Emotional and motivational intelligence in Ethiopian high school learners' writing performance in relation to gender differences

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Abstract

In recent years, there has been increasing interest in the role of emotional and motivational intelligence in educational settings. Studies have shown that these factors can significantly impact students' academic performance. However, little attention has been given to the influence of emotional and motivational intelligence on writing performance, especially in relation to gender differences. This study aims to examine the relationship between emotional and motivational intelligence and writing performance among Ethiopian high school learners, while considering potential variations based on gender. To achieve this, a sample of 176 Ethiopian high school learners (69 male and 107 female, aged between 17 and 24) was selected using a stratified random sampling technique. The participants completed self-reported questionnaires to assess their emotional and motivational intelligence, and their writing performance was evaluated based on a set of predetermined writing rubrics. The collected data was analyzed using Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), Pearson's correlation coefficient, and path coefficients to determine any significant relationships or gender differences. The results showed a statistically significant relationship between emotional intelligence dimensions and writing performance. However, there was no statistically significant difference in writing performance and writing motivation based on gender. These findings provide valuable insights into the influence of emotional and motivational intelligence on writing performance among Ethiopian high school learners. Emotional intelligence, including the ability to understand and manage one's own and others' emotions, positively affected writing performance. This study contributes to the existing literature on the role of emotional and motivational intelligence in educational settings, specifically focusing on writing performance among Ethiopian high school learners. Overall, this research sheds light on the importance of considering emotional and motivational factors in educational practices to foster improved academic outcomes.

Keywords: Gender difference, Emotional intelligence, High school learners, Motivational intelligence, Writing performance

Introduction

The study of emotional intelligence (EI) in language classrooms is central to understanding the motivation for learning literacy patterns among students (Aritzeta et al., 2016; Linares et al., 2018; Sánchez-Álvarez et al., 2016). In academic contexts, self-perceived EI has been shown to be related to better psychological and social adjustment in adolescent high school students.It is also an integral component of the writing process and plays a key role not only in relation to learning but also with respect to achievement through writing process (Castillo et al., 2013; Gebremariam & Asgede, 2023; Sen et al., 2020; Sepideh et al., 2017; Smedt et al., 2018; Saud, 2019; Zysberg, 2018). Smedt et al. (2018) argue that investing in the social, mental, and emotional skills of high school students is crucial for their holistic growth, especially in their learning literacy. According to Ebrahimi et al. (2018) students are particularly vulnerable to leading stressful lives. While some are able to handle stress well and work towards their goals, others struggle to manage stress and end up experiencing physical and psychological symptoms; These symptoms, in turn, impact their writing abilities. The conceptual framework of EI involves being aware of one's emotions, using them to guide decisions, and effectively managing psychological trauma and mental disorders (Simba et al., 2016).

In recent times, the collective construct of group EI has been widely used and discussed in the field of psychology and other fields of education (e.g., Ackley, 2016; Lara & Forsman, 2023; Ebrahimi et al., 2018; Sánchez-Álvarez et al., 2016; Waiswa et al., 2020) as a fundamental source of variability within individual and group behavior and learning (Kant, 2019; Suleman et al., 2019). Studies on EI have been conducted worldwide (Díaz-Herrero et al., 2018; Goleman, 1995; Karimi et al., 2020; Meshkat & Nejati, 2017). According to Ebrahimi et al. (2018), EI is the capacity to use emotions and effectively communicate one's decision-making abilities. In their research on writing abilities and vocabulary learning, they argue that writing is an inadequate process without emotion. They suggest that incorporating EI into classroom performance can improve the process and results of writing achievement. However, in the context of this study, there is limited research, and further exploration is needed to reveal the impact of EI on writing classrooms. Specifically in relation to gender differences The measures used in previous studies have been developed to measure the intact collective groups that do not meet the specific needs of classroom writing (Aritzeta et al., 2016; Goleman, 1998; Kant, 2019). Therefore, further research is needed in this field due to address these existing gaps. For example, Mayer et al. (2008) studied the importance of examining EI levels in relation to academic performance and found to confirmed there is no any correlation between EI and classroom perdormance of university students. Although their studies partially overlapped with other topics, their main focus was on general learning performance university (Khatoon et al., 2020; Stevens & Hamann, 2012).

Therefore, there is a lack of studies on emotional intelligence (EI) in writing classrooms for Ethiopian high school students, and it is necessary to conduct research in this area. This study aims to fill this knowledge gap and contribute to the ongoing arguments in favor of including EI in writing classrooms to address learners' writing difficulties (Sahle et al., 2023; Socas, 2017). EI and motivation to write are essential for students' academic writing literacy (Okello & Aomo, 2018; Sahle et al., 2023), yet there is limited data available on the Ethiopian high school context. Thus, this study aims to assess EI

within writing classrooms in terms of levels of EI and writing motivation in high school learners' writing performance, specifically focusing on gender differences among Ethiopian high school students. This will provide educational researchers and school teachers with a better understanding of this group of participants and the opportunities associated with them in Ethiopia.

The research questions for this study are as follows:

What do Ethiopian high school learners perceive about EI and writing motivation in writing performance?

To what extent are high school learners' EI and writing motivation in writing performance correlated?

To what extent does gender difference impact the EI and motivation to write of high school learners?

Theoretical and conceptual frameworks

Several studies have linked EI and writing skills (Nwadinigwe & Azuka-Obieke, 2012; Ranjbar et al., 2017; Suleman et al., 2019). Additionally, researchers have found that emotionally intelligent students, who exhibit lower levels of depression, anxiety, and somatic complaints, also have better psychological well-being (Fiori & Vesely-Maillefer, 2019; Halimi et al., 2021; Linares et al., 2018; Nyarko et al., 2020; Salovey et al., 2003). Some studies suggest that the emic and etic perspectives are two elements of EI that aid in interpersonal interactions. Sundararajan and Gopichandran (2018) explain that the emic perspective helps individuals understand and manage their own emotions; while the etic perspective helps individuals connect with, empathize with, and respond to the emotions of others. According to Salovey et al. (2002), define EI as to the ability to recognize, access, generate, comprehend, and regulate emotions introspectively in this study. EI is defined as individual's ability to understand their own emotions, the emotions of others, express their emotions, and control them.
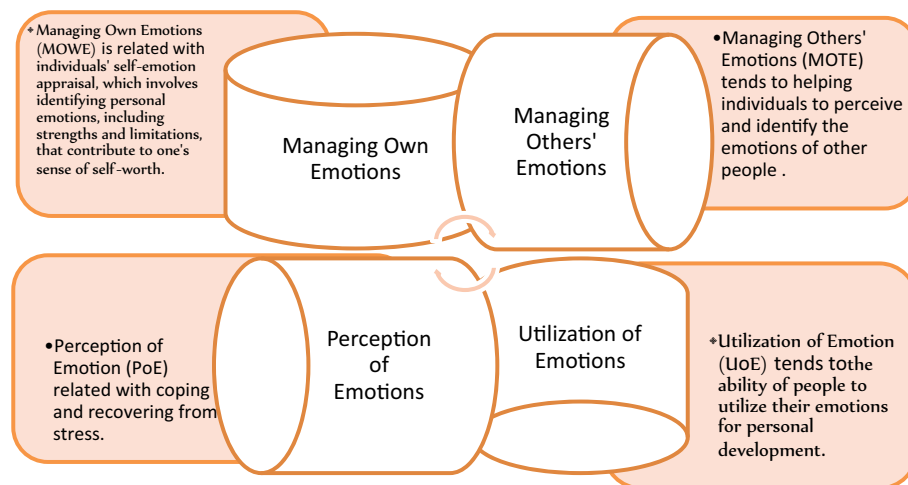
Emotional and motivational intelligence in writing performance

Scholars with a socio-cultural perspective on writing (e.g., Zimmerman & Risemberg, 1996) argue that the writing motivation requires effort and attention. Students also explain that their writing motivation may be related to their personal abilities. It is crucial to correlate their personal abilities with their motivation for the development of their writing skills. Smedt, et al. (2018) explain that writing is a cognitive test and may be linked to intelligence. They further explain that students' motivation to write increases with personal effort. Motivation is the foundation fpr consistently performing any task. Students will lack writing motivation if they do not successed in writing skills. Which can lead to self-confidence issues (Goleman, 1995; Okello & Aomo, 2018; Sarkar and Banerjee, (2019). The evaluation of writing proficiency among secondary school students has included an examination of cognitive intelligence (Côté, 2017; Esmaeili et al., 2018; Pishghadam, 2009; Rad et al., 2014). Furthermore, studies have shown that non-cognitive factors, such as attitude, motivation, personality traits, self-regulation, resilience, and social and emotional skills, can also influence academic performance (Ali & Mohammed, 2020; Cachia et al., 2018;

Downey et al., 2008; Patel, 2017; Petrides et al., 2007; Simonet et al., 2021). Scholars who approach writing from an EI perspective, like Zimmerman and Risemberg (1996), argue that the motivation to write requires effort and attention.

Empirical studies have revealed that student populations around the world have varying levels of EI, with the EI model proposed by Reuven Bar-On (2004) and the theory proposed by Radu (2014) serving as their starting points. Salovey and Mayer (1990) defined EI as the ability to recognize and understand one's own and others' emotions, make distinctions between them, and use this knowledge to guide one's decisions and behavior (Nwadinigwe & Azuka-Obieke, 2012; Ranjbar et al., 2017; Suleman et al., 2019). Additionally, researchers have found that emotionally intelligent students, who exhibit lower levels of depression, anxiety, and somatic complaints, also have better psychological well-being (Fiori & Vesely-Maillefer, 2019; Linares et al., 2018; Nyarko et al., 2020; Salovey et al., 2003). Some studies suggest that the emic and etic perspectives are two elements of EI that aid in interpersonal interactions. According to Sundararajan and Gopichandran (2018), the emic perspective helps individuals understand and manage their own emotions; while the etic perspective helps individuals connect with, empathize with, and respond to the emotions of others. According to Salovey et al. (2002), EI refers to the ability to recognize access, generate, comprehend, and regulate emotions introspectively. This study defines EI as an individual's ability to understand their own emotions, the emotions of others, express their emotions, and control them (Buckley et al., 2020; Ranjbar et al., 2017). Additionally, EI involves the ability to recognize, access, and express emotions, as well as understand and regulate them through reflection (Abdolrezapour, 2013; Ackley, 2016; Salovey & Mayer, 1990). This ability contributes to both emotional and intellectual development. Among the recent research studies (Zohreh and Izadpanah,, 2018) it has been indicated that writing skills are closely related to emotions. Halimi et al. (2021) conducted a study on writing skills and vocabulary learning, they state that EI is refers to the ability to utilize emotions and effectively communicate the potential to make decisions. The theory of process writing is considered complete when it incorporates emotion and motivation (Ebrahimi et al., 2018; Fida et al., 2018; Goleman, 1998; Halimi et al., 2021; Saro et al., 2023). Therfore, the argument put forth by these researches is that the writing process is lacking without emotion. Upon analyzing the process and results, these researchers explain that EI is an important and effective tool for learning various subjects. Consequently, writing skills should be combined with emotions inorder to enhance both the process and the results.

Finally, EI involves managing one's own emotions, managing others' emotions, perceiving emotions, and utilizing emotions in any academic performance context, particularly when it comes to motivation for writing. According to Suleman et al. (2019), the growth of students' EI and their writing motivation is crucial. Additionally, further research is necessary to examine the ecological validity and reliability of the current study focus in the Ethiopian context. This is important because the perception of students' emotional and motivational intelligence may vary in their writing performance among specific participants in high school classrooms (Fig. 1).

Fig. 1 EI model by the researchers

Emotional and motivational intelligence in writing

Based on Bloom's (1986) description, Esmaeili, et al. (2018) explained that EI had a negative effect on writing motivation. They also pointed out that the relationship between writing and emotion has not been widely studied and needs further research in the future. Downey, et al. (2008) explained that high EI contributes to increased motivation, planning and decision-making leading to positive academic performance. They also highlighted a strong correlation between EI andwriting motivation. According to Masgoret and Gardner (2003), students must be motivated in order to be effective in writing skills. Motivation is essential for practicing writing and expressing inner passion Gardner further explains that the relationship between writing skills and motivation is most effective when applied with focus. Prior to Masgoret and Gardner's (2003) work, research in the late 1970s and early 1980s focused on students' fear of writing and lack of motivation before starting to write as explained by Troia et al. (2015) in their study on Iranian students. Zohreh and Izadpanah (2018) indicated that there is no significant correlation between EI and gender in terms of writing ability between boys and girls. In contrast, Alavinia et al. (2012) conducted a correlational survey involving 1160 senior secondary school students in the Federal Capital territory of Abuja, Nigeria and revealed that the average level of EI was attributed to the students' experience in secondary school. According to Okello and Aomo's (2018) study on the relationship between EI and suicidal behavior among secondary school students, the majority of the students (55.7%) were proficient in identifying their emotions. The study sampled 120 students from 20 schools in Kisii County.

According to Cachia et al. (2018) and Díaz-Herrero et al. (2018) EI can be seen a crucial factor in motivationing individuals to write. Motivation to write is typically associated with grades on assessments, but students also recognize that academic success involves not only aquaires skill and knowledge but also personal and professional growth (Ayele, 2014; Nyarko et al., 2020). Additionally, students acknowledge that their inclination to write may be influenced by their inherent talents. The development of their writing abilities depends on the alignment between their motivation and individual skills.

Smedt et al. (2018) explan that, writing is a cognitive task that can be linked to intelligence, but they also emphasize thesignificant role of personal effort in motivating students to write. The key to consistently completing any task lies in motivation. If students struggle with their writing abilities, they will lack inspiration and may also experience a lack of self-confidence (Bozdağ, 2020; Cachia et al., 2018; Deng et al., 2016; Okello & Aomo, 2018).

In recent times, scholars have focused on the effectiveness of emotional and motivational intelligence on academic performance development of (Fida et al., 2018; Meshkat & Nejati, 2017; Patel, 2017; Van Rooy et al., 2005). However, many of these studies have overlooked the importance of EI on various aspects of academic motivation and student performance, particularly in territorial education (Ayele, 2014; Deng et al., 2016; Fischer et al., 2018). This is a critical issue among Ethiopian high school students (Sahle et al., 2023). Ethiopian high school students lack motivation to learn, and their writing motivation is low (Abdolrezapour, 2013; Gebremariam & Hiluf, 2023; Sahle et al., 2023). Gebremariam and Asgede (2023) argue that writing requires a deep understanding of the writing process and internal and external motivation, sometimes referred to as EI in the context of academic performance. Furthermore, students need to effectively use their EI, present their ideas clearly, and organize their content well to achieve the academic goals (Aryanika, 2016; Myfanwy et al., 2013). Unfortunately, EI has emerged as a significant concern and tends to be overlooked in terms of achieving academic success (Bar-On, 2004; Costa & Faria, 2020; Haynes, 2021; Sahle et al., 2023). Many studies have not considered students who struggle with writing in terms of their EI (Fiori & Vesely-Maillefer, 2019; Gong & Archer, 2021). However, the effectiveness of EI in academic classrooms is unpredictable (Fischer et al., 2018; Halimi et al., 20,221), and it is crucial at all levels of education. Based on this, many studies have focused on the level of EI and its relationships with academic performance.

Naidoo et al. (2023) research indicates that students' motivation, attention to emotion, and relational strategies can be identified. The research utilized a descriptive method Focusing on observing participant behavior and classroom performance. The study found that EI increases when students are motivated to learn. Additionally, the results of Naidoo et al. (202,314) study also confirmed that students' grades and emotional adjustment are affectedat the university level. The study suggests that teacher is with higher EI have more motivated students highlighting a strong correlation between emotional and motivational intelligence and writing performance. While there is limited research on the EI and writing abilities of Ethiopian high school students, some variables related to EI and academic outcomes have shown similar trends. For instance, in MacCann et al. (2020) discovered a similar finding in Abuja, Nigeria, stating that EI influenced the academic success of second-year students in senior secondary schools, particularly in mathematics. Furthermore, Shao et al. (2013) compared the EI and writing motivation scores of students and found a strong and positive correlation between EI and writing motivation. Esmaeili et al. (2018) explained that EI had a detrimental effect on writing skills and noted that the connection between writing and emotion has not received much attention emphasizing the need for further study in the future. According to Downey et al. (2008), having a high EI increases motivation, planning, and decision-making, ultimately leading to improved academic performance. Meshkat and Nejati's (2017) study found a

positive correlation between EI and writing motivation suggesting that students need to be motivated in order to write effectively. Therefore, it is necessary to further enhance students' EI to improve their academic performance (Costa & Faria, 2020; Nasihah & Cahyono, 2017).

Gender difference in emotional intelligence and mtivation to write

In different parts of the world, comparisons of EI between genders tend to be inconsistent. In the United States, females performed better than males on the EI test, with a mean correlation of r = 0.17 (Van Rooy et al., 2005). Fida et al. (2018) compared gender differences in EI and found that students overall had higher EI scores across all facilities. Similar results were reported by Patel's (2017) study in India, and Meshkat and Nejati's (2017) investigation into significant differences in EI scores among students at three Iranian universities yielded no results. However, the evidence supporting the claim that men are more emotionally repressed than women is conflicting, despite it being widely accepted (Deng et al., 2016; Fischer et al., 2018). Numerous research findings have evaluated the relationship between gender and EI. Bar-On (2006) and Brackett and Mayer (2003) found no difference between men and women in terms of EI. However, Davis (2012), Harrod and Scheer (2005), found that women have higher EI than men, contradicting these findings. This demonstrated that men outperform women in EI, consistent with studies by Ahmad et al. (2009) and Estaji and Shahmoradi's (2016) study focused on students' writing proficiency, gender, and EI, finding a link between EI and writing motivation confirming the findings of Yvonne and Shelley (2004) that women have higher EI.

The disparity between male and female EI has been examined in numerous studies worldwide. Myfanwy et al. (2013) found a gender difference in motivation and writing ability among students indicating that women generally exhibit higher level of motivation for education. In a cross-sectional study conducted by Cabello et al. (2016) involving 12,198 Spanish students (56.56% males) aged between 17 and 76 years (M = 37.71, SD = 12.66), it was found that gender affected all four categories of the Mayer and Salovey EI model as well as the overall EI score. Women outperformed men on the Mayer-Salovey-Caruso EI Test. Similarly, Ranasinghe et al. (2017) found that females had higher mean EI scores than males in a cross-sectional study of 471 medical undergraduate students in Sri Lanka using the Schutte Self-report EI Test (p = 0.014).

In a study conducted by Shirvani and Shirvani (2021) in the USA, the researchers examined the relationship between gender and EI among 127 students (55 males and 72 females) enrolled in a Southern university. The students ranged in age from 21 to 47. Although male students had higher mean scores in overall EI than female students, a regression analysis showed that this difference was not statistically significantThese findings align with the research conducted by Gong and Archer (2021), who examined the relationship between EI, sex, and age in a sample of 36 doctoral students (12 men and 24 women) from various universities in the same area. Although males had higher mean EI scores than females, there was no statistically significant gender difference in the overall results of the data collection using the Schutte self-report EI Test.

Another study conducted by Masoomeh and Yalda (2016) in China investigated the measurement equivalence of the Wong and Law EI Scale on a sample of 1160 individuals including 636 females and 524 males with ages ranging from 13 to 40, and a mean age

of 24.19. The results indicated that women performed worse than men on the subscales of self-emotion appraisal, regulation of emotion, and use of emotion. The author suggested that these gender disparities may be attributed to the selection of measurement tools. In a study by Libbrecht et al. (2014) the Wong and Law EI Scale scores across two cultures—Singapore ($n = 505$) and Belgium ($n = 339$) were compared assess their consistency. The analysis of measurement invariance factor correlations revealed minimal gender effects on EI scores.

There have been various research studies examining the relationship between EI and gender. One such study conducted by Lawson et al. (2021) focused on 111 university medical students in Ghana, including 57 males and 54 females. The study found minimal differences in EI between genders. The researchers utilized the Emotional Quotient Self-Assessment Checklist to measure EI and discovered that although females had slightly higher mean scores overall compared to males (106.212 and 104.217), this difference was not statistically significant ($p = 0.319$). However, it is worth noting that females performed better than males on most subscales, with the exception of social competency, where males outperformed females. This finding contradicts previous research conducted by Davis (2012), Harrod and Scheer (2005), which suggested that women generally have higher EI than men. On the other hand, other studies, such as those by Ahmad et al. (2009) and Estaji and Shahmoradi (2016), have indicated that men may have higher EI than women. Additionally, Myfanwy et al. (2013) explained that there is a gender difference in terms of students' academic motivation and behavior in the classroom, specifically regarding motivation and writing ability. Their research results consistently showed that women tend to have a higher level of educational motivation.

Methods

Design

This study utilized a quantitative approach with cross-sectional design to investigate the level of emotional and motivational intelligence in Ethiopian high school learners' writing performance in relation to gender effects. The purpose of this study was to describe the level of EI subscales among high school students and examine the associations between Emotional and motivational intelligence.

Context and partipants

The study was look place in one of Dese City's high schools, in Ethiopia. According to the Dese City Administration Educational Bureau for the 2021/22 academic year, the school had a total of 492 students, with 123 males and 369 females, spread across four high schools. Although the aim was to provide equal opportunities for all students to enroll in school, this study specifically focused on 11th-grade students selected through a stratified random sampling method. The school approved the study project due to the restrictions imposed by the COVID-19 pandemic, which hindered in-person encounters that could have affected access to the target population.

All students attending Akalewold high school were included in the study. They were assigned to the same grade level based on their performance in the Grade-10 National Examination Proficiency Test. The participants, consisting of 176 11th-grade students (with an average age of 19.33 and a standard deviation of 1.32), were carefully selected

using a random sampling technique. The study included 69 males and 107 females in the social science stream at Akalewold high School.

Data collection instruments

Data was collected from primary sources using structured self-administered questionnaires which were replicated on printed paper.

EI questionnaire

The first tool used in the study was an EI questionnaire to measure the EI of the participants. The questionnaire adapted from Mohammadi and Izadpanah (2018) initially included 33 questions but latterly had 13 removed due to reliability issues. The questionnaire was translated into an Amharic version and consisted of two parts: a demographic questionnaire and a measurement instrument. These questions were combined with the demographic questionnaire to form one questionnaire with checkboxes, multiple-choice, and multiple-grid questions. Participants are instructed to consider their ability to perceive emotions, control their own emotions, control the emotions of others, and use emotions when answering the questions. They are asked to indicate their level of agreement with the statements by circling points marked 4 to 1 at the bottom of the provided alternative answers. There were no right or wrong answers, and participants are told to answer quickly.

To determine the reliability of the measurements, four-point Likert scale answer options was used and confirmed by Cronbach's alpha. The EI scale collected data on EI based on the ability model of EI. Consists of 33 short statements, with four items measuring each of the four dimensions of EI. 20 out of 33 quations from Mohammadi and Izadpanah's (2018) scale were used.The four dimensions of EI were:

- Managing Own Emotions (MOWE; items 2, 14, 31). This dimension focuses on individuals' self-emotion appraisal, which involves identifying personal emotions, including strengths and limitations, which contribute to one's sense of self-worth. For example, "When I experience a positive emotion, I know how to make it last."
- Managing Others' Emotions (MOTE; items 1, 4, 13, 16, 24, 26, 30). This dimension helps individuals perceive and identify the emotions of other people. For example, "I like to share my emotions with others."
- Utilization of Emotion (UE; items 6, 7, 20, 27). This dimension represents the ability of people to utilize their emotions for personal development. For example, "Emotions are one of the things that make my life worth living."
- Perception of Emotion (PE; items 15, 18, 19, 25, 29, 32). This dimension helps with coping and recovering from stress. It provides insight into individuals' capacity to understand emotions and how they work. For example, "I find it hard to understand the non-verbal messages of other people."

According to Mohammadi and Izadpanah (2018) these dimensions were also valid predictors of various outcomes. The EI instrument measures EI using a Likert scale ranging from "strongly disagree = 1" to "strongly agree = 4". The score interpretation is as follows:

a score between 1.00 and 2.00 indicated low EI, scores between 2.01 and 3.00 indicate moderate EI, and scores between 3.01 and 4.00 indicate a high level of EI.

Motivational intelligence questionnaire

The main purpose of the questionnaire is to measure the writing motivation of the study participants. The questionnaire was prepared by Zohreh and Izadpanah (2018) into Amharic. Participants were asked to consider their writing motivation and their general interest in writing skills while indicating their level of agreement with the statements. The alternative answers were presented on a scale of 4 to 1, and participants were instructed to circle their choices. It was emphasized that there were no right or wrong answers. Participants were also instructed to answer quickly and not to change their answers by repeatedly reading them.

A writing motivation questionnaire was developed to examine the relationship between students' emotional and motivational intelligence within the writing performance. The questionnaire, originally designed by Ashley Payne (2012) to assess the writing motivation of students at the University of Georgia, was modified for this study by removing two questions (9th and 35th) related to vocabulary and spelling. The remaining 35 questions were translated into Amharic and reviewed by experts for clarity and grammatical errors. The questionnaire was also tested and applied in preliminary studies.

To ensure clarity of the questionnaire for data collection on writing motivation, it was filled and returned by 15 11th grade students who were not part of the main study group. Confusing and ambiguous words and phrases were corrected based on their feedback. The questionnaire was then administered for the final time. Cronbach's alpha was used to assess the reliability of the data, resulting in a reliability of $\alpha = 0.93$. Due to its high reliability, the questionnaire was used in the main study.

Writing performance test

A writing skills test was administered to assess the writing performance of the participating students. The students were instructed to write a narrative-style paragraph on a given topic to facilitate the writing process. Specifically, they were asked to write about one of their experiences growing up in their hometown. After completing the EI questionnaires, the students wrote their paragraphs and were instructed to include the identification number given to them by the researcher on each of the paragraphs and questionnaires. The students were informed by their teacher that their work would be graded. Three language teaching experts, all with master's degrees, evaluated the paragraphs based on the given topic. The evaluators were provided with general instructions and rubrics for evaluating the text, which were designed by American and British researchers and referenced works by Heaton (1988) and Lebe (2002). The evaluation criteria included idea organization (20 points), content (20 points), language use (30 points), punctuation (5 points), and grammar use (25 points), for a total of 100 points. The evaluators were instructed to adhere to the scoring guidelines when correcting the paragraphs. Each manuscript was triplicated before being submitted to the evaluators. The individual scores given by each evaluator for each paragraph were summed, and the average score from the three evaluators was recorded. It was acknowledged that different moods at different times could influence the evaluation results, so the evaluators

were reminded to carefully evaluate the paragraphs. The inter-rater reliability was calculated and found to be 0.841, indicating that the evaluators were reliable and could be used for the study.

Procedure of data collection

The participants in this study were recruited by their teachers and invited to participate. Both students and their parents were asked for permission to take part in the study. The participants completed the self-reported emotional and motivational intelligence questionnaires during class time, and their EI scores were matched with their writing motivation and writing performance, which was collected through a paragraph writing test. Before filling out the questionnaires, the students were given an explanation of the purpose and how to complete them. Their names were kept confidential to protect their privacy. In the introduction of the questionnaire, it was emphasized that the researchers' participation was important for the study. The students were asked to write their numbers using a sequence number from 1 to 176, ensuring that it would not interfere with the text they were writing. The teachers personally guided the students in filling out the questionnaire and writing the article, helping them stay calm and focused. After completion, the teachers and the researcher checked the questionnaires during the session to ensure that any incomplete sections were filled out.

The questions were translated from English to Amharic by two English and two psychology teachers. The researcher reviewed the translations, addressing any differences and correcting clarity and grammatical errors. After this, three Amharic teachers from the school and two practical Amharic teachers were asked to provide feedback on grammar mistakes and clarity. Their comments were received, and adjustments were made accordingly. The reliability of the emotional and motivational intelligence questionnaires were tested using Cronbach's alpha formula and found to be 0.811 and 0.93 respectively, indicating high reliabilities.

Validity and reliability of instruments

To achieve the objectives of the study, quantitative data was used. Questionnaires and tests were administered to a group of participants. The quantitative data from the questionnaires were imported into SPSS and analyzed in two steps. The first step was to assess the students' emotional and motivational intelligence quantitatively, and the second step was to investigate the association between emotional and motivational intelligence in high school students' writing performance. However, before analyzing the quantitative data using correlational statistics, an exploratory factor analysis (EFA) was conducted. The maximum likelihood method with varimax rotation was used to analyze the factor structure and correlations between items included in the scale. The construct validity of the data was assessed using KMO measures and Bartlett's test of sphericity and the results of the EFA conducted in SPSS indicated that the Kaiser–Meyer–Olkin measure was 0.892, which is above the recommended threshold of 0.80. This suggests that the sample from which the data were collected was adequate. Additionally, Bartlett's test of sphericity was statistically significant at $X^2/df(120) = 1069.064; p = 0.001$), indicating that the data were suitable for factor analysis. To ensure the accuracy of item grouping within each construct, the researcher performed an exploratory factor analysis.

This analysis helped identify independent factors and determine which items loaded onto these factors.

The extraction communality ranged from 0.532 to 0.849, while the factor loadings ranged from 0.517 to 0.885. All standardized factor loadings for the items were above 0.50, indicating good convergent validity. The factor analysis confirmed that the data collection instruments were suitable for further analysis in this study. Additionally, the research analysis utilized information gathered from the questionnaire provided to the respondents. To assess and determine the participants' experiences with reflective practice, the Pearson correlation coefficient was employed. The questionnaire items analyzed by CFA indicate that the model had good fit statistics, including $X^2/df = 4.008$, RMSEA of 0.131, RMR of 0.076, and GFI of 0.745. The recommended values, based on the guidelines of Browne and Cudeck (1992), are provided in the brackets (RMSEA < 0.05, RMR < 0.05, GFI > 0.90). All items' standardized factors had loadings above 0.50, indicating good convergent validity. Another evidence of convergent validity is that the maximum shared variance is less than the respective average variances extracted for all variables. The Cronbach's alpha and composite reliability for all variables are above 0.80, demonstrating good reliability.

Data analysis techniques

Analysis followed the recommended two-step procedure (Kline, 2015). First the psychometric qualities of the hypothesized measurement model were subjected to CFA with maximum likelihood and robust standard errors. Second, structural equation modeling was performed to test the structural relations between the variables in the model. Models were considered a good fit to the data when the root mean square error of approximation (RMSEA) and standard root mean square residual (SRMR) were between 0.50 and 1.00, while the comparative fit index (CFI) and Tucker-Lewis Index (TLI) approximated 0.90 (Kline, 2015). In addition, the Satorra-Bentler Chi-square (X^2) was reported, which is more conservative and corrects for nonnormality (Satorra & Bentler 2001). Following Preacher and Hayes (2008), mediation and moderated mediation were assessed with bootstrapped confidence intervals for the (conditional) indirect effects. Analyses were performed in R with the package Lavaan (Rosseel, 2012) and SEM Tools (Jorgensen, 2019).

Furthermore, to summarize the participants' responses, we used descriptive statistics to calculate the mean and standard deviation. Our goal was to examine the relationship between students' emotional and motivational intelligenceand writing performance. To test this relationship, we introduced gender as a mediating variable. When calculating the overall correlation, we used partial correlation while controlling for gender. However, this method does not indicate which variable is more strongly associated with gender. To determine this, we used Pearson's correlation coefficient.

Results

The study aimed to understand the emotional intelligence, writing skills and writing motivation of selected Ethiopian high school students. To achieve this, three research questions were developed, and data was collected through a self-reported questionnaires and writng performance test from high school students. Descriptive and inferential

statistics, including EFA, CFA in AMOS version 23, Pearson correlation, and regression analysis were used to analyze the data. The results of the EFA showed that the solution was based on the expected four factors of emotional and motivational intelligence, with all items loading on their respective factors. The nine-factor solution explained 67.1% of the total varianceindicating a good level of validity for the factors. Additionally, CFA validation using AMOS-23 was performed to assess the reliability, convergent validity, and discriminant validity factors of the study data. After validating the data instruments and checking reliability a correlational analysis was conducted as follows:

Table 1, provides an initial indication of the relationships between the variables in the study. Multicollinearity was determined to be absent, as the correlation between the key variables did not exceed 0.80 and the variance inflation factors (VIF) remained within the range of 1.14–5.93 (Kline, 2015). Table 2 demonstrates the strength of the relationship between EI, WP, and WM among upper secondary school students in Ethiopia. Pearson correlation coefficients were used, with partial correlation controlling for gender. The results revealed significant relationships between different dimensions of EI, WP and WM. The descriptive values, including mean and standard deviations, were as follows: MOWE (M$=$3.29; SD$=$0.44), MOTE (M$=$3.33; SD$=$0.41), UE (M$=$3.27; SD$=$0.43), PE (M$=$3.14; SD$=$0.47), WP (M$=$68.60; SD$=$10.32), and WM (M$=$3.04; SD$=$0.43). Specifically, there were statistically significant correlations between MOWE and MOTE (r$=$0.339**), MOWE and UE (r$=$0.383**), MOWE and PE (r$=$0.463**), MOWE and WP (r$=$0.290**), MOTE and UE (r$=$0.279**), MOTE and PE (r$=$0.492**), MOTE and WP (r$=$0.213**), UE and PE (r$=$0.649**), UE and WP (r$=$0.201**), and PE and WP (r$=$0.423**). However, no significant correlations were found between MOWE and WM (r$=$0.033), MOTE and WM (r$=$0.028), UE and WM (r$=$-0.024), PE and WM (r$=$0.055), and WP and WM (r$=$0.008) at the 0.01 level.

Additionally, partial correlations were used to control for gender in Table 2. The results showed the following net correlations: MOWE and MOTE (r$=$0.295; $p=$0.001), MOWE and UE (r$=$0.346; $p=$0.001), MOWE and PE (r$=$0.435; $p=$0.001), MOWE and WP (r$=$0.271; $p=$0.001), MOTE and PE (r$=$0.369; $p=$0.001), MOTE and WP (r$=$0.167; $p=$0.027), UE and PE (r$=$0.581; $p=$0.001), UE and WP (r$=$0.160; $p=$0.035),

Table 1 Strength of the relationship by Pearson's correlation coefficient (n$=$176) and net correlation while controlling for gender by partial correlation (n$=$173)

Variables	MOWE	MOTE	UE	PE	WP	WM
MOWE	1	0.295[a](0.001)	0.346[a](0.001)	0.435[a](0.001)	0.271[a](0.001)	0.011[a](0.881)
MOTE	0.339**	1	0.139[a](0.067)	0.369[a](0.001)	0.167[a](0.027)	−0.029[a](0.704)
UE	0.383**	0.279**	1	0.581[a](0.001)	0.160[a](0.035)	−0.075[a] (0.321)
PE	0.463**	0.492**	0.649**	1	0.404[a](0.001)	0.000[a](0.995)
WP	0.290**	0.213**	0.201**	0.423**	1	−0.010[a] (0.895)
WM	0.033	0.028	−0.024	0.055	0.008	1
M	3.29	3.33	3.27	3.14	68.60	3.04
SD	0.44	0.41	0.43	0.47	10.32	0.43

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

[a] The net correlation while controlling for birth-sex by partial correlation

M Mean; *SD* Standard deviation; *MOWE* Managing own emotions; *MOTE* Managing others' emotions; *UoE* Utilization of emotions; *PoE* Perception of emotions; *WP* Writing performance; *WM* Writing motivation

Table 2 Gender differences in EI, WP and WM

		N	M	SD	Df	MS	F	Sig
MOWE	Male	107	3.35	0.41	174	1.081	5.762	0.017
	Female	69	3.19	0.46				
	Total	176	3.29	0.41				
MOTE	Male	107	3.47	0.33	174	5.569	41.100	0.000
	Female	69	3.11	0.42				
	Total	176	3.33	0.41				
UE	Male	107	3.40	0.35	174	4.452	28.291	0.000
	Female	69	3.08	0.45				
	Total	176	3.27	0.43				
PE	Male	107	3.31	0.41	174	7.628	42.950	0.000
	Female	69	2.88	0.44				
	Total	176	3.14	0.47				
WP	Male	107	69.81	9.79	174	398.350	3.802	0.053
	Female	69	66.72	10.89				
	Total	176	68.60	10.32				
WM	Male	107	3.08	0.43	174	.497	2.654	0.105
	Female	69	2.97	0.44				
	Total	176	3.04	0.43				

M Mean; *SD* Standard division; *MS* Mean square; *MOWE* Managing own emotions; *MOTE* Managing others' emotions; *UoE* Utilization of emotions; *PoE* Perception of emotions; *WP* Writing performance; *WM* Writing motivation

and PE and WP (r=0.404; $p=0.001$). However, there were no significant correlations between MOWE and WM (r=0.011; $p=0.881$), MOTE and UE (r=0.139; p=0.067), MOTE and WM (r=−0.029; $p=0.704$), UE and WM (r=−0.075; $p=0.321$), PE and WM (r=0.001; $p=0.995$), and WP and WM (r=−0.010; $p=0.895$).

The results show that WM does not have significant relationships with any of the EI sub-scales and WP. Similarly, it has a negative relationship with MOTE, UE, and WP variables, but these relationships are not significant. Therefore, WM does not have significant relationships with any of the EI sub-scales and WP.

Table 2 displays the birth-sex differences in EI, WP, and WM. The mean score for MOWE for males was M=3.35 (SD=0.41), and for females, it was M=3.19 (SD=0.46). The mean score for MOTE for males was M=3.47 (SD=0.33), and for females, it was M=3.11 (SD=0.42). The mean score for UE for males was M=3.40 (SD=0.35), and for females, it was M=3.08 (SD=0.45). The mean score for PE for males was M=3.31 (SD=0.41), and for females, it was M=2.88 (SD=0.43). The mean score for WP for males was M=69.81 (SD=9.79), and for females, it was M=66.72 (SD=10.89). The mean score for WM for males was M=3.08 (SD=0.43), and for females, it was M=2.97 (SD=0.44) respectively.

However, the mean value alone cannot determine if there are statistically significant differences between the mean values of the EI dimensions and the motivation to write of selected Ethiopian high secondary school students. The between-groups analysis was used to identify any statistically significant differences in the mean scores of selected Ethiopian high school students' EI dimensions and WP and WM. Based on this, Table 3 shows that there were significant differences in EI dimensions at: MOWE= F(1, 174)=5.76, $p=0.017$; MOTE= F(1, 174)=41.10, $p=0.001$; UE= F(1,

Table 3 The predictive power of emotional and motivational intelligenceon WP by multiple regression (df = 6172)

	Gender	T-III-SS	MS	F	Sig	PES
MOWE	Male	1.081	1.081	5.762	0.017	0.032
	Female					
MOTE	Male	5.569	5.569	41.100	0.000	0.191
	Female					
UE	Male	4.452	4.452	28.291	0.000	0.140
	Female					
PE	Male	7.628	7.628	42.950	0.000	.198
	Female					
WM	Male	0.497	0.497	2.654	0.105	0.015
	Female					

M Mean; *SD* Standard division; *T-III-SS* Type III Sum of Squares; *MS* Mean square; *PES* Partial eta square; *MOWE* Managing own emotions; *MOTE* Managing others' emotions; *UoE* Utilization of emotions; *PoE* Perception of emotions; *WP* Writing performance; *WM* Writing motivation

174) = 28.29, $p = 0.001$; and PE = F(1, 174) = 42.95, $p = 0.001$. However, in regard to gender moderated analysis, there is no statistically significant difference at: WP (F(1, 174) = 3.80, $p = 0.053$), and WM (F(1, 174) = 2.65, $p = 0.105$).

Table 3 displays the results of the Multivariate Analysis of Variance (MANOVA) examining the relationship between EI, WM, and WP. of the findings indicatesignificance difference in EI dimensions when considering the impact of gender on the prediction of EI and WM on WP. Specifically significant differences were found in EI dimensions. Specifically, there were significant differences in the dimensions of MOWE (F(172) = 5.76, $p = 0.017$, Partial Eta Square = 0.032), MOTE (F(172) = 41.1, $p = 0.001$, Partial Eta Square = 0.191), UE (F(172) = 28.29, $p = 0.001$, Partial Eta Square = 0.140), and PE (F(172) = 42.95, $p = 0.001$, Partial Eta Square = 0.198). The partial eta square values ranged from 3.2 to 19.1%, indicating the significance of these EI dimensions on WP. However, no significant difference was found in the results for WM (F(172) = 2.65, $p = 0.105$, Partial Eta Square = 0.015).

The study's overall results revealed interesting gender-based correlations. Firstly, males demonstrated higher levels in all EI subscales compared to females. This finding aligns with previous research indicating that women generally possess greater EI. On the other hand, no significant gender-based differences were found in WP and WM. Both males and females exhibited similar levels of proficiency in writing. Furthermore, the regression reports show that the impacts of EI subscales (MOWE, MOTE and UE) and WM on WP are not statistically significant, except for one EI subscale (PE).

Overall, the findings indicate that in the context of Ethiopia's high school education system, the EI of students could influence policy and shift away from subject matter difficulties to the psychological well-being and emotional behavior of students. Although the findings may not apply universally, they offer valuable insights that learners in other contexts may find useful. Additionally, the study establishes a connection between EI and the writing motivation among high school students. Recent findings demonstrate a significant correlation between EI dimensions and writing

motivation. However, the writing motivation of the participant students is less significance compared to the EI dimensions of the selected high school students.

Discussion

The first research question aimed to gather information and analyze the EI of selected high school students perceive about emotional and motivational intelligence through a self-report questionnaires and writing performance. The study assessed the correlation between EI dimensions and writing motivation in the Ethiopian context. The findings revealed that the EI dimensions are correlated with each other and impact students' writing motivation. This result is consistent with previous research (Chew et al., 2013; Costa & Faria, 2020; Mohammadi & Izadpanah, 2018; Zysberg, 2018). However, it contradicted other studies (Ali & Mohammed, 2020; Bozdağ, 2020; Cachia et al., 2018; Deng et al., 2016; Sepideh et al., 2017), which described EI as differing from the writing motivation of students and requiring technical support to manage students' emotions during writing skills. Regarding academic success, there was no statistically significant difference in the level of EI dimensions. Aryanika (2016) and Ebrahimi et al. (2018) also concluded that students lacked EI during the writing process, which aligns with the constructivist learning theory. Based on these previous studies, one possible interpretation of this study's findings is that EI is a contentious issue among high school students in the Ethiopian context.

The second research question aimed to investigate the status of EI dimensions and writing motivation with reference to writing performance among selected high school students in Ethiopia. The statistics of the self-reported questionnaire and written test revealed a statistically significant difference in EI dimensions based on birth sex ($p = 0.001$ in all dimensions). However, there was no statistically significant difference in among the participants ($p = 0.053$). These findings are consistent with previous research that examined the relationship between students' EI, writing motivation, and gender differences (Downey et al., 2008; Fida et al., 2018; Socas, 2017; Suleman et al., 2019). For instance, Downey et al. (2008) studied high school students' EI and academic achievement, concluding that developing EI could enhance both EI and academic performance. Similarly, Fiori and Vesely-Maillefer (2019) conducted a study on classroom EI and its relationship with school performance, finding a strong association between EI and academic success. This supports the use of EI in the classroom, where writing motivation is an important aspect of academic performance. Ebrahimi et al. (2018) found that the majority of Iranian students had low EI and writing motivation, indicating that low EI is linked to poor academic performance in the classroom.

Further research in this study aimed to examine the level of gender differences in EI dimensions, writing motivation, and writing performance among high school students in Ethiopia. According to Gebremariam and Hiluf (2023) and Sahle et al. (2023), writing is a fundamental skill that requires emotional and motivational intelligence to effectively organize one's thoughts. In order to assess the gender differences in emotional and motivational intelligence and writing performance, participants completed demographic information, self-reported data, and a writing performance test. The analysis results showed that men outperformed women in EI dimensions with statistically significant differences. However, there were no statistically significant differences between

genders in writing performance and writing motivation. These findings are consistent with the study conducted by Fida et al. (2018), which also found that male students scored higher than female students in EI dimensions. Estaji and Shahmoradi (2016) also demonstrated that men outperformed women in EI, which is supported by studies by Ahmad et al. (2009). Similarly, the findings of this study regarding EI dimensions align with evidence suggesting that men are more emotionally repressed than women, despite this claim being widely accepted (Deng et al., 2016; Fischer et al., 2018). These findings are also consistent with the studies conducted by Patel (2017) in India and Meshkat and Nejati (2017), which found no significant differences among Iranian university students. However, Davis (2012), Harrod and Scheer (2005) found that women have higher EI than men, contradicting these findings. Additionally, studies by Bar-On (2006) and Brackett and Mayer (2003) found no difference between men and women in terms of EI dimensions.

Furthermore, the findings regarding high school students' writing motivation and writing performance revealed no significant gender differences. These findings are in line with the research conducted by Gong and Archer (2021), who examined the relationship between EI, sex, and age in a sample of doctoral students. Although males had higher mean EI scores than females, there was no statistically significant gender difference. However, Estaji and Shahmoradi (2016) study focused on students' writing proficiency, gender, and EI, finding a link between EI and writing motivation, confirming that women have higher EI. Similarly, Myfanwy et al. (2013) found a gender difference in motivation and writing ability among students, indicating that women generally exhibit a higher level of motivation for education. The findings of the current study contrast with Myfanwy et al. (2013), which revealed a gender difference in terms of students' academic motivation and behavior in the classroom, specifically regarding motivation and writing ability.

Therefore, the current study revealed a link between EI and the writing motivation among selected Ethiopian high school students. Therefore, the current study revealed a link between emotional and motivational intelligence among selected Ethiopian high upper secondary school students. The study findings showed significant correlations among the dimensions of EI and writing motivation, with a significance level at $p = 0.05$. This result suggests that the different dimensions of EI have an impact on each other. Previous studies (Haynes, 2021; Karimi, 2020; Nyarko, 2020; Sánchez-Álvarez et al., 2016) have noted that students generally have positive emotions towards their academics, despite some limitations in their writing motivation (Khatoon et al., 2020; Mohammadi & Izadpanah, 2018; Saud, 2019). Furthermore, MacCann et al. (2020) found that high upper secondary school students experience positive emotions related to their academic performance. The new finding of this study is that writing motivation is not influenced by gender in terms of EI factors..

Conclusion

The results of the present study indicate a correlation between high school students' EI and their writing motivation. However, there was no significant difference in writing ability based on gender. Nevertheless, statistically significant differences were found in all dimensions of EI. This highlights the need for effective EI self-efficacy training

in Ethiopian high schools. It is recommended that EI be included in the curriculum to enhance students' motivation to write and overall experience. This study has implications for the field of education, particularly in emphasizing the importance of EI in schools and its role in writing instruction both inside and outside the classroom.

However, there are limitations to this study that should be addressed in future research. Firstly, the study only focused on high school students in Ethiopia, which may not provide a comprehensive understanding of the impact of EI on academic performance in relation to gender differences. Additionally, the sample used in this study may not be representative and the results may not be applicable to other populations. The use of questionnaires and tests for data collection may have introduced self-selection sampling bias. The location of the study may also have influenced the findings. Future studies should aim to include a more diverse range of participants, from elementary to high upper secondary school students, to gain a better understanding of the potential role of EI in academic performance.

Further investigations into high upper secondary school students, beyond those in Wollo City, Ethiopia, would be beneficial for future researchers. The findings of this study may also be applicable to other developing countries that face writing difficulties related to EI levels. The study suggests that high upper secondary school students should be educated about the importance of EI for the positive development of their self-efficacy, optimism, and academic resilience.

Author contributions
BH Designs the manuscript project and supervise with MA. Both are approved the final draft of the manuscript.

Availability of data and materials
All data are available upon request from the editor and/or reviewers.

Declarations

Competing interests
The authors declare that they have no competing interests.

References

Abdolrezapour, P. (2013). The Relationship between Emotional Intelligence and EFL Learners' Writing Performance. *Procedia - Social and Behavioral Sciences, 70*, 331–339. https://doi.org/10.1016/j.sbspro.2013.01.070

Ackley, D. (2016). Emotional intelligence: A practical review of models, measures, and applications. *Consulting Psychology Journal: Practice and Research, 68*(4), 269–286. https://doi.org/10.1037/cpb0000070

Ahmad, S., Bangash, H., & Khan, S. A. (2009). Emotional Intelligence and gender differences. *Sarhad Journal of Agriculture, 25*, 127–130.

Alavinia, P., Bonyadi, A., & Razavi, N. (2012). On the correlation between teachers' emotional intelligence and learners' motivation: The case of Iranian EFL learners. *Journal of Education and Practice, 3*(13), 100–111. https://doi.org/10.4304/tpls.2.6.1291-1299

Ali, H. S., & Mohammed, Q. Q. (2020). Influence of emotional intelligence on academic achievement among students at secondary schools in Babylon City. *Indian Journal of Forensic Medicine & Toxicology, 14*(1), 906–918. https://doi.org/10.37506/v14/i1/2020/ijfmt/193019

Aritzeta, A., Balluerka, N., Gorostiaga, A., Alonso-Arbiol, I., Haranburu, M., & Gartzia, L. (2016). Classroom emotional intelligence and its relationship with school performance. *European Journal of Education and Psychology, 9*(1), 1–8. https://doi.org/10.1016/j.ejeps.2015.11.001

Aryanika, S. (2016). The correlation between the students' writing motivation and the writing ability. *English Education: Jurnal Tadris Bahasa Inggris, 9*(1), 215–231.

Ayele, Z. A. (2014). Effects of training in the learning strategies of writing in improving students writing skills. *International Journal of Research, 1*(4), 54–59. https://doi.org/10.5281/zenodo.15958

Bar-On, R. (2004). *Baron Emotional Quotient Inventory: Technical Manual. Toronto: MHS Systems*, 02, 15.

Bar-On, R. (2006). The Bar-On model of emotional-social intelligence (ESI). *Psicothema*, 18, 13–25. Retrieved from http://www.psicothema.com/pdf/3271.pdf

Bloom, B. S. (1986). What we are learning about teaching and learning: a summary of recent research. *Principal, 66*, 6–10.

Bozdağ, B. (2020). Examination of Psychological Resilience Levels of High School Students. *World Journal of Education, 10*(3), 65–78. https://doi.org/10.5430/wje.v10n3p65

Brackett, M. A., & Mayer, J. D. (2003). Convergent, discriminant and incremental validity of competing measures of emotional intelligence. *Personality and Social Psychology Bulletin, 29*, 1147–1158. https://doi.org/10.1177/0146167203254596

Browne, M. W., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods and Research, 21*, 230–258. https://doi.org/10.1177/0049124192021002005

Buckley, K., Bowman, B., Raney, E., Afolabi, T., Fettkether, R. M., Larson, S., Tennant, S., & Goodlet, K. J. (2020). Enhancing the emotional intelligence of student leaders within an accelerated pharmacy program. *American Journal of Pharmaceutical Education, 84*(11), 8056. https://doi.org/10.5688/ajpe8056

Cabello, R., Sorrel, M. A., Fernández-Pinto, I., Extremera, N., & Fernández-Berrocal, P. (2016). Age and gender differences in ability emotional intelligence in adults: A cross-sectional study. *Developmental Psychology, 52*(9), 1486–1492. https://doi.org/10.1037/dev0000191

Cachia, R., Lynam, S., & Stock, R. (2018). Academic success: Is it just about the grades? *Higher Education Pedagogies, 6*, 434–439. https://doi.org/10.1080/23752696.2018.1462096

Castillo, R., Salguero, J. M., Fernández-Berrocal, P., & Balluerka, N. (2013). Effects of an emotional intelligence intervention on aggression and empathy among adolescents. *Journal of Adolescence, 36*(5), 883–892. https://doi.org/10.1016/j.adolescence.2013.07.001

Chew, B. H., Zain, A. M., & Hassan, F. (2013). Emotional intelligence and academic performance in first and final year medical students: A cross-sectional study. *BMC Medical Education, 13*, 44. https://doi.org/10.1186/1472-6920-13-44

Costa, A., & Faria, L. (2020). Implicit theories of emotional intelligence, ability and traitemotional intelligence and academic achievement. *Psychological Topics, 29*(1), 43–61. https://doi.org/10.31820/pt.29.1.3

Côté, S. (2017). Enhancing managerial effectiveness via four core facets of emotional intelligence: Self-awareness, social perception, emotion understanding, and emotion regulation. *Organizational Dynamics, 46*(3), 140–147. https://doi.org/10.1016/j.orgdyn.2017.05.007

Davis, A. J. (2012). Examining gender and socio-economic status on the emotional intelligence of early adolescents. *PCOM Psychology Dissertations,* Paper 211.

Deng, Y., Chang, L., Yang, M., Huo, M., & Zhou, R. (2016). Gender differences in emotional response: Inconsistency between experience and expressivity. *PLoS ONE, 11*(6), e0158666. https://doi.org/10.1371/journal.pone.0158666

Díaz-Herrero, Á., Gonzálvez, C., Sanmartín, R., Vicent, M., Lagos-San Martín, N., Inglés, C. J., & García-Fernández, J. M. (2018). Profiles of emotional intelligence and demotivation to attend school in Chilean adolescents. *Motivation and Emotion, 42*(6), 947–959. https://doi.org/10.1007/s11031-018-9712-4

Downey, L. A., Mountstephen, J., Lloyd, J., Hansen, K., & Stough, C. (2008). Emotional intelligence and scholastic achievement in australian adolescents. *Australian Journal of Psychology, 60*, 10–17. https://doi.org/10.1080/00049530701449505

Ebrahimi, M. R., Khoshsima, H., & Zare-Behtash, E. (2018). The impacts of emotional intelligence enhancement on iranian intermediate EFL learners writing skill. *International Journal of Instruction, 11*(1), 437–452. https://doi.org/10.12973/iji.2018.11130a

Esmaeili, F., Behnam, B., & Ramazani, A. (2018). A study of relationship between emotional intelligence and writing ability. *The Journal of Applied Linguistics and Discourse Analysis, 3*(1), 41–63. https://doi.org/10.22049/JALDA.2018.13685

Estaji, M., & Shahmoradi, Y. (2016). The Interplay of Emotional Intelligence, EFL Students' Gender, and their Writing Performance: A Correlational Study of Iranian University Students. *Applied Research on English Language*, 5(2), 173–190. https://doi.org/10.22108/are.2016.20425

Fida, A., Ghaffar, A., Zaman, A., & Satti, A. N. (2018). Gender comparison of emotional intelligence of university students. *Journal of Education and Educational Development, 5*(1), 172–188. https://doi.org/10.22555/joeed.v5i1.2046

Fiori, M., & Vesely-Maillefer, A. K. (2019). Emotional intelligence as an ability: Theory, challenges, and new directions. In K. V. Keefer, J. Parker, & D. Saklofske (Eds.), *Emotional Intelligence in Education*. Berlin: Springer. https://doi.org/10.1007/978-3-319-90633-1_17

Fischer, A. H., Kret, M. E., & Broekens, J. (2018). Gender differences in emotion perception and self-reported emotional intelligence: A test of the emotion sensitivity hypothesis. *PLoS ONE, 13*(1), e0190712. https://doi.org/10.1371/journal

Gebremariam, H. T., & Asgede, D. M. (2023). Effects of students' self-reflection on improving essay writing achievement among Ethiopian undergraduate students: A counterbalanced design. *Asian-Pacific Journal of Second and Foreign Language Education, 8*(1), 1–21. https://doi.org/10.1186/s40862-023-00203-7

Gebremariam, H. T., & Hiluf, B. (2023). Using need-based writing instruction through self-reflection to improve students' writing difficulties: A counterbalanced design. *International Journal of Educational Research Open, 5*, 100293. https://doi.org/10.1016/j.ijedro.2023.100293

Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ*. Bantam Books.

Goleman, D. (1998). *Working with emotional intelligence*. Bantam Books.

Gong, M., & Archer, L. A. C. (2021). Emotional intelligence in educational leadership doctoral students: Examining association based on gender and age. *International Journal of Multidisciplinary Perspectives in Higher Education*, 6(1), 78–101. Retrieved from https://ojed.org/jimphe

Halimi, F., AlShammari, I., & Navarro, C. (2021). Emotional intelligence and academic achievement in higher education. *Journal of Applied Research in Higher Education, 13*(2), 485–503. https://doi.org/10.1108/JARHE-11-2019-0286

Harrod, N. R., & Scheer, S. D. (2005). An Exploration of Adolescent Emotional Intelligence in Relation to Demographic Characteristics. *Adolescence, 40*(159), 503–512.

Haynes, N. (2021). Influence of social and emotional learning (SEL) on students' academic achievement and prosocial behaviors: an overview. *Academia Letters*. https://doi.org/10.20935/AL3039

Kant, R. (2019). Emotional intelligence: A study on university students. *Journal of Education and Learning, 13*(4), 441–446. https://doi.org/10.11591/edulearn.v13i4.13592

Karimi, J., Kwena, A. J., & Anika, A. (2020). Emotional intelligence and academic achievement among secondary school students in Kilifi County, Kenya: A Correlational Study. *Journal of Research Innovation and Implications in Education, 4*(2), 32–42. https://doi.org/10.37899/journallaedusci.v1i2.91

Khatoon, A., Afzal, A., & Ijaz, B. (2020). Effects of emotional intelligence on students academic performance. *Journal La Eduscl, 1*(2), 13–18. https://doi.org/10.37899/journallaedusci.v1i2.91

Kline, R. B. (2015). *Principles and Practice of Structural Equation Modeling* (4th ed.). New York: Guilford Press.

Lara, E., & Forsman, A. K. (2023). Editorial: Relationship between subjective well-being and mental disorders across the lifespan. *Frontiers in Psychology, 14*, 1268287. https://doi.org/10.3389/fpsyg.2023.1268287

Libbrecht, N., Lievens, F., Carette, B., & Côté, S. (2014). Emotional intelligence predicts success in medical school. *Emotion, 14*(1), 64–73. https://doi.org/10.1037/a0034392

Linares, M. C. G., Fernandez, M. V. C., Rusillo, M. T. C., & Arias, P. F. C. (2018). Emotional intelligence profiles in college students and their fathers' and mothers' parenting practices. *Journal of Adult Development, 25*(4), 242–250. https://doi.org/10.1007/s10804-018-9286-0

MacCann, C., Jiang, Y., Brown, L. E. R., Double, K. S., Bucich, M., & Minbashian, A. (2020). Emotional intelligence predicts academic performance: A metaanalysis. *Psychological Bulletin, 146*(2), 150–186. https://doi.org/10.1037/bul0000219

Masgoret, A.-M., & Gardner, R. C. (2003). Attitudes, motivation, and second language learning: A meta-analysis of studies conducted by Gardner and Associates. *Language Learning, 53*(1), 123–163. https://doi.org/10.1111/1467-9922.00212

Masoomeh, E., & Yalda, S. (2016). The interlay of emotional intelligence, EFL student's gender, and their writing performance: a correlational study of iranian university students. *Applied Research on English Language. 5*(2). Retrieved from: https://uijs.ui.ac.ir/are

Mayer, J. D., Salovey, P., & Caruso, D. (2008). Emotional intelligence: New ability or eclectic traits? *American Psychologist, 63*(6), 503–517. https://doi.org/10.1037/0003-066X.63.6.503

Meshkat, M., & Nejati, R. (2017). Does emotional intelligence depend on gender? A study on undergraduate English majors of three Iranian universities. *SAGE Open, 7*(3), 1–8. https://doi.org/10.1177/2158244017725796

Mohammadi, Z., & Izadpanah, S. (2018). The effect of emotional intelligence and gender on writing proficiency of Iranian EFL learners. *Journal of Language Teaching and Research, 9*(1), 164–174. https://doi.org/10.17507/jltr.0901.21

Myfanwy, B., Sarah, P. M., & Helen, C. T. (2013). Gender difference in adolescents' academic motivation and classroom behavior. *Educational Psychology*. https://doi.org/10.1080/01443410.2013.849325

Naidoo, O., Christopher, C., Lingah, T., & Moran, M. (2023). The Kawa model: A self-refection tool for occupational therapy student development in practice placements in Australia. *Occupational Therapy International*. https://doi.org/10.1155/2023/2768898

Nasihah, M., & Cahyono, B. Y. (2017). Language learning strategies, motivation, and writing achievement of Indonesian EFL Students. *Arab World English Journal*. https://doi.org/10.24093/awej/vo18no1.18

Nwadinigwe, I. P., & Azuka-Obieke, U. (2012). The impact of emotional intelligence on academic achievement of senior secondary school students in Lagos, Nigeria. *Journal of Emerging Trends in Educational Research and Policy Studies, 3*(4), 395–401.

Nyarko, F., Peltonen, K., Kangaslampi, S., & Punamaki, R. (2020). Emotional intelligence and cognitive skills protecting mental health from stress and violence among Ghanaian youth. *Heliyon, 6*(5), 103878. https://doi.org/10.1016/j.heliyon.2020.e03878

Okello, M. L., & Aomo, A. J. (2018). Relationship between emotional intelligence and suicidal behaviour among secondary school students in Kitutu Central SubCounty, Kisii County, Kenya. *International Journal of Educational Policy Research and Review, 5*(7), 109–116. https://doi.org/10.15739/IJEPRR.18.013

Patel, S. K. (2017). Emotional intelligence of college level students in relation to their gender. *The International Journal of Indian Psychology, 4*(2), 2349–3429. https://doi.org/10.25215/0402.056

Petrides, K. V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. *British Journal of Psychology, 98*(2), 273–289. https://doi.org/10.1348/000712606X120618

Pishghadam, R. (2009). A quantitative analysis of the relationship between emotional intelligence and foreign language learning. *Electronic Journal of Foreign Language Teaching, 6*(1), 32–43.

Rad, R. S., Khojasteh, L., & Kafipour, R. (2014). The Relationship between Multiple Intelligences and Writing Skill of Medical Students in Iran. Islamic Azad University, Fars Science and Research Ranch Iran. *Acta Didactica Napocensia., 7*(3), 2–12.

Radu, C. (2014). Emotional intelligence – How do we Motivate our students? *Procedia - Social and Behavioral Sciences, 141*, 271–274. https://doi.org/10.1016/j.sbspro.2014.05.047

Ranjbar, H., Khademi, S. H., & Areshtanab, H. N. (2017). The relation between academic achievement and emotional intelligence in Iranian students: A metaanalysis. *Acta Facultatis Medicae Naissensis, 34*, 65–76. https://doi.org/10.1515/afmnai2017-000

Sahle, S., Siawk, Y. A., & Gebremariam, H. T. (2023). Effects of peer-editing on L2 writing achievement among secondary school students in Ethiopia. *Cogent Education, 10*(1), 2211467. https://doi.org/10.1080/2331186X.2023.2211467

Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition and Personality, 9*(3), 185–211. https://doi.org/10.2190/2FDUGG-P24E-52WK6CDG

Salovey, P., Mayer, J. D., & Caruso, D. (2002). The positive psychology of emotional intelligence. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 159–171). Oxford University Press.

Salovey, P., Mayer, J. D., Caruso, D., & Lopes, P. N. (2003). Measuring Emotional Intelligence as a Set of Abilities with the Mayer-Salovey-Caruso Emotional Intelligence Test. In S. J. Lopez & C. R. Snyder (Eds.), *Positive Psychological Assessment: A Handbook of Models and Measures* (pp. 251–265). American Psychological Association.

Sánchez-Álvarez, N., Extremera, N., & Fernández-Berrocal, P. (2016). The relation between emotional intelligence and subjective well-being: A meta-analytic investigation. *The Journal of Positive Psychology, 11*(3), 276–285. https://doi.org/10.1080/17439760.2015.1058968

Sarkar, S., & Banerjee, S. (2019). Gut microbiota in neurodegenerative disorders. *Journal of Neuroimmunology, 328*, 98–104. https://doi.org/10.1016/j.jneuroim.2019.01.004

Saro, J. M., Apat, J. Q., & Pareja, M. S. (2023). A descriptive-correlational study of the teachers' motivation, competences, and perceptions in writing action research. *J Adv Educ Philos, 7*(1), 14–24. https://doi.org/10.36348/jaep.2023.v07i01.003

Saud, W. I. (2019). Emotional Intelligence and its relationship to academic performance among Saudi EFL undergraduates. *International Journal of Higher Education, 8*(6), 222–230. https://doi.org/10.5430/ijhe.v8n6p222

Sen, A., Thulasingam, M., Olickal, J., Sen, A., Kalaiselvy, A., & Kandasamy, P. (2020). Emotional intelligence and perceived stress among undergraduate students of arts and science colleges in Puducherry, India: A cross-sectional study. *Journal of Family Medicine and Primary Care, 9*(9), 4942–4948. https://doi.org/10.4103/jfmpc.jfmpc_823_20

Sepideh, N., Nasrin, S., & Zahra, S. (2017). The Relationship between Intrinsic/Extrinsic Motivation and Medical Students' L2 Writing. *Khazar Journal of Humanities and Social Sciences, 20*(4), 71–81. https://doi.org/10.5782/2223-221.20.4071

Shao, K. Q., Yu, W. H., & Ji, Z. M. (2013). The Relationship between EFL Students' Emotional Intelligence and Writing Achievement. *Innovation in Language Learning and Teaching, 7*(2), 107–124. https://doi.org/10.1080/17501229.2012.725730

Simba, N. O., Agak, J. O., & Kabuka, E. K. (2016). Impact of discipline on academic performance of pupils in public primary schools in Muhoroni sub-county, Kenya. *Journal of Education and Practice*, 7(6), 164–173. Retrieved from https://eric.ed.gov/?id=EJ1092484

Simonet, D. V., Miller, K. E., Askew, K. L., Sumner, K. E., Mortillaro, M., & Schlegel, K. (2021). How multidimensional is emotional intelligence? Bifactor modeling of global and broad emotional abilities of the Geneva Emotional Competence Test. *Journal of Intelligence, 9*(1), 14. https://doi.org/10.3390/jintelligence9010014

Smedt, F. D., Graham, S., & Keer, H. V. (2018). The bright and dark side of writing motivation: Effects of explicit instruction and peer assistance. *The Journal of Educational Research, 112*(2), 152–167. https://doi.org/10.1080/00220671.2018.1461598

Socas, J. (2017). Infusing social and emotional learning (SEL) into the community college curriculum. *Community College Journal of Research and Practice, 41*(12), 901–904. https://doi.org/10.1080/10668926.2016.1244497

Stevens, J. S., & Hamann, S. (2012). Sex differences in brain activation to emotional stimuli: A meta-analysis of neuroimaging studies. *Neuropsychologia, 50*(7), 1578–1593. https://doi.org/10.1016/j.neuropsychologia.2012.03.011

Suleman, Q., Hussain, I., Syed, M. A., Parveen, R., Lodhi, I. S., & Mahmood, Z. (2019). Association between emotional intelligence and academic success among undergraduates: A cross-sectional study in KUST Pakistan. *PLoS ONE, 14*(7), e0219468. https://doi.org/10.1371/journal.pone.0219468

Sundararajan, S., & Gopichandran, V. (2018). Emotional intelligence among medical students: A mixed methods study from Chennai, India. *BMC Medical Education, 18*, 1–9. https://doi.org/10.1186/s12909-018-1213-3

Troia, G. A., Olinghouse, N. G., Mo, Y., Hawkins, L., Kopke, R. A., Wilson, J., & Stewart, A. (2015). Academic standards for writing: To what degree do standards signpost evidence-based instructional practices and interventions? *The Elementary School Journal, 116*(2), 291–321.

Van Rooy, D. L., Alonso, A., & Viswesvaran, C. (2005). Group differences in emotional intelligence test scores: Theoretical and practical implications. *Personality and Individual Differences, 38*(3), 689–700. https://doi.org/10.1016/j.paid.2004.05.023

Waiswa, H. C. A, Baguma, P. P. K., & Oonyu, A. P. J. (2020). Emotional intelligence and academic achievement among university upgrading (grade v) teacher students. *African Journal of Education and Practice*, 6(4), 39–64. Retrieved from https://www.iprjb.org/journals/index.php/AJEP/article/view/1095

Yvonne, S., & Brown, S. L. (2004). *Review of the Emotional Intelligence Literature and Implications for Corrections*. Research Branch Correctional Service of Canada

Zimmerman, B. J., & Risemberg, R. (1996). Caveats and recommendations about self-regulation of writing: a social cognitive rejoinder. *Contemporary Educational Psychology, 22*(1), 115–122. https://doi.org/10.1006/ceps.1997.0921

Zohreh, M., & Izadpanah, S. (2018). The effect of emotional intelligence and gender on writing proficiency of Iranian EFL learners. *Journal of Language Teaching and Research*, 9(1), 164–178. Gale Academic OneFile, www.link.gale.com/apps/doc/A626044266/AONE?u=anon~3c30dae0&sid=googleScholar&xid=6c4a397a. Accessed 31 Dec. 2022.

Zysberg, L. (2018). Emotional intelligence and health outcomes. *Psychology, 9*, 2471–2481. https://doi.org/10.4236/psych.2018.911142

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