The relationship between emotional intelligence and complexity, accuracy and fluency in EFL learners' oral performance

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Abstract

Over the last three decades, emotional intelligence (EI) has received considerable empirical attention especially in academic context. Following this line of research, the study reported in this paper investigated the relationship between trait EI and EFL learners' second language (L2) oral performance. A sample of 102 Iranian EFL students, all between 13 and 18 years old (approximately half male and half female), performed an oral narrative task under laboratory conditions and completed the trait emotional intelligence questionnaire-adolescent short form (TEIQue-ASF), which is used to measure global trait EI. The correlational analysis of the results indicated a positive relationship between EI and learners' L2 oral performance as measured in terms of complexity, accuracy and fluency. Those with higher degree of EI were able to produce more accurate and complex language. The relationship between EI and fluency measures, however, did not reach significance. Findings of this study point to the importance of focusing on learners' emotions and finding strategies to foster it.

Keywords: Emotional intelligence, accuracy, complexity, fluency, language achievement.

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1. Introduction

The concept of emotional intelligence (EI) was born in 1990 in the pioneering work of Peter Salovey and John D. Mayer who later defined it as 'the ability to accurately perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth' (Mayer & Salovey, 1997, p. 5). This idea was consistent with earlier research on social intelligence (Ford & Tisak, 1983) and Gardner's (1993) intrapersonal and interpersonal intelligences. Ever since, different studies have been carried out to unravel what EI is, how it is measured and implemented and what can be done to improve it (Dacre Pool & Qualter, 2012; Hunt & Evans, 2004; Viguer, Cantero & Banuls, 2017).

Research has shown that both cognitive abilities, which are stable over time, and emotional competencies, which can be learned and enhanced over one's life span, are good predictors of successful adaptation (Goleman, 1995; Parker, Summerfeldt, Hogan & Majeski, 2004; Song et al., 2010). The host of recent studies in the field of EI point to its significant role in the quality of one's performance in the academia (Costa & Faria, 2015; Perara, 2016; Petrides, Frederickson & Furnham, 2004). This may be attributed to the fact that EI correlates with improvements in children's academic motivation, learning and achievement (Dai & Sternberg, 2004; Dornyei, 2009).

The relationship between EI and foreign language learning has been neglected until recently (Abdolrezapour, 2017; Abdolrezapour & Tavakoli, 2012; Aliakbari & Abol-Nejadian, 2015; Dewaele, Petrides & Furnham, 2008). Abdolrezapour and Tavakoli (2012) found a high positive correlation between one's achievement in reading comprehension and her or his EI. In addition, greater achievement in reading comprehension was found for those who had been through literature response activities which were used to foster their EI. Aliakbari and Abol-Nejadian (2015), in their investigative attempt, pointed to the relation between EI and learning styles preferences of Iranian EAP learners. With regard to the relationship between EI and EFL learners' oral speech, Abdolrezapour (2017) found a significant relationship between EI and EFL learners' oral fluency and she pointed to the possibility of enhancing EI through computer-mediated emotional activities. As L2 performance has three linguistic subcomponents and due to limited attentional resources, attending to all complexity, accuracy and fluency (CAF) components simultaneously is not possible, one question comes into one's mind and that is the possible relationship between these three subcomponents, namely accuracy, fluency and complexity and EFL learners' EI. This study was designed to examine the relationship between EI and EFL learners' task performance in terms of accuracy, fluency and complexity.

2. Literature review

2.1. Emotional intelligence (EI)

The idea of EI is a longstanding one, traceable as early as Platonic dialogues, as can be seen from the written records of Plato, 'All learning has an emotional base' (cited in Sharp, 2001, p. 8). The impetus for the increasing interest in EI, however, began with two seminal articles in 1990 (Mayer, DiPaolo & Salovey, 1990; Salovey & Mayer, 1990). Mayer and Salovey (1997) enhanced the ability model—a theoretical model according to which EI consists of emotional abilities—which was later contrasted with trait-based models, suggesting that EI encompasses a variety of emotional skills, including aspects of personality (Petrides & Furnham, 2001). This latter definition of EI guided the present research. It conceives of EI as a multifaceted construct entailing 13–15 (depending on the model) emotion-related behavioural dispositions which are thought to affect the ways in which an individual would cope with the demands and pressures. In addition, the trait EI models measure EI through personality-like questionnaires rather than intelligence-like tests used in ability models.

It should be pointed that the two faculties related to socio-emotional competence—i.e., *inter*personal and *intra*personal intelligences proposed by Gardner (1993)—are in line with Goleman's (1995) conceptualisation of the notion of EI, according to which EI is a combination of five

characteristics: (1) knowing one's emotion, (2) managing one's emotion (i.e., handling fear, anxiety), (3) motivating oneself (emotional control, the ability to delay gratification), (4) recognising emotions in others and (5) handling relationships. Goleman's main idea was that it is possible to enhance one's EI at any time over his life's span and this idea has been discussed in a number of studies (e.g., Dacre Pool & Qualter, 2012; Hunt & Evans, 2004; Matthews, Zeidner & Roberts, 2007; Viguer et al., 2017).

2.2. EI and academic performance

A growing number of scientific investigations have suggested that there is merit to the idea that EI is associated with academic performance. For instance, Costa and Faria (2015) investigated the predictive validity of EI over academic achievement of 380 Portuguese students at secondary school. Results of their study revealed that EI skills were a significant predictor of academic achievement. In another investigative attempt, Parker et al. (2004) studied the relationships between EI and academic achievement in a sample of high school students. Students were placed into one of three groups based on their averages (successful, average and less successful). Matching students' academic averages with their scores on the Emotional Quotient Inventory: Youth Version (EQ-i: YV, Bar-On & Parker, 2000) showed that successful students scored significantly higher than the other two groups on the interpersonal, adaptability, stress management and total EI scales of the EQ-i: YV.

In another attempt, Petrides et al. (2004) examined the relationships among EI, cognitive ability and academic performance in a British sample of 650 Grade 11 students. Academic success was operationalised as the standardised test results from the General Certificate of Secondary Education (the principal means of assessing academic achievement at the end of compulsory secondary education in the UK). They found that EI moderated the relationship between academic performance and cognitive ability.

Qualter, Gardner, Pope, Hutchinson and Whiteley (2012), in another study, investigated associations between ability and trait-EI and academic achievement, when other important non-cognitive factors (personality) and cognitive ability (IQ) were controlled, on a sample of 413 students (199 males and 214 females) British adolescents in mainstream education. Their results pointed to the importance of ability EI in moderating the effect of cognitive ability on students' performance while the direct effect of trait EI was only confirmed for boys.

2.3. EI and L2 oral performance

The roles of emotional factors in foreign or second language learning contexts have been addressed with reference to a number of methodologies such as Suggestopedia and some models such as Krashen's Monitor Model (see Pishghadam, 2009). More recently a growing body of literature has begun to support the predictive validity of EI in EFL or ESL contexts (Abdolrezapour, 2017; Abdolrezapour & Tavakoli, 2012; Aliakbari & Abol-Nejadian, 2015; Dewaele et al., 2008). For example, Dewaele et al. (2008) conducted a study to find the effect of trait EI on foreign language anxiety (FLA) which was defined as 'the feeling of tension and apprehension specifically associated with second language (L2) contexts, including speaking, listening and learning' (MacIntyre & Gardner, 1994, p. 284). Results of their study pointed to a negative relationship between trait EI and FLA. Aki (2006) considered EI, i.e., having the ability to recognise, employ, comprehend and manage emotions, more important in language learning than possessing high intelligence values.

Following Hymes (1972), it can be argued that the knowledge of how to speak appropriately is closely linked to the attitudes, values and motivation the speaker has regarding the language and its uses. And the results of Segalowitz (1976) indirectly point to the implication of Hymes' idea for L2 fluency acquisition. Dewaele (2002) elaborates more on the relationship between individual differences and L2 fluency. He conducted a study to find the possible neurobiological causes for *synchronic* variation in the fluency of L2 production. He argued that this variation might be intra-individual, which differs from one situation to another, or inter-individual, i.e., it differs between users

who have been through a similar learning process in a formal setting. The results showed that introvert and anxious L2 users are likely to produce less fluent speech. So, it was found that individual differences would affect L2 speech fluency.

Less attention has been paid to the effects of EI on foreign language speech production by adult L2 users, which is not a monolithic construct. In recent years, following Crookes (1989) and Skehan (1996, 1998, 2009), this construct has been operationalised and measured in terms of three principal dimensions—i.e., CAF. Complexity is defined as 'the capacity to use more advanced language' (Skehan & Foster, 1999, p. 96) and pertains to learners' tendency to take risks to use the cutting edge of their linguistic knowledge which may ultimately lead to the process of restructuring (Ellis, 2008; Ellis & Barkhuizen, 2005). While, accuracy is defined as 'the ability to avoid error in performance' (Skehan & Foster, 1999, p. 96) and relates to learners' attempts to avoid producing erroneous forms (Ellis, 2008). The third dimension, i.e., fluency can be defined as 'the capacity to produce speech at normal rate and without interruption' (Skehan, 2009, p. 510) or as 'the production of language in real time without undue pausing or hesitation' (Ellis & Barkhuizen, 2005, p. 139).

Trait EI concerns individual differences in emotion-related self-perceptions, such as emotion control, emotion expression, empathy and adaptability. High trait EI individuals are believed to be able to regulate their emotional reactions over time, manage stress and be assertive (Petrides & Furnham, 2001). Clearly, there is an important opportunity here—as yet largely unrealised—to study the ways EI interacts with CAF issues. Therefore, I hypothesised that high trait EI individuals would be more confident in their ability to communicate effectively and produce more complex, accurate and fluent speech.

3. Research questions

The aim of this study was to develop a greater understanding of the way EI might correlate with L2 task performance. As it was discussed above, there is ample theoretical and empirical evidence in support of the link between EI and academic success, but the relationships between EI and second language skills have not been fully investigated. Hence, by drawing upon the previous research studies on EI and employing the measures of CAF used in previous studies, the following research question was formulated:

Is there any relationship between EI and L2 oral performance as measured in terms of complexity, accuracy and fluency? Based on the theoretical and empirical evidence which supported the link between EI and academic success and following Dewaele et al. (2008) and Abdolrezapour (2017), it was hypothesised that there is a positive relationship between EI and L2 oral performance.

4. Method

4.1. Participants

The participants of this study included 102 EFL learners, all between 13 and 18 years old (approximately half male and half female), studying Interchange 2 in a language centre in Iran. They were offered a small payment in compensation for the time spent and promised feedback on their performance. The placement test (i.e., Oxford Placement Test 2, Allan, 1992) was administered to ensure the homogeneity of learners, who were native speakers of Farsi and had a similar language learning history but they differed in terms of the period of time they had been studying English in the past, the exposure they had to English outside the classroom and the purposes for which they were studying English.

4.2. Instruments

For the purpose of the present study, a number of instruments were used, which will be described in order.

4.2.1. Trait emotional intelligence questionnaire-adolescent short form (TEIQue-ASF)

As it was mentioned before, this study is focused on *trait* EI. Trait EI, assessed by self-report, is regarded as an emotion-related dispositional trait which is a lower-level component of personality (Petrides, Pita & Kokkinaki, 2007). In this study, the short form of the trait emotional intelligence questionnaire-adolescent short form (TEIQue) (Petrides, Sangareau, Furnham & Frederickson, 2006) comprised of 30 items was used to measure the students' EI. TEIQue-ASF is a simplified version, in terms of wording and syntactic complexity, of the adult short form of the TEIQue developed for use with adolescents aged 12 and 18 years. All items are sampled from the 15 subscales of the adult trait EI sampling domain (two items per subscale). The test yields scores on four factors, namely well-being (covering self-esteem, happiness and optimism), self-control (covering low impulsiveness, stress management and emotion regulation), emotionality (covering emotion expression, relationships, empathy and emotion perception) and sociability (covering assertiveness, emotion management and social awareness) in addition to global trait EI. Example items include 'I can control my anger when I want to', 'I'm happy with my life' and 'I'm good at getting along with my classmates'. Higher scores on the TEIQue-ASF indicated higher levels of trait EI. We opted for the short version with 10-minute completion time, because we had time limitation and there was a concern that individuals might not be able to complete the longer version (e.g., due to reading difficulties). Subjects responded on a 7-point Likert scale continuum from 'Completely Disagree (number 1)' to 'Completely Agree (number 7)'. In this study the reliability of the test was found to be high (Cronbach's α = 0.92). Factor analyses also provide some support for the construct validity of the questionnaire.

4.2.2. Tasks and procedures

Following the administration of TEIQue-ASF (Petrides et al., 2006) test, an oral narrative task was employed to elicit oral language performance. In this task a sequenced set of picture prompts were shown to the participants while they were asked to narrate the story. To ensure the suitability of the narrative task for these participants and for our research purpose, other teachers of the same level and researchers who have used narrative tasks in their research were consulted.

4.2.3. Measurement of the dependent variables

Most SLA researchers agree that facets of L2 oral performance are themselves multifaceted and entail several sub-constructs; therefore, there is a need for using multiple measures for assessing each construct (Housen & Kuiken, 2009). Nevertheless to avoid what Norris and Ortega (2009) call redundancy in measurement, researchers are recommended to use complementary but distinct measures for assessing each principal construct. In the present research, drawing on the host of studies into the CAF triad (Foster, Tonkyn & Wigglesworth, 2000; Ellis & Yuan, 2004; Yuan & Ellis, 2003) the following measures were used to assess three major dimensions of second language oral performance:

Complexity measures:

- Syntactic complexity (amount of subordination): the ratio of clauses to AS-units (the Analysis of Speech Unit) in the participants' production. Following Foster et al. (2000), the AS unit, defined as '… a single speaker's utterance consisting of an independent clause or sub-clausal unit, together with any subordinate clause(s) associated with it' (Foster et al., 2000), was used as a unit for measuring syntactic complexity.
- Syntactic variety: the total number of different grammatical verb forms used in participants' performances. I used tense and modality as grammatical verb forms for the analysi*s.*

Accuracy measures:

- Error-free clauses: the percentage of the clauses which were not erroneous. Error-free clauses were defined as clauses in which no error was seen with regard to syntax, morphology, native-like lexical choice or word order.
- Correct verb forms: the percentage of all verbs which were used correctly in terms of tense, aspect, modality and subject-verb agreement.

Fluency measures:

- Rate A (number of syllables produced per minute of speech): the number of syllables within each narrative, divided by the number of seconds used to complete the task and multiplied by 60.
- Rate B (number of meaningful syllables per minute of speech): Rate A's procedure was followed again, but all syllables, words, phrases that were repeated, reformulated or replaced excluded.

4.2.4. Data collection and data analysis

All narrations produced by EFL learners were audio-recorded and then transcribed by the researcher and two expert research colleagues. The data were then coded for CAF measures. A sample of 10% of the data transcripts were rated by a second researcher and inter-coder reliability mean score of 95% was achieved on all measures. In order to provide plausible answers to the research question posed above, first, descriptive statistics were used and the obtained scores were checked in terms of the normality of distribution via such indices as Kurtosis and Skewness. Then, Pearson Product correlation procedures were performed. The results of these statistical procedures are presented in the following section.

5. Results

The research question underlying this study asked whether there is any correlation between L2 speaking performance and EI. Table 1 shows the descriptive statistics including mean scores of TEIQue-ASF and the scores obtained from participants' performances on the oral narrative task. The mean scores and standard deviations are displayed for all measures.

Table 1. Descriptive statistics for TEIQue-ASF and task performance measures

Variables	*N*	Mean	SD
TEIQUE-ASF	102	120.40	4.65
Syntactic complexity	102	0.693	0.09
Syntactic variety	102	4.21	0.32
Percentage of correct verb form	102	42.11	4.2
Percentage of error free clauses	102	35.68	2.11
Number of syllables produced per minute of speech	102	31.21	3.2
Number of meaningful syllables per minute of speech	102	25.12	2.7

To see whether there is any association between EI and L2 task performance, Pearson Product correlation was performed. Table 2 presents the correlations between the scores on TEIQue-ASF and the scores on all measures. The patterns of correlations were generally consistent with our expectations. Overall, as the results suggest, high EI were related to more complex ($r = 0.87$, $p = 0.00$ for syntactic complexity and $r = 0.66$, $p = 0.02$ for syntactic variability), more accurate ($r = 0.71$, $p = 0.00$ for the percentage of correct verb form and $r = 0.62$, $p = 0.04$ for the percentage of error free clauses) and more fluent ($r = 0.69$, $p = 0.06$ for the number of syllables produced per minute and $r = 0.71$, $p = 0.09$ for the number of meaningful syllables per minute) speech. This shows that subjects' EI positively correlated with their performance in speaking activities.

Table 2. Correlations between EI and task performance measures

Variables	*Pearson correlation*	*Sig. (1-tailed)*
Syntactic complexity	0.87	0.00*
Syntactic Variety	0.66	0.02*
Percentage of correct verb form	0.71	0.00*
Percentage of error free clauses	0.62	0.04*
Number of syllables produced per minute of speech	0.69	0.06
Number of meaningful syllables per minute of speech	0.71	0.09

*Shows the existence of the significant relationship at the level of 0.05.

6. Discussion

The findings of this study on the correlations amongst measures of speaking task performance and a trait EI measure provide both interesting information and suggestions for further work. Significant correlations were found between complexity and accuracy measures of task performance and trait EI and non-significant but a high positive correlation between fluency and trait EI, suggesting that emotional factors account in part for performance in speaking task performance. Those with scored higher in TEIQUE-ASF were more fluent, more accurate and produced more complex speech.

A number of studies have documented empirical evidence in support of the positive relationships between EI and academic success (Parker et al., 2004; Perara, 2016). Also, there is some evidence indicating that EI and second language performance are positively related (Abdolrezapour, 2017; Aki, 2006; Aliakbari & Abol-Nejadian, 2015). In this regard, then, this study complements and contributes to the existing body of evidence confirming the impact of EI on academic success in general and L2 oral performance in particular (Abdolrezapour, 2017). Moreover, the positive correlation between fluency and EI partly confirmed Abdolrezapour (2017) and Dewaele's (2002) findings in that it confirmed the importance of individual difference factors in one's success in fluency.

It is largely accepted that learners' attitudes and beliefs towards the second language can be associated with the level of language attainment. And based on our results, learners with high EI are more successful in second language speech performance. One of the interesting findings regarding their speech was the centrality of fixed or formulaic expressions. Some expressions like *as can be seen, in the first picture,* etc. were some formulaic forms used by those with high EI, which made their speech more fluent and more complex.

As a result of repressed fear, anxiety, anger and unrealistic expectations rather than linguistic inability, learners and particularly second language learners are often unlikely to learn much in the classroom. These conditions have a negative effect on their EI and they might end up acting in unsuccessful ways. Those with high EI would be more eager to encounter new situations and past failures would not inhibit their performance. Thus, the teacher needs to focus on areas of language used to express emotions, and on classroom techniques which will reduce tension and to foster an emotionally positive atmosphere.

An important paedagogical implication which follows from the findings of this study is that in order to have more efficient and effective language instruction, language centres need to encourage teachers to use instructional techniques which raise EFL learners' EI. Training EI in schools may indeed offer a solution to educational problems, but interventions must be soundly based in psychological theory and careful definition and analysis of emotional competencies. Of course, this does not mean to create an additional class for teaching emotional skills but to add lessons on emotions with other topics.

The findings from this study suggest a number of directions for further work. In order to assess the associations between performance on L2 speaking tasks and trait EI in more detail, experimental studies which tap into the use of emotional activities and exploring their effectiveness are clearly of interest. Establishing associations between the use of emotional tasks and achieving better performance on other L2 skills is also of interest, as is the examination of associations between a wider range of trait EI measures and second language performance.

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