of identity and brain-friendly instruction

Variables	Beta	T value	p	R	R^2	Adjusted R^2	F value	p
(Constant)	-	2.785	.006	0.820	0.672	0.647	26.97	0.001
Assessment	.162	2.618	.010					
Motivation	.207	3.436	.001					
Instruction	.145	2.398	.019					
Personal	.570	9.412	.000					
Social	.142	2.268	.026					
Collective	.545	8.860	.000					
Relational	.050	.810	.420					

As it can be understood from Table 3, 67 percent of the changes in the reading can be predicted by components of identity and brain-friendly instruction. As Table 3 indicates, overall, although components of brain-friendly instruction are significant in predicting the reading performance of psychology students, motivation has the highest contribution. Regarding identity factors, the magnitude of personal and collective identities is respectively predictive, but relational identity is found insignificant.

Discussion

The findings of this study provide valuable insights into the relationships between aspects of identity, Brain-Friendly Instruction (BFI), and language skills among Iranian psychology students preparing for international examinations. The significant predictors identified in this study shed light on the factors that influence students' speaking performance. Firstly, the study found that social identity and motivation were strong predictors of students' speaking performance. The positive correlation between social identity and speaking ability suggests that how students perceive themselves within their social context may impact their confidence and willingness to

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engage in spoken communication. This aligns with previous research highlighting the role of social identity in language learning and communication skills (Salehpour & Roohani, 2020).

Moreover, the link between motivation and speaking performance reinforces the notion that motivation plays a crucial role in language learning success. When students are highly motivated, they are more likely to actively participate in speaking activities, practice language skills, and take risks in communication, all of which contribute to improved speaking proficiency (Ghanbari et al., 2019). This finding highlights the importance of fostering a supportive and motivating learning environment to enhance students' language learning outcomes.

Interestingly, the study also contradicted previous research findings regarding social identity and speaking performance (Rashidi & Mansurian, 2015; Razmjoo & Neissi, 2010). The discrepancy might be attributed to differences in the sample population and the meticulous implementation of the speaking test in this study, which ensured the accuracy and reliability of the results. Regarding reading performance, the study identified motivation and personal identity as the strongest predictors. The positive correlation between motivation and reading performance is consistent with existing literature that emphasizes the role of motivation in promoting reading habits and comprehension skills (Ahmadi et al., 2013). Motivated students are more likely to engage in extensive reading, which helps expand their vocabulary, improve their reading fluency, and enhance their overall reading proficiency.

Additionally, the association between personal identity and reading achievement suggests that individuals who have a strong sense of self and a clear understanding of their personal identity may be more committed to investing time and effort in reading. Personal identity, which shapes an individual's perception of themselves as distinct and unique, may drive students to pursue academic success and excel in their language skills.

Overall, the findings of this study underscore the intricate interplay between identity, BFI, and language skills in the context of Iranian psychology students preparing for international examinations. The significant predictors identified here emphasize the importance of addressing students' motivational factors, social identity, and personal identity in language learning programs. Educators and language instructors can use this knowledge to design more effective teaching approaches that foster a positive learning environment and enhance language learning outcomes.

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However, the study is limited by its sample size and specific context, warranting further research with a larger and more diverse population to replicate and generalize the findings.

The implications of these findings suggest that, prior to designing preparation courses for reading and speaking, educators should assess students' aspects of identity and group them accordingly. Continuous motivation is crucial, regardless of students' proficiency levels, to encourage consistent reading habits throughout their lives. In reading classes, attention to BFI components, especially instruction and motivation, can ensure students remain motivated and engaged. Although the study focused on psychology students from specific universities, future research with a larger and more diverse sample could replicate and generalize the findings beyond the current context.

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 ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection and analysis. All authors contributed to the article and approved the submitted version.

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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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