



Original

Reading Intervention: Correlation Between Emotional Intelligence and Reading Competence in High School Students[☆]

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ABSTRACT

In the present work, a reading intervention program was carried out in high school students during two academic years, in order to evaluate its effectiveness on reading comprehension and emotional intelligence. 521 high school students participated, of which 244 are male students and 277 are female students. In the intervened group ($n = 258$) the reading is explained by meaning of tokens, 30 random juvenile readings are chosen and read at home by the students, without working on reading competence or emotional intelligence in a specific way, nor the construct of the motivation. In the control group ($n = 263$), the guidelines specified in the current curriculum published by the Ministry of Education of the Junta de Andalucía are followed. The results show an increase in reading comprehension and emotional intelligence in the experimental group after the intervention. The results point to a direct relationship between reading habits, reading competence and emotional intelligence, in the same way, the results in the intervention group are significantly better than in control in both reading and emotional intelligence.

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Intervención lectora: correlación entre la inteligencia emocional y la competencia lectora en el alumnado de bachillerato

RESUMEN

En el presente trabajo se lleva a cabo un estudio en el que se aplica un programa de intervención lectora en alumnado de bachillerato durante dos cursos académicos, con el objetivo de evaluar su eficacia sobre la comprensión lectora y la inteligencia emocional. Han participado 521 estudiantes de bachillerato, de los cuales 244 son alumnos y 277 son alumnas. En el grupo intervenido ($n = 258$) se explica la lectura mediante fichas, se eligen 30 lecturas juveniles al azar que son leídas en casa por los estudiantes, sin trabajar la competencia lectora ni la inteligencia emocional de forma específica, como tampoco el constructo de la motivación. En el grupo control ($n = 263$) se siguen las directrices concretadas en el currículo vigente publicado por la Consejería de Educación de la Junta de Andalucía. Los resultados muestran un aumento en comprensión lectora e inteligencia emocional en el grupo experimental tras la intervención. Apuntan a una relación directa entre hábitos lectores, competencia lectora e inteligencia emocional, de igual forma, los resultados en el grupo intervención son significativamente mejores que en control tanto en competencia lectora como en inteligencia emocional.

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Palabras clave:

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Introduction

The inclusion in the educational context of a policy aimed at the development of socio-emotional skills, which has gradually ascertained the status of need, can be traced back to the UNESCO report that was already highlighted in the study of “learning to be” as one of the four basic pillars of education (Delors, 1996, p. 34). For this reason, we insist on the development of the personality and the capacity for autonomy, judgment and personal responsibility, as well as the time that we consider possible (memory, reasoning, esthetic sense, physical abilities, aptitude to communicate). For its part, in the linguistic field, the *Common European Framework of Reference for Languages: learning, teaching, assessment* (European Council, 2001) also includes the existential competence or “know-how”, which includes attitudes, motivations, values, beliefs, cognitive styles and personality factors. In addition, these factors greatly affect not only the role of students in the act of communication, but also their ability to learn. Likewise, in accordance with Recommendation 2006/962/EC of the European Parliament, and of the Council (European Union, 2006), on the key competences for lifelong learning, the Royal Decrees establishing the basic curricula of Primary Education (Ministry of Education, Culture and Sport, 2014), Compulsory Secondary Education and the Baccalaureate (Ministry of Education, Culture and Sport, 2015), defines competencies to be the “sense of initiative and entrepreneurial spirit” necessary to develop skills such as creativity, autonomy, initiative, teamwork, self-confidence and critical thinking.

From this perspective, studies carried out in recent years about the *emotional intelligence* (EI) of students demonstrate a link between the above-mentioned approach and psychological adaptation to the classroom, emotional well-being, academic achievements and future work (Extremera & Fernández, 2004; Páez & Castaño, 2015). It should be noted that, until a few years ago, cognitive ability was considered the only quality responsible for student learning. Motivation, interests, emotions and feelings were not considered important; however, a high IQ does not ensure social, professional and desirable personal success (Castejón, Cantero, & Pérez, 2008; Cortés, Barragán, & Vázquez; 2002; Palomera, Gil-Olarte, & Brackett, 2006).

The concept of *emotional intelligence* was introduced almost thirty years ago into the scientific panorama; since then, various definitions have been developed, enriching the approach of this concept as it was treated in the monograph on the “state of the art” made for the fulfillment of its first twenty-five years (Barchard, Brackett, & Mestre, 2016). Salovey and Mayer understood this concept as a type of social intelligence that allows people to manage their own and others’ emotions and feelings, to discriminate between them and to use and understand this emotional information to direct their thoughts and behavior (1990, p. 189). The growing interest in the study of this concept, as well as the search to obtain empirical data that would lead to a more rigorous, regulated and concise knowledge of it, has guided the research panorama toward two avenues of study. In the first place, an emphasis has been placed on the design of measures that make the existing definitions operative (Bar-On, 1997; Goleman, 1995; Salovey & Mayer, 1990; Schutte et al., 1998). Secondly, an exploration of relationship of *emotional intelligence* with other variables and the relevant criteria of the individual’s life, such as personality, intelligence, psychological well-being, quality of personal relationships, leadership, performance and academic satisfaction (Lopes, Salovey, & Strauss, 2003; Saklofske, Austin, & Minski, 2003).

For their part, Petrides and Furham (2000) already differentiated between *emotional intelligence* as a trait and *emotional intelligence* as information processing, based on the instruments of measurement that each model used to measure emotional intelligence. And in this sense they were interested in emotional

intelligence as a trait, belonging to the domain of personality and measured by self-report – revised in Petrides (2016), compared to emotional intelligence as a capacity, referred to the real potential of a subject to recognize, process and to use the information with emotional load, measured with maximum performance tests – recently updated in Mayer, Caruso, and Salovey (2016). In addition, they agglutinated and defined with precision 15 features or facets included in the tests analyzed by different authors, such as adaptability, emotional perception, emotional regulation, self-esteem, social competence, stress management, optimism trait, among others (Petrides & Furham, 2001).

With regard to certain more concrete results in the educational field, the study by Barraza-López, Muñoz-Navarro, and Behrens-Pérez (2017) with first-year medical students concluded that there is a significant relationship between the symptoms of depression-anxiety and stress with *emotional intelligence*, affirming that an adequate perception of *emotional intelligence* can act as a protective factor against the negative emotional load experienced by students. Extremera, Duran, and Rey (2007) also showed that high levels of EI in students corresponded to a lower level of exhaustion, cynicism, stress and greater academic efficiency. This was accompanied by a profitable dedication to the development of academic tasks prior to the exam period.

On the other hand, in relation to the possible improvement of *emotional intelligence*, the results of a recent meta-analysis, carried out on twenty-four studies, highlight the effectiveness of emotional intelligence programs and highlight the need to continue developing training tools for emotional intelligence intervention that enable the promotion of emotional resources (Hodzic, Scharfen, Ripoll, Holling, & Zenasni, 2018). In this sense, a recent study affirms that emotional intelligence promotes well-being through the facilitation of adaptive patterns of attention processing, centered on positive emotional stimuli (happy faces and positive social scenes) against negative or neutral stimuli (Lea, Qualter, Davis, Pérez-González, & Bangee, 2018). Similarly, Cejudo and Latorre (2015) point out the effects of a videogame as an effective intervention tool to promote emotional intelligence as a capacity.

In this sense, it is significant to establish a connection between *emotional intelligence* and the construction of the *reading competence* (RC), a binomial on which there is still a long way to go in the scientific field and for which the different international reports show concern, being considered an instrument of knowledge and personal development linked to the social and economic progress of countries. The *Progress in International Reading Literacy Study* (PIRLS) in Primary Education (Ministry of Education, Culture and Sport, 2017), the *Programme for International Student Assessment* (PISA) in Secondary Education (Ministry of Education, Culture and Sport, 2016) and the *Programme for the International Assessment of Adult Competencies* (PIACC) in the adult population (Ministry of Education, Culture and Sport, 2013a, 2013b) have shown their interest precisely in the evaluation of this reading competence. On the other hand, reports show the disadvantageous position of Spain with respect to other countries evaluated in reading competence.

Many are the programs and plans of reader promotion that from the public administrations, the curricular norm or the own educational centers have been implanted in order to pursue the improvement of the reading competence of the students. In this sense, Vidal-Abarca et al. (2014) highlight the didactic opportunity of using an intelligent tutor (TuiNLEC), based on the theoretical framework of reading competence of PISA, to improve reading skills. Miquel, Laspalas, and Turmo (2015) propose an improvement of reading competence from a mathematical perspective. Ferrada and Outón (2017) insist on a series of strategies to improve reading fluency in relation to reading literacy. Álvarez-Álvarez and Vejo-Sainz (2017) confirm the contribution of a school reading club in

favor of reading comprehension, education in values and the love of reading.

However, in this study, it is considered pertinent to delve into the study of *reading competence*, differentiated from *reading comprehension* (Jiménez-Pérez, 2014), by means of its relationship with other variables, which could create ways to approach the academic improvement and professional future of students. Different investigations have already shown a positive parallelism between *emotional intelligence* and *reading competence*. In this line, Freitas (2012) already discovered a positive correlation between the emotional intelligence of students and the number of books read during a year, as well as with the daily time dedicated to reading practice, since “reading has been consolidated in the last decade as a fundamental parameter with its own entity, not only within education but also of society in general” (Jiménez-Pérez, 2017, p. 80). Likewise, in the context of the library, it has been possible to verify the link between the reading habits of students with their emotional comprehension (especially in terms of their “control of emotions” and “moral emotions”) and with the perception of *emotional intelligence*, in which interpersonal competence stands out (De Nóbrega & Franco, 2014). In fact, Mayer and Salovey have already stated that “Literature is probably the first home of the emotional intelligences” (1997, p. 20). Through reading, students access stories featuring different characters in different situations that allow them to understand how they respond emotionally to their thoughts and feelings. Menéndez (1997) affirmed that stories are an essential tool for the development of emotional intelligence, since they help to identify fear, pain, joy and loss. Later, Vilches (2004) pointed out the importance of literature as a resource for the recognition and management of one’s own emotions, arguing that the student discovers the human being via the different characters. Although literature probably presents more intense emotional situations than those of real life, emotional responses to reading are also part of the emotional life of the individual (Hogan, 2011). For his part, Lian (2017) argues that paying explicit attention to emotions allows students to approach the learning of language and literature as integral individuals who understand both their own emotions and those of others: “The emphasis of emotions draws on evidence from neuroscience, where both comprehension and learning are presented as emotional processes” (Lian, 2017, p. 874).

Caballero and García-Lago (2010) indicate that the frequent choice of reading in intervention programs for the increase of emotional competences is not capricious; since the results presented by such studies show that the act of reading influences the emotional competence of students. Specifically, their study shows that there are significant differences between individuals who read regularly and their attention to perception, as these people give more attention to feelings. In addition, there is a tendency to frequent readers (not statistically significant) to better regulate their emotions. On the other hand, a relationship between the literary gender chosen for reading and emotional competence is discovered, highlighting the readers of self-help books as having the best emotional regulation. In an inverse and complementary way, the possessing of emotional skills facilitates the development of reading objectives; turning reading into a pleasant experience that allows the individual to adopt a positive and optimistic predisposition. In this sense, it must be emphasized that the motives that direct actions determine the quality, meaning and effectiveness of them (Giraldo, 2011). For his part, Sanjuán (2016) states that the emotional dimension of literature is essential if a humanistic approach is pursued, in which literature offers students the keys to growing as individuals and as individuals belonging to a culture.

Recently, Mengual (2017) has included a third element of study, metacompression (knowledge of the reader about his strategies of textual comprehension and his control over these strategies as directed toward the attainment of optimal understanding).

Metacompression, when related to the parameters of emotional intelligence and comprehensive reading, has allowed the verification of, among others, the following hypotheses: that students with a higher level of metacomprehension will tend to obtain better results in the comprehensive reading test; students with high scores in emotional intelligence will tend to obtain high scores in comprehensive reading; Students who score high in metacomprehension will tend to obtain high scores in emotional intelligence; and Metacomprehension coupled with emotional intelligence will predict a higher performance in the comprehensive reading test (Mengual, 2017, p. 181).

Finally, contrary to some previous studies, the results obtained in an Iranian educational context indicated that the relationship between reading comprehension and the *intellectual quotient* was stronger than the relationship between the first and the *emotional intelligence*. However, it was possible to establish a small but significant correlation between reading comprehension scores and certain dimensions of emotional intelligence, such as interpersonal skills, intrapersonal skills and stress management (Ghabanchi & Rastegar, 2014).

With respect to the gender variable, although there are differences in certain components of emotional intelligence on one hand and of reading comprehension on the other, there are no conclusive studies that hold significant scores between emotional intelligence and reading comprehension in relation to gender. Female have a greater awareness of their emotions, being able to perceive, understand and express them (Brackett, Mayer, & Warner, 2004; Palomera et al., 2006), while male excel in controlling skills impulses and tolerance to stress (Bar-On, Brown, Kirkcaldy, & Thome, 2000; Palomera, 2005; Palomera et al., 2006; Rose, 1995). On the other hand, Guerra and Guevara (2017) discover statistically significant differences in favor of the male gender, in relation to their reading strategies and their motivation toward reading; the study by Delgado et al. (2005) finds significant differences between reading comprehension and student gender, being favorable to fifth grade boys and sixth grade girls. However, by including the gender variable in relation to both emotional intelligence and reading comprehension, Castellano (2010) does not obtain significant results in this direction.

At this point, the present work aims to continue deepening the study of the interrelation between emotional intelligence and reading competence by obtaining objective data that can be of help in the design and application of future teaching practices that pursue learning of vital effect upon the personal, social and professional development of students. In this sense, the general objective of the study is to demonstrate the direct relationship between emotional intelligence and reading competence in secondary school students. Based on this general objective, the following hypotheses are to be demonstrated: (1) Those students with consolidated reading habits will score systematically better in reading and emotional intelligence; (2) That intervention with compulsory readings that do not stimulate self-motivation need not improve reading competence and, by extension, do not affect the development of emotional intelligence; and (3) That the intervention will have different effects according to gender in RC and EI.

Method

Design

In the present study, a non-equivalent control group design (quasi-experimental design) and a homogeneous experimental group were established. In the control group the curriculum of the Ministry of Education of the Junta de Andalucía (the current official curriculum established for the baccalaureate stage) was

followed, and in the experimental group an intervention in reading was carried out with 4 records: pretest (p1), posttest 1 (p2), posttest 2 (p3) and posttest 3 (p4). To ensure homogeneity in the collection of data, both groups were followed up individually for each subject and anonymously without altering their routine in the learning process; that is, during class time, in their usual classroom and with the collaboration of their language and literature teachers (who had received the same instructions in the case of the intervention group). Likewise, the ethical guidelines required in the investigation of human beings were respected, which gave rise to the following premises: informed consent for the right to information and the protection of personal data; confidentiality guarantees; guarantees of non-discrimination for any reason; and free intervention that can be abandoned at any time. In any case, the commitment of the students to fulfill the tasks entrusted to participate in the study was acquired.

Participants

The universe in which this study has been conducted consists of 521 high school students during the two years of this cycle, with ages between 15 and 16 years ($M = 15.98$, $SD = .14$), of which 244 were male students and 277 were female students. The intervention group was composed of 258 bachelors (122 male and 136 female), while the control group consisted of 263 bachelors (122 male and 141 female). The selection of the educational centers was carried out for convenience and participation of the research centers. All schools were publicly owned and located in areas of medium socioeconomic status.

Instruments

Spanish version of Wong and Law Emotional Intelligence Scale (WLEIS, Wong & Law, 2002) (Fernández-Berrocal, Pérez, Repetto, & Extremera, 2004). Consisting by 16 items with a Likert type response format of 7 points that evaluate the EI in the organizational scope grouped into four dimensions: (1) Evaluation of one's own emotions; (2) Evaluation of the emotions of others; (3) Use of emotions, and (4) Regulation of emotions. In turn, it allows obtaining a total score, in which the higher the score, the higher EI. The test is administered to subjects from 16 years of age, so it is appropriate for the target group of this study. It shows satisfactory internal consistency values measured by the Cronbach alpha coefficient (α), oscillating between .83 and .90. In the sample the results were consistent with the objective of the original version, obtaining internal consistency values for the four dimensions between .84 and .89, as well as $\alpha = .89$ for the total score. The value of the average variance extracted (AVE) was .63, the McDonald index .93 and the composite reliability .88.

Reading competence test (ComLEC, Llorens et al., 2011). It is a questionnaire focused on secondary education that is composed of five texts, three continuous and two discontinuous, and a total of 20 questions developed following the parameters of PISA 2000. The length of the texts varies from 274 words to 426 and are written in a fundamentally expository and argumentative manner, with a minimum of 130 words discontinuous texts. The questions are open and closed, with multiple choice predominating. The twenty questions are divided into: *Information retrieval, integration, reflection on content and analysis of the form of the text.* ComLEC obtains satisfactory internal consistency ($\alpha = .79$). The results in the study sample shown an internal consistency of .81, an AVE of .58, and a McDonald index and composite reliability of .79 and .74, respectively.

Questionnaire of reading habits of the Ministry of Education published in 2001. This test consists of 50 questions, and is the means through which information is collected for the age target of secondary school students. The questions refer to student read-

ing habits, family, and socioeconomic status. The items directly related to reading habits have been selected; those that relate to socio-economic information, namely, from question 6 to question 20, have been discarded. The reader is considered, as well as if the father reads, if the mother reads, if they give books, if they ask about reading, if they recommend reading, if there are books at home, if books are spoken about, if teachers recommend books, use of the library, attendance at the book fair (added *ex profeso*), awareness of their taste in reading, if teachers encourage reading, if parents encourage reading, and I want to read more.

Procedure

In the control group the guidelines of the official and current curriculum specified by the ministry of education of the junta de Andalucía were followed, that is, without including mandatory readings or controlling possible recommended readings, while in the experimental group the intervention project was carried out. The information and communication technologies were used to randomly select 30 books, being chosen from "the lists of the best books in the world/history" derived from a random query in Google (which showed lists by Wikipedia, Quelibroleo, culturacolectiva, 20 minutes, etc.). Books that could present explicit content for adults (violence and sex) were excluded. The selected books were: *The Little Prince* by Exupéry, *The Boy in the Boyne Striped Pajamas*, *The Endless Story* by Ende, *Rhymes* by Bécquer, *The Portrait of Dorian Gray* by Wilde, *The Gold Beetle* by Poe, *Tormento de Galdós*, *Asimov's Friends Robots*, *Mihura's Three Hats*, *The Spherical Letter* by Reverte, *Metamorphoses* by Ovid, *Lorca's The prodigious shoemaker*, *Platero and I* by Jiménez, *Rebellion at Orwell's farm*, *The Dethroned Drince* by Delibes, *Insolation* by Bazán, *The Alpeh* by Borges, *Legends of Bécquer*, *Much Ado About Nothing* by Shakespeare, *Grimpow* by Ábalos, *Ghostgirl* by Hurley, *Harry Potter 7* by Rowling, *The Hobbit* by Tolkien, *Marina de Zafón*, *The Mystery of the Haunted Crypt* by Mendoza, *Mythos de Galeano*, *Soldiers of Salamina* by Fences, *The Wire Girls of Sierra* by Fabra, *Three Meters Above the Sky* by Moccia and *The Yellow World* by Espinosa.

This study consisted of 30 sessions of 15 minutes in which 30 readings were considered (5 per quarter, 15 per course). In each session, the teacher explained a reading by means of a sheet: contextualization of the work, the biographical data of the author, and a summary of the work (argument and characters mainly). The students made their individual readings of each work at home and those readings were subsequently checked using the records previously described. Emotional intelligence or other constructs such as motivation were not worked on.

Previously, a model of consent in which the characteristics of the research were informed was submitted to the Educational Centers' management, with the purpose of requesting their participation, so that those who accepted were those who participated in the investigation. Likewise, the parents of the students were given another model of informed consent on the characteristics of the research and the measures that were to be administered, requesting permission for their children to participate in the study. Those who accepted were those who participated in the study.

Data analysis

An ANOVA factorial intersubject 2×2 was carried out, consisting of the factors group (control and experimental) and gender (male and female). The dependent variables (DV) are the score in RC and the EI in the posttest. Subsequently, in order to check the possible effect of the scores of the pretest records in RC and EI on the DVs, factorial ANCOVA was carried out by introducing these pretest scores as covariates into the analyses. In both analysis procedures,

Table 1

Value of the *F* statistic, degrees of freedom (*df*), statistical significance (*p*), magnitude of the association (ω^2) and effect size (*f*)

	<i>F</i>	<i>df</i>	<i>p</i>	ω^2	<i>f</i>
Group	8.34	1.517	<.01	.28	.62
Gender	16.44	1.517	<.001	.35	.73

Table 2

Average descriptive statistics (*M*) and standard deviation (*SD*) of RC of the experimental and control groups according to gender

	Group	<i>M</i>	<i>SD</i>
Female	Experimental	14.94	.03
	Control	13.15	.03
Male	Experimental	13.75	.04
	Control	11.86	.04

the magnitude of the association (ω^2) and the effect size (*f*) were calculated. In the present study there were no missing values.

Results

First, the results obtained in RC are shown. The test to test the assumption of the homogeneity of variances did not show statistically significant results, $F(3, 517) = .74, p = .41$, which indicates that this assumption is assumed. The 2×2 factorial ANOVA showed the statistical significance of the main effects of the group and gender factors (Table 1), while the interaction effect was not statistically significant, $F(1, 517) = 1.60, p = .21$.

The results showed that the experimental group obtained a higher average in RC ($M = 14.24$) than the control group ($M = 13.13$). Regarding the gender factor, females obtained higher averages in RC compared to males ($M = 14.70, M = 13.20$, respectively).

The results of the factorial ANCOVA showed that the covariate was statistically significant, $F(1, 516) = 24312.74, \omega^2 = .93, f = 3.64, p < .001$, which demonstrates its linear relationship with the DV. In relation to the main effect of the group factor, the return was statistically significant, $F(1, 516) = 655.97, \omega^2 = .53, f = 1.06, p < .001$, indicating that the experimental group obtained a higher adjusted average in RC than the control group ($\text{adjusted } M = 14.38, \text{adjusted } M = 13.38$, respectively). This shows that the effect of the group factor on the RV remains unchanged; that is, the relationship between the covariate and RC does not affect the relationship between the group factor and RC. However, the main effect of the gender factor was no longer statistically significant, $F(1, 516) = .64, p = .43$, which shows that the differences in RC according to gender found in the ANOVA are attributable to the covariable. Finally, the interaction effect was again significant, $F(1, 516) = 6.35, \omega^2 = .24, f = .56, p < .05$. The contrasts between means, adjusting the level of alpha (α) by the Bonferroni procedure (critical $\alpha = .025$), indicate that the females in the experimental group obtain a higher adjusted means in RC than those in the control group, $F(1, 274) = 395.28, \omega^2 = .53, f = .53, p < .001$. The males of the experimental group presented higher adjusted means in RC than those in the control group, $F(1, 241) = 269.19, \omega^2 = .48, f = .96, p < .001$. The average statistics and standard deviation obtained in the contrasts between means are shown in Table 2.

In summary, the fact that the interaction effect of group \times gender is significant indicates that the effectiveness of the intervention differs by gender, being higher among women. The results show that the women in the experimental group obtained the highest mean in RC, followed by the men in the experimental group, after the intervention.

Regarding the variable EI, the analysis procedure was identical. The test to test the assumption of the homogeneity of variances did not show statistically significant results, $F(3, 517) = .58, p = .63$,

Table 3

Value of the *F* statistic, degrees of freedom (*df*), statistical significance (*p*), magnitude of the association (ω^2) and effect size (*f*)

	<i>F</i>	<i>df</i>	<i>p</i>	ω^2	<i>f</i>
Group	5.10	1.517	<.05	.11	.35
Gender	45.45	1.517	<.001	.43	.87

Table 4

Average descriptive statistics (*M*) and standard deviation (*SD*) of IE of the experimental and control groups according to gender

	Group	<i>M</i>	<i>SD</i>
Female	Experimental	88.54	.22
	Control	83.53	.22
Male	Experimental	88.65	.24
	Control	83.49	.23

which makes it obvious that an equality of variances is assumed. The results of the factorial ANOVA showed the main effects of the significant group and gender factors (Table 3). The interaction effect was not statistically significant, $F(1, 517) = .013, p = .91$.

The results showed that the experimental group obtained a higher mean in EI ($M = 87.43$) than the control group ($M = 84.01$). Regarding the gender factor, females obtained higher averages in EI compared to males ($M = 90.81, M = 80.63$, respectively). The results of the factorial ANCOVA showed that the covariate was statistically significant, $F(1, 516) = 22817.89, \omega^2 = .90, f = 3, p < .001$, indicating its linear relationship with the DV. In relation to the main effect of the group factor, it again showed statistical significance, $F(1, 516) = 510.10, \omega^2 = .46, f = .92, p < .001$, indicating that the experimental group obtained a higher average adjusted EI than the control group ($\text{adjusted } M = 88.60, \text{adjusted } M = 83.51$, respectively). It is shown that the effect of the group factor on the DV remains unchanged; that is, the relationship between the covariate and EI does not affect the relationship between the group factor and EI. In contrast, the main effect of the gender factor was no longer statistically significant, $F(1, 516) = .03, p = .86$, showing that the differences in EI as a function of gender found in the ANOVA are attributable to the covariate. Finally, the interaction effect was again not statistically significant, $F(1, 516) = .11, p = .74$, which indicates that no significant changes in EI are shown as a function of the combination of the group factor and levels gender. The average statistics and standard deviation obtained in the contrasts between means are shown in Table 4.

In summary, the results have shown the effectiveness of the intervention on EI since the subjects of the experimental group have obtained greater averages than those of the control group, after the intervention. However, no significant differences were evidenced in EI between men and women. Finally, as a consequence of the effectiveness of the intervention on RC and EI, the relationship between both was evaluated using Pearson's linear correlation coefficient (r_{xy}). The results show a high positive linear correlation ($r_{xy} = .89, p < .001$), which indicates that subjects with high RC scores tend to have high scores in EI, and vice versa.

Discussion

In this paper, the effectiveness of a reading intervention program on reading comprehension and emotional intelligence in high school students was evaluated. The results obtained in the present study are in line with others such as Ghabanchi and Rastegar (2014), which point out the link between IQ, emotional intelligence and reading competence. Also, Gómez-Quina (2015) obtained results similar to the previous ones in high school students. Alonso (2014) confirms with his study that "emotional facilitation and emotional management, two of the four EI skills,

correlate with academic performance”, also stresses that reading competence is an indisputable part of academic performance, being based on the evaluations of it. In turn, if the capacity of emotional intelligence can be trained and improved as some studies already point out (Hodzic et al., 2018), it is not unreasonable to think about the relationship that can exist between a specific training of reading competence in relation to Emotional intelligence.

In this investigation, it should be noted that there are differences in gender interaction, especially since the females in the experimental group obtain a higher adjusted means in reading competence than those in the control group. Similarly, the males in the intervention group presented a higher adjusted means than those in the control group. These differences were greater in the male group than in the female group. In the same line, the results in emotional intelligence show a higher adjusted average in the intervention group than in the control group, with females scoring the best. It is worth highlighting the difference that can be seen in the sex item, with a score distinction in reading competence in favor of girls, although it does not occur equally in the scores obtained in emotional intelligence.

The first hypothesis of the present investigation is demonstrated, which establishes the direct and unequivocal relationship between consolidated reading habits and a better score in emotional intelligence and reading competence. Likewise, the second hypothesis is supported by the arguments presented. Since there was an improvement at the end of the intervention program in the second year of the baccalaureate in the constructs of emotional intelligence and reading competence in favor of the intervention group, these positive differences result from a minimum differentiation that is significant. In this sense, the third hypothesis indicates that women score improvement in reading competence, this is not the case in emotional intelligence.

For this reason, it is perceived that reading competence is attained via trained reading; that is, it becomes necessary in the classrooms that teachers to recommend reading in the classroom, since via this approach reading training and competence progress in a natural manner without the use of concrete activities or stipulated texts for the specific training of reading competence. These activities should, perhaps, be directed specifically at students with low reading competence, and not as a common tool for general reading training. Perhaps it would be interesting to study the possibility of designing differential strategies in reading competence according to sex.

Therefore, it should be noted that possible limitations of this study, which should be the subject of future research, refer to the study of the role of the time the students need for the tasks in the intervention group as well as controlling the way in which they carry out this task. As well as the role of different emotional abilities within emotional intelligence as a determining factor in the improvement of reading competence as the result of reading habit (that is, the consolidation of reading habitually for pleasure), which demonstrates, as other research has also identified, that the most natural way to train reading competence is simply to read.

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