**Exploring the Correlation among Emotional Intelligence, Language Proficiency, and Learner Engagement in ESP Classrooms**

**Abstract**

This study explores the intricate relationship between emotional intelligence (EI) and language proficiency among ESP learners, focusing on their engagement and motivation in language learning activities. Adopting a quantitative research design, the study examined how EI impacts learners' English language proficiency and engagement in ESP contexts. The participants were 80 ESP university learners who were enrolled in specialized language courses. Data collection tools involved a standardized English language proficiency exam, the Bar-On Emotional Quotient Inventory, and an engagement measurement scale. The study used the Emotional Quotient Inventory to assess emotional intelligence levels, correlating them with English language learning proficiency and learning engagement. The results revealed a significant positive correlation between EI and language proficiency, particularly in the learners who demonstrated higher emotional intelligence levels. Statistical analyses, including Pearson correlation and regression techniques, highlighted that key EI dimensions such as self-awareness and empathy played critical roles in fostering academic success and classroom engagement. The findings underscore the importance of integrating EI-focused strategies in ESP curricula to enhance language skills and learners' overall motivation and active participation. This study offers valuable insights for educators, curriculum developers, and policymakers, emphasizing the transformative role of EI in shaping effective ESP learning environments.

**Key Words:** correlation; emotional intelligence; English language proficiency; education; ESP

1. **Introduction**

Emotional Intelligence (EI), a concept popularized by Daniel Goleman, refers to the ability to recognize, understand, and manage emotions, influencing cognitive and social development. It is crucial in various life domains, including education. Unlike traditional measures of intelligence, EI encompasses a range of emotional and interpersonal skills that contribute to success in various life domains, including education. EI is particularly important in English for Specific Purposes classrooms, as it helps students manage stress, improve motivation, and overcome emotional challenges like anxiety and low confidence (Hu & Chen, 2022).

EFL learning presents unique challenges beyond the cognitive demands of mastering grammar, vocabulary, and pronunciation. Learners often face psychological and emotional barriers, such as language anxiety, cultural differences, and fear of making mistakes, which can significantly affect their academic success (Li & Wei, 2023). Emotional intelligence is pivotal in addressing these challenges by helping learners manage their emotional responses and build resilience. Research indicates that students with higher levels of EI can better cope with these emotional difficulties, leading to enhanced focus, motivation, and persistence in language learning (H. Wang et al., 2023). Consequently, integrating emotional intelligence in the EFL learning environment is seen as a critical component in improving language proficiency and academic outcomes (Li, 2020).

Despite the growing recognition of emotional intelligence (EI) as a valuable predictor of success in educational settings, its specific impact on English as a Foreign Language (EFL) learners' academic performance remains underexplored (C. Zhang, 2023). Traditional approaches to language education often emphasize cognitive skills such as memorization, grammar, and reading comprehension, neglecting the fact that many students struggle to progress due to emotional and psychological challenges that hinder their learning (Ali et al., 2024) & Kostić-Bobanović, 2020(Kostić-Bobanović, 2020). These challenges—ranging from language anxiety and low self-efficacy to motivation deficits—create obstacles that cognitive-focused instruction alone cannot adequately address. Understanding the role of EI in overcoming these barriers is crucial for developing more effective EFL learning strategies that support students' emotional well-being and academic goals.

However, there remains a notable gap in research regarding how specific dimensions of EI, such as self-regulation, empathy, and self-awareness, directly influence language learning outcomes in ESP contexts (Alfaeni et al., 2022). Current studies broadly examine EI's general influence on academic achievement but seldom address its unique role in enhancing language acquisition in ESP classrooms (Thao et al., 2023; Yang & Duan, 2023). This gap indicates a need for more targeted research that examines the correlation between EI and ESP learners' academic performance and how emotional intelligence can be nurtured to support learners in overcoming the social and emotional challenges unique to language learning. Addressing these gaps can provide ESP educators with critical insights into how EI-focused interventions may improve students' engagement, resilience, and, ultimately, their language proficiency.

The growing emphasis on Emotional Intelligence (EI) as a critical determinant of success in language learning has sparked interest in its broader impact beyond linguistic proficiency. In ESP education, the role of EI in fostering motivation and engagement becomes increasingly significant. Unlike traditional EFL classrooms, ESP settings demand tailored learning approaches that align with learners’ professional or academic needs, making their emotional and motivational engagement crucial for achieving desired outcomes. As prior studies (e.g., (Chang & Tsai, 2022; Herasni et al., 2021; Y. Wang & Yang, 2024)) suggest, high levels of EI improve self-awareness and empathy and promote a deep commitment to learning tasks. Therefore, investigating how EI impacts ESP learners' motivation and engagement offers valuable insights for enhancing their active participation and sustained interest in language learning activities.

Within this context, the present research aims to investigate the correlation between emotional intelligence and language proficiency in ESP learners, aiming to understand better how emotional intelligence competencies can influence learners’ motivation, thereby leading to a more effective and enriching learning experience. Since emotional intelligence encompasses self-awareness, empathy, and self-regulation, this research explores how these dimensions contribute to learners' abilities to overcome common language-learning challenges, such as anxiety and self-doubt. Additionally, this study examines which EI dimensions, if any, play an influential role in enhancing EFL learners' language proficiency. By analyzing these aspects, this research aims to provide insight into the potential benefits of fostering EI development in ESP classrooms, offering practical implications for language instructors and curriculum designers interested in supporting student success through emotional skills training.

This research addresses critical questions regarding the relationship between emotional intelligence and language proficiency among ESP learners. By examining this link, the current research aims at answering the following research questions:

RQ.1. Which dimensions of EI have the most substantial impact on ESP learners' language proficiency?

RQ.2. To what extent does emotional intelligence impact ESP learners' engagement and motivation levels in language learning activities?

These questions are intended to uncover the overall relationship between EI and language learning success and highlight which specific emotional competencies most significantly contribute to students' progress.

1. **Literature Review**
   1. **English Language Proficiency in ESP Classrooms**

English language proficiency in ESP classrooms is essential for students aiming to gain specialized knowledge and skills in their fields. Unlike general English courses, ESP focuses on language use in specific contexts, such as engineering, medicine, and business, where mastery of field-specific vocabulary and terminology is crucial. Recent research highlights the unique linguistic demands in ESP classrooms, noting that students need functional language proficiency and the ability to communicate effectively within their professional domains (Muttaqin & Chuang, 2023). Consequently, ESP instructors must tailor their teaching approaches to meet these specialized linguistic requirements, often integrating real-world scenarios and technical content to enhance relevance and applicability (Costa & Mastellotto, 2022).

Moreover, and according to a study by (Dafouz Milne, 2021), enhancing language proficiency in ESP involves a dual focus on general language skills and technical language comprehension; students in ESP classrooms benefit from instructional methods that address both language fundamentals—such as grammar, listening, and speaking—and discipline-specific skills, including technical writing and reading comprehension. This integration enables students to acquire language proficiency that is both comprehensive and directly applicable to their career paths, improving not only their academic performance but also their confidence in professional communication. Consequently, ESP courses increasingly utilize collaborative activities, case studies, and problem-solving exercises to bridge general English skills with specialized language needs, aligning linguistic instruction with students' future professional demands (Ali et al., 2024).

Additionally, the role of language proficiency in ESP classrooms extends beyond academic success, impacting students' employability and career readiness. Research by (Roquet et al., 2022) demonstrated that graduates with strong ESP skills are more competitive in the global job market, as employers often prioritize candidates with the ability to communicate effectively in specialized fields. This finding underscores the importance of fostering high levels of English proficiency in ESP programs, especially as more professions require advanced English communication skills. In response, educational institutions increasingly prioritize ESP courses to equip students with both language proficiency and specialized knowledge, recognizing that this dual competency is critical for career advancement and professional success (Stan, 2022).

Developing non-cognitive skills, such as motivation and anxiety management, is increasingly recognized as crucial in specialized language learning, where learners face unique challenges related to subject-specific vocabulary and contexts (Xiao & Liao, 2023). According to (Dalia Abbas et al, 2023), motivation is a driving force that sustains students’ engagement and perseverance, even when confronted with complex language demands in fields like business or medicine. Motivation encourages students to set academic goals and take necessary steps toward achieving proficiency in specialized language, creating a cycle of goal-setting and achievement that fuels further learning (Liu et al., 2023). Additionally, learners with high motivation levels are better equipped to handle the repetitive practice needed to master language intricacies in English for Specific Purposes (ESP), highlighting motivation as a core non-cognitive skill linked to long-term language retention and application (Athena et al., 2023).

English for Specific Purposes (ESP) learners face unique challenges that stem mainly from the specialized nature of their language needs, which differ significantly from general English learning. (Orlando Sèna, 2022) explains that ESP learners must acquire language skills tailored to particular fields, such as medicine, engineering, or law, where specialized terminology, syntactical structures, and discourse conventions are essential. This requires students to master the vocabulary, language functions, and rhetorical patterns specific to their professional domains, which can be difficult for those without background knowledge. Furthermore, ESP learners often need to achieve a high level of proficiency within a short timeframe, intensifying the pressure to grasp complex language quickly. This combination of time constraints and field-specific language demands creates a distinctive challenge in ESP, making the learning process more demanding than that of general language programs (Iswati & Triastuti, 2021).

The relation between EI and English as a foreign language learning has gained a particular interest in recent researchers (Budak & Mede, 2022; Tingyu et al., 2024), whereby higher levels of emotional intelligence are proven to be positively related to EFL learners’ English language performance, foreign language anxiety and attitudes towards foreign language learning.

* 1. **Emotional Intelligence in Education**

Emotional Intelligence (EI) is a concept that refers to the ability to recognize, understand, manage, and effectively use emotions in oneself and others. Initially introduced by psychologists Peter Salovey and John Mayer in 1990 and later popularized by Daniel Goleman, EI is often described as an essential counterpart to cognitive intelligence (IQ) in predicting personal and professional success (Sánchez-Álvarez et al., 2020). In their study, (Herrera et al., 2020) mentioned that Salovey and Mayer identified four central components of EI: perceiving emotions accurately, using emotions to facilitate thinking, understanding emotions, and managing emotions. Goleman later expanded this model, adding components like self-regulation, motivation, empathy, and social skills, which help individuals navigate complex social interactions, achieve goals, and respond constructively to stressful situations. These elements make EI a vital asset in settings requiring high interpersonal engagement, including educational environments where collaboration and self-motivation are crucial (X. Wang, 2023).

Emotional intelligence has been shown to influence cognitive and non-cognitive outcomes in educational contexts. This suggests that students with higher EI are better equipped to handle academic challenges, interpersonal conflicts, and emotional stress (Chamizo-Nieto et al., 2021). For instance, (Forsberg et al., 2024) have demonstrated that students with high levels of EI are often more resilient, adaptable, and persistent, which are critical qualities for academic success. Furthermore, EI has been linked to enhanced communication skills, empathy, and social awareness, helping students build strong relationships with peers and instructors (Greenier et al., 2021). EI supports academic success and a more enriching and supportive learning environment by facilitating better emotional management and interpersonal effectiveness (MacCann et al., 2020). What makes emotional intelligence an essential area in fields like English for Specific Purposes (ESP), is the challenges encountered by ESP students including lack of motivation and lack of specialist knowledge (Bani & Soliha, 2024). EI, especially in language-focused fields like English for Specific Purposes (ESP), can help learners manage emotional challenges, enhance their interpersonal communication, and build resilience. Critical dimensions of EI include self-awareness, self-regulation, motivation, empathy, and social skills. These components contribute uniquely to an individual's ability to navigate academic and social demands (Paschal et al., 2024).

Self-awareness is widely regarded as the foundation of emotional intelligence. It refers to an individual's ability to recognize and understand their emotions and effects on thoughts and actions. (Kaugi, 2024) highlighted that self-awareness enables individuals to accurately assess their strengths and weaknesses, thus fostering a realistic self-image critical for personal and academic growth. (Bermejo-Martins et al., 2021) further elaborated that self-awareness helps learners better understand the triggers of their emotions, allowing them to respond rather than react impulsively, which is crucial in high-stakes environments like English for Specific Purposes (ESP). Consequently, fostering self-awareness in learners may contribute to improved emotional regulation and cognitive focus in specialized language learning.

Additionally, self-regulation complements self-awareness by helping individuals manage their emotions constructively. Research by Elkot and Ali (2020) demonstrates that students with strong self-regulation skills can handle stress more effectively, maintain motivation, and stay focused, even in challenging learning situations. Self-regulation is essential in ESP contexts, where learners may face high levels of anxiety related to complex language and subject-specific terminology (Šafranj et al., 2024). Moreover, self-regulation empowers students to set aside emotional disruptions and concentrate on their academic tasks, making it a valuable skill for sustaining productivity and perseverance (Szcześniak & Tułecka, 2020). When combined with self-awareness, this dimension helps ESP learners develop resilience, which is essential for maintaining a positive learning trajectory.

Moreover, motivation, empathy, and social skills round out the core dimensions of emotional intelligence by fostering both personal drive and effective interpersonal relationships. Motivation, as noted by (Izzatillayevna, 2023) encourages individuals to pursue goals with determination and resilience which ultimately can enhance language learning outcomes. On the other hand, empathy and social skills are essential for communication, collaboration, and cultural understanding in language-focused fields as students learn to navigate diverse perspectives (Qanwal & Ghani, 2023). In ESP contexts, where effective communication is vital, these social dimensions facilitate better engagement, peer support, and adaptability. Notably, as supported by (Kharbanda, 2023), these dimensions create a framework for achieving academic success by nurturing emotional competencies that aid in overcoming learning obstacles and enhancing interactions within a learning community.

* 1. **Emotional Intelligence and Language Learning**

In recent years, researchers have increasingly recognized the importance of emotional intelligence (EI) in language learning, specifically in contexts where learners face unique emotional and social challenges. Studies highlight that EI enables learners to manage anxiety, an emotion often heightened in language acquisition due to performance pressure and unfamiliarity with new linguistic structures (Ruba et al., 2022). By effectively regulating their emotions, learners with high EI can prevent anxiety from disrupting their focus, allowing them to engage more fully in language practice. Thus, EI stabilizes, helping learners overcome initial language learning anxieties and build confidence over time (Rogulska et al., 2023).

Moreover, emotional intelligence has been shown to bolster resilience and motivation, crucial for sustained success in language acquisition. (Bećirović, 2023) found that learners with higher EI scores were likelier to persevere, even in challenging second-language learning environments. This resilience fostered through emotional self-regulation and intrinsic motivation, encourages learners to view setbacks as part of the learning process rather than failures. Additionally, motivation is linked to EI because emotionally intelligent students are often more self-driven, enabling them to set personal learning goals and work consistently towards them, even when progress seems slow (Hermessi, 2023).

Additionally, the social dimensions of emotional intelligence—such as empathy and social skills—are precious in collaborative language learning environments. Learners who possess strong empathy are better equipped to understand the perspectives of their peers, enhancing cooperative learning and creating a positive classroom atmosphere (Z. Zhang et al., 2022). Social skills, another component of EI, allow students to actively engage with peers and instructors, promoting feedback exchange and opportunities for language practice. These social interactions are crucial in language acquisition as they provide authentic, interactive practice in a supportive environment (Lozano-Peña et al., 2021).

Recent studies indicate that EI is a multidimensional asset for language learners, aiding in cognitive and emotional aspects of language acquisition. Together, these findings suggest that EI enhances individual perseverance and fosters supportive social dynamics, both essential in achieving language proficiency. For educators and curriculum designers, these insights underscore the importance of integrating emotional intelligence into language programs, as doing so may yield positive outcomes in learner motivation, engagement, and language success.

Despite the growing body of research on emotional intelligence (EI) in educational settings, there remains a notable gap in literature addressing its role in contexts involving English for Specific Purposes (ESP). While numerous studies (e.g., (Pal & Choudhuri, 2024; Sánchez-Álvarez et al., 2020)) have examined the influence of EI on general academic performance and language acquisition, few have focused on specialized language programs where learners face unique emotional and cognitive challenges tied to discipline-specific language use. Moreover, most current research primarily addresses general English as a Foreign Language (EFL) learning environments, leaving a significant gap in understanding the unique demands of ESP learners who must develop proficiency within specific professional or academic fields. Consequently, more targeted research is needed to explore how EI can be effectively harnessed in ESP instruction, with potential implications for curriculum design, teaching strategies, and student support systems that address both the cognitive and emotional demands unique to ESP learning contexts.

* 1. **Emotional Intelligence and Learner Engagement**

Emotional intelligence has increasingly been recognized as a critical factor in fostering learner engagement, particularly within higher education. (Tang & He, 2023) highlighted the significant role of self-efficacy as a mediator between EI and motivation, emphasizing that students with higher emotional intelligence are better equipped to navigate academic challenges and maintain focus. This ability to regulate emotions positively impacts their willingness to actively participate in learning activities and persist in facing obstacles.

Furthermore, the connection between EI and social support has emerged as an essential dimension of learner engagement. (Mujidin et al., 2022) explored how emotionally intelligent students leverage social relationships to access support that enhances their academic experiences. This interconnectedness boosts students’ confidence and reduces stress, fostering a more engaged learning environment. Social support is particularly critical in challenging times, such as the COVID-19 pandemic, when engagement levels may otherwise decline.

Moreover, the relationship between emotional intelligence and academic engagement has been examined through multiple dimensions, offering nuanced insights. For instance, recent studies have highlighted the role of emotional intelligence in fostering behavioral and emotional engagement while reducing behavioral and emotional disaffection in learning environments. Emotional intelligence's influence on engagement levels is observed across various contexts, including undergraduate and professional education. This highlights its broad applicability in enhancing both academic and interpersonal learning outcomes (Y. Wang & Yang, 2024).

Lastly, (Al Jaberi et al., 2024) underscored the role of EI in enhancing intrinsic motivation and engagement through positive social interactions. Their research indicates that students with higher EI are more adept at forming supportive networks, contributing to sustained engagement and satisfaction in academic settings. This demonstrates the potential of integrating emotional intelligence training into educational practices to promote a more interactive and dynamic learning environment.

* 1. **Impact of EI on Motivation in Language Learning**

The relationship between emotional intelligence (EI) and motivation in language learning is increasingly recognized as critical. Emotional intelligence encompasses self-awareness, empathy, and self-regulation, which can enhance learners’ intrinsic motivation. Recent studies emphasize that learners with higher EI levels are better equipped to handle the challenges of language acquisition, demonstrating perseverance and enthusiasm in their studies. For instance, (Taherkhani & Moradi, 2022) highlight that emotional engagement positively predicts motivation, mediating between cognitive effort and academic success. These findings underscore the potential of integrating EI-focused strategies in language classrooms to foster sustained learner motivation.

Furthermore, motivation, particularly in second language acquisition, is intricately linked with learners’ emotional states. Emotional intelligence facilitates the development of positive attitudes toward learning, which is essential for maintaining engagement over time. For example, (Aljasir, 2024) noted that learners who can effectively manage emotions exhibit higher intrinsic and extrinsic motivation levels. Such motivation enables them to set achievable goals and persist, even when faced with setbacks. Incorporating EI development into language learning curricula could enhance both academic outcomes and learners’ overall confidence and satisfaction.

The role of EI in shaping language learning motivation is particularly significant in overcoming language anxiety and building resilience. (Thao et al., 2023) found out that students with high EI are less likely to experience negative emotions that hinder learning, such as fear or frustration. Instead, they are more likely to channel emotions constructively, fostering a positive learning environment. By promoting social skills and emotional regulation, educators can help learners build the psychological resources necessary to remain motivated in demanding language learning settings.

Finally, the intersection of emotional intelligence and motivation in language learning suggests practical applications for educational policy and curriculum design. Research by (Herut et al., 2024) demonstrated that EI training programs and language learning interventions significantly improve motivational outcomes. These findings advocate incorporating emotional intelligence assessments and activities into language programs to maximize learner engagement. As emotional and cognitive domains are increasingly recognized as intertwined, fostering EI in learners holds the promise of advancing motivation and language proficiency.

1. **Methodology**
   1. **Research Design**

This study employed a quantitative research approach with a correlational design to investigate the relationship between emotional intelligence (EI) and both English language proficiency and engagement among ESP learners. A correlational design is particularly suitable for this research, as it allows for examining potential associations between EI dimensions and levels (such as self-awareness, self-regulation, motivation, empathy, and social skills) in correlation with language proficiency and engagement without manipulating variables, thereby maintaining naturalistic conditions. This approach provides a statistical basis to determine the strength and direction of relationships, which is essential for understanding how EI may influence language learning outcomes within specialized contexts. By using validated EI and language proficiency assessments, the study aimed at generating reliable data that can reveal meaningful correlations and highlight EI dimensions that may be significant predictors of success in ESP contexts. Additionally, the authors aimed to evaluate EI's impact on learners’ engagement and motivation to perform well in language tasks, seeking to reveal whether emotionally intelligent learners exhibit sustained enthusiasm and goal-directed behavior in ESP contexts.

* 1. **Participants**

The participants in this study consist of ESP (English for Specific Purposes) learners enrolled in specialized language courses at a university level, focusing on disciplines such as healthcare discipline. A total of 80 students, aged 18 to 20, were selected using a stratified random sampling method to ensure diverse representation across different fields of study. They have a minimum intermediate level of English proficiency, which was verified by a standardized placement test conducted within their respective departments. Participants were categorized into two groups based on their emotional intelligence levels: those with higher emotional intelligence and those with lower emotional intelligence. This sample was chosen to reflect a range of academic backgrounds, thereby allowing for more comprehensive insights into the influence of emotional intelligence (EI) across various ESP contexts. By incorporating participants with varying levels of specialization and experience, the study aims to enhance the generalizability of its findings and provide meaningful implications for ESP instruction across multiple disciplines.

1. **Data Collection Instruments**
   1. ***Emotional Intelligence Scale***

To measure emotional intelligence (EI) in this study, the Bar-On Emotional Quotient Inventory (EQ-i) was selected (with some modifications from the author of this study). The scale is a comprehensive self-report measure that assesses core dimensions of EI (self-awareness, self-regulation, motivation, empathy, and social skills). Its reliability and validity have been widely recognized across diverse populations, making it suitable for academic studies examining EI in various contexts, including English for Specific Purposes (ESP).

The scale’s content validity was confirmed by consulting a panel of experts in educational psychology and language learning. The reliability of the scale was assessed using Cronbach's alpha coefficient to measure internal consistency. The overall reliability score for the scale was α = 0.87, indicating high reliability.

* 1. ***English language proficiency Test***

In this study, English language proficiency among ESP learners was measured using a standardized test designed to evaluate the four language skills. By employing a standardized instrument, the study ensured both its validity and reliability making it suitable for all EFL learners, including English for Specific Purposes (ESP) learners. Moreover, consistency and comparability in proficiency measurement across participants, enhancing the validity of the correlations drawn between emotional intelligence and language proficiency.

* 1. ***Student Engagement Instrument (SEI)***

The Student Engagement Instrument (SEI) is a widely recognized self-report tool for measuring cognitive and affective engagement in educational settings. Developed by Appleton et al. (2006), the SEI provides a comprehensive assessment of students’ perceptions regarding their engagement levels, focusing on critical domains such as teacher-student relationships, peer support, and the value of learning tasks. This instrument is particularly relevant for this study, as it aligns with the research objective of examining the relationship between emotional intelligence (EI) and learner engagement in ESP classrooms. By evaluating both emotional and cognitive dimensions of engagement, the SEI offers nuanced insights into how students’ emotional competencies, such as self-regulation and motivation, influence their involvement in learning activities. The reliability and validity of the SEI demonstrated in diverse educational contexts make it a suitable choice for capturing the multifaceted nature of engagement, especially in specialized language programs like ESP.

The scale’s content validity was confirmed by consulting a panel of experts in educational psychology and language learning. The reliability of the scale was assessed using Cronbach's alpha coefficient to measure internal consistency. The Cronbach’s alpha values for all dimensions exceed 0.80, indicating excellent internal consistency.

1. **Results and Discussion**

This study explored the relationship between Emotional Intelligence (EI) and both language proficiency and learning engagement among ESP learners. The aim is to analyze the potential correlations between the three variables, exploring how various EI dimensions might influence learners' proficiency and engagement in field-specific English skills. Through the Pearson correlation and regression analysis, the study evaluated the extent to which EI could predict language performance. Statistical findings offer insights into the direct relationships and predictive power of EI factors concerning language proficiency and engagement, thus contributing valuable data to the growing research on emotional competencies in specialized language learning contexts.

**To answer the first research question,** *Which dimensions of EI have the most substantial impact on ESP learners' language proficiency?*

The study participants were categorized into two groups based on the level of emotional intelligence, whereby Experimental group (1) exhibited low levels of EI and Experimental group (2) exhibited higher ones. Means of the study participants’ scores on the Emotional Intelligence Scale were calculated. Differences in the means of the study participants’ scores on the administration of the EI scale were calculated and tabulated. The mean language proficiency test score for the higher EI group stood at (85.2), while the lower EI group garnered a mean score of (78.1). The descriptive statistics represented in the arithmetic averages, standard deviations and T value, and the results of the descriptive statistics are as follows:

***Table 1: Comparison of Emotional Intelligence (EI) Dimensions Between Experimental group (1) and Experimental Group (2)***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Dimension | Group | N | Mean | Std. Deviation | Degrees of Freedom | t-value | Significance Level (p) |
| **Self-Awareness** | Experimental Gr. 1 | 40 | 3.10 | 0.75 | 78 | -3.45 | 0.001\*\* |
| Experimental Gr. 2 | 40 | 3.85 | 0.62 |
| **Self-Regulation** | Experimental Gr. 1 | 40 | 3.25 | 0.68 | 78 | -2.98 | 0.004\*\* |
| Experimental Gr. 2 | 40 | 3.80 | 0.59 |
| **Motivation** | Experimental Gr. 1 | 40 | 3.20 | 0.70 | 78 | -4.10 | 0.000\*\* |
| Experimental Gr. 2 | 40 | 4.00 | 0.58 |
| **Empathy** | Experimental Gr. 1 | 40 | 3.15 | 0.73 | 78 | -3.20 | 0.002\*\* |
| Experimental Gr. 2 | 40 | 3.85 | 0.61 |
| **Social Skills** | Experimental Gr. 1 | 40 | 3.05 | 0.74 | 78 | -3.65 | 0.001\*\* |
| Experimental Gr. 2 | 40 | 3.90 | 0.60 |

***Table 2: Comparative Analysis of Language Proficiency Scores between Experimental group (1) and Experimental group (2)***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Group | N | Mean | Std. Deviation | Degrees of Freedom | t-value | Significance Level (p) |
| Experimental Group 2 | 40 | 85.20 | 4.50 | 78 | 5.43 | 0.001 |
| Experimental Group 1 | 40 | 78.10 | 5.50 |

**The First EI Dimension: Self-Awareness**

Self-awareness emerged as a particularly influential EI dimension in this study, with the experimental group (2) demonstrating a notably higher mean score than the experimental group (1) (t-value = -3.45, p = 0.001). This finding suggests that self-awareness may be foundational in enhancing language learning, as it enables students to recognize their own strengths, weaknesses, and learning needs. For ESP learners, this awareness fosters a more reflective approach to language acquisition, allowing them to actively identify areas for improvement and adopt strategies that align with their specific goals and challenges. Consequently, nurturing self-awareness may equip learners with the insight necessary to adapt their language learning methods, ultimately facilitating greater proficiency and engagement with field-specific content.

**The Second EI Dimension: Self-Regulation**

Self-regulation emerged as another essential EI dimension that positively impacted language proficiency. In the current study, the experimental group (2) scored significantly higher in self-regulation than the experimental group (1) (t-value = -2.98, p = 0.004), underscoring its importance for managing the cognitive and emotional demands of language learning. Self-regulation, which involves managing one’s emotions, setting goals, and persisting through challenges, is particularly relevant for ESP learners who often face complex, specialized vocabulary and contexts. By practicing self-regulation, learners are better equipped to handle frustration and maintain focus, allowing them to make consistent progress in their language acquisition. This dimension supports learners in becoming more autonomous and resilient, qualities that are crucial for mastering a new language, especially one tailored to specific professional or academic fields. As such, developing self-regulation can enhance the effectiveness of ESP instruction by encouraging learners to adopt proactive and disciplined approaches to their studies.

**The EL Third Dimension: Motivation**

Motivation demonstrated the strongest effect, with the experimental group (2) achieving a notably higher mean score (Mean = 4.00, p < 0.001). This outcome highlights motivation’s central role in driving language proficiency among ESP learners. A motivated learner will likely invest more effort, persist through challenges, and actively seek language use opportunities, making motivation a pivotal dimension in the ESP learning process. The substantial difference in motivation scores between the groups indicates that interventions focusing on enhancing learners’ drive to succeed in language tasks can affect their overall proficiency. Therefore, prioritizing motivation-enhancing strategies in the ESP curriculum may yield significant improvements in language learning outcomes.

**The Fourth EL Dimension: Empathy**

While often overlooked in traditional language instruction, empathy plays a crucial role in developing communicative competence, especially within ESP contexts that require field-specific interaction and understanding. The significant mean difference in empathy scores between the study groups (t-value = -3.20, p = 0.002) suggested that students with higher empathy levels may better understand diverse perspectives and respond appropriately in communication. For ESP learners, empathy allows for deeper engagement with content by encouraging them to consider the cultural and contextual nuances of the language. This dimension can be particularly valuable in settings where learners must navigate professional scenarios, as empathy fosters a more receptive and adaptive approach to language use. By enhancing empathy, ESP programs can encourage students to relate more effectively to their audience, making their communication more nuanced and contextually appropriate.

**The Fifth EL Dimension: Social Skills**

Social skills also stood out as a significant EI dimension, with the experimental group (2) outperforming the experimental group (1) (t-value = -3.65, p = 0.001). This outcome highlighted the importance of social skills in ESP contexts, where communication and collaboration are often essential. Social solid skills empower learners to engage more meaningfully with peers, instructors, and professional materials, enhancing their capacity for practicing and applying language skills in real-world scenarios. These skills are critical for ESP students as they provide the interpersonal tools to navigate interactions and discussions effectively. Thus, integrating activities that develop social skills into ESP curricula could promote a communicative competence responsive to the unique demands of field-specific language use.

The results from **Table 1** emphasized the differential impact of Emotional Intelligence (EI) dimensions on ESP learners' language proficiency, with all dimensions demonstrating statistically significant improvements in the experimental group (2) compared to the experimental group (1). Among these, motivation recorded the highest mean difference (M = 4.00, SD = 0.58 for the experimental group (2) versus M = 3.20, SD = 0.70 for the experimental group (1), showcasing its pivotal role in driving language learning success. This finding aligns with Self-Determination Theory (Deci & Ryan, 2000), highlighting intrinsic motivation as a critical factor in sustained learning. By fostering a motivationally rich environment, EI-focused interventions likely gave learners a stronger drive to engage with ESP materials, overcoming challenges and persisting in their studies.

Additionally, self-awareness and self-regulation were found to play essential roles, as evidenced by their significantly higher scores in the experimental group (2). These findings correspond with Mayer and Salovey's (1997) model of EI, which suggests that self-awareness enables learners to identify their strengths and limitations, while self-regulation effectively manages stress and learning goals. In line with empirical studies, such as those by ((Alfaeni et al., 2022; Herut et al., 2024; Kharbanda, 2023), students with higher self-awareness and self-regulation perform better in academic and professional language tasks due to reduced anxiety and increased focus. Empathy and social skills also showed significant improvements, with t-values of -3.20 and -3.65, respectively, indicating their contribution to collaborative and communicative competencies in ESP contexts. These dimensions likely facilitated peer interactions and group activities, creating a more inclusive and supportive learning environment. Studies such as (g Ming Qing Miranda Ming Miaoxin Mingfeng De et al., 2022; Tavares, 2023) underline the importance of empathy in fostering effective communication, a cornerstone of ESP learning, as it enables learners to understand and adapt to diverse professional scenarios. Thus, integrating EI training fosters individual linguistic competence and enhances collective engagement, underscoring its comprehensive value in specialized language education. These results underscore the critical role of EI dimensions in shaping ESP learners' language proficiency, advocating for targeted interventions to address both affective and cognitive aspects of learning. The findings also highlight the transformative potential of incorporating EI into language instruction, equipping learners with the emotional and social tools necessary for academic and professional success.

**To answer the third research question,** *to what extent does emotional intelligence impact ESP learners' engagement and motivation levels in language learning activities?*

The SEI evaluated key aspects of engagement, including learners' emotional and cognitive involvement, emotional involvement and peer support. **Table 3** presents comparative engagement scores for the experimental groups, showcasing a clear outcome distinction. These findings underscore the role of emotional intelligence levels in fostering deeper engagement among learners.

***Table 3: Comparative Analysis of Student Engagement Instrument (SEI) between the Experimental Groups***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Group | N | Mean | Std. Deviation | Degrees of Freedom | t-value | Significance Level (p) |
| Experimental Group (2) | 40 | 82.3 | 4.2 | 78 | 6.87 | 0.001 |
| Experimental group (1) | 40 | 38.5 | 5.6 |

The mean engagement score for the experimental group (2) was 82.3, significantly higher than the experimental group (1) mean score which was 68.5. This difference was statistically significant, as evidenced by a t-value of 6.87 and a p-value of less than 0.001. These results indicated that the experimental group (2), that demonstrated higher levels of emotional intelligence, exhibited higher levels of emotional and cognitive engagement than their peers in the experimental group (1). Additionally, the experimental group (2) lower standard deviation (4.2) suggested greater consistency in engagement levels among participants, reflecting the positive effect by which the group’s learning engagement is significantly affected by the high level of emotional intelligence.

The above mentioned findings validate the principle that integrating EI strategies in ESP classrooms can lead to heightened emotional and cognitive involvement in learning activities. This is in line with the Self-Determination Theory (Deci & Ryan, 2000), which posited that fostering autonomy, competence, and relatedness can significantly enhance learners' intrinsic motivation and engagement.

From a theoretical perspective, the study's findings resonate with Vygotsky's Sociocultural Theory (1978), emphasizing the role of social interaction in learning. The higher engagement levels among the learners may stem from higher levels of EI components like empathy and social skills, which facilitate better peer collaboration and a positive classroom atmosphere. Empirical studies, such as those by (Tang & He, 2023b; H. Wang et al., 2023), support this notion, indicating that emotionally intelligent learners are better equipped to navigate group dynamics and engage meaningfully in shared learning experiences. The implications of these results are profound for ESP educators and curriculum designers. By addressing students' emotional and cognitive needs, EI interventions enhance academic outcomes and equip learners with the interpersonal skills necessary for real-world professional scenarios. As such, integrating emotional intelligence into ESP programs represents a transformative step toward holistic language education, bridging the gap between linguistic proficiency and emotional competence.

1. **Conclusion**

This study comprehensively explored the multifaceted relationships between emotional intelligence (EI) and ESP learners' language proficiency, engagement, and motivation. Through quantitative analysis and a robust experimental design, it was revealed that higher EI levels among ESP learners, the more positive impacts is given to the learners' language proficiency, engagement levels, and motivational dynamics. The findings underscore the pivotal role of EI in enhancing academic performance and the emotional and cognitive dimensions of learning, which are essential for achieving holistic educational outcomes in specialized language programs. Moreover, engagement levels measured via the Student Engagement Instrument (SEI) highlighted a marked difference between the experimental group (1)and experimental group (2), further confirming the efficacy of EI levels in fostering deeper emotional and cognitive involvement in language learning activities. Theoretical frameworks, such as Self-Determination and Sociocultural Theory, supported the findings, suggesting that EI facilitates intrinsic motivation, learner autonomy, and positive peer interactions. These theories align with the results, emphasizing that EI empowers learners to manage challenges, sustain focus, and actively participate in learning. Empirical evidence from recent literature corroborates these outcomes, advocating for the inclusion of EI-focused approaches to address the unique demands of ESP learning environments.

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