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RESEARCH ARTICLE

The developmental trend of emotional competence and its relationship to communication skills in age groups (8-10-12)

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ABSTRACT

This research investigates the growth trajectory of emotional competence and communication skills among children aged 8, 10, and 12 years, while also examining the influence of gender on these competencies. The study involved a sample of 300 individuals, evenly divided by age and gender, with 100 participants from each age group (50 males and 50 females). Two scales were developed to assess emotional competence, comprising 30 items, and communication skills, consisting of 40 items. The analysis revealed statistically significant differences in both emotional competence and communication skills across the different age groups, with notable variations based on gender. Specifically, while emotional competence increased with age, the 10-year-old group did not show significant differences in communication skills compared to the other age groups. The findings indicate that children aged 8 and 9 exhibit lower levels of both emotional competence and communication skills compared to their 10-year-old counterparts, who demonstrate higher proficiency in these areas. This result suggests a developmental trend where emotional and communication skills improve as children grow older. The age and gender in understanding the development of these essential skills, educators and parents in fostering emotional and communicative growth in children. Overall, the research targeted interventions that support emotional and communication skill development during early childhood.

Keywords: emotional competence; communication skills; child development; gender differences

1. Introduction

1.1. Research problem

Emotions are an important aspect that affects an individual's life. They have the ability to influence his behavior, actions, life, and social relationships. Emotions represent a complex physiological and psychological state, which the individual must have specific ways to deal with, either by satisfying them or postponing their satisfaction to an appropriate time. Whether he postpones or satisfies, this will inevitably affect his behavior. School-aged children often display intense and underdeveloped emotional responses, which can impact their behavior and interactions. Therefore, paying attention to the emotional side of their lives is extremely important. The current research focuses on examining the developmental trends of emotional competence and communication skills in children aged 8, 10, and 12 years.

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1.2. Research aims

This article aims to explore variations in these trends based on age groups and gender, specifically comparing males and females. Additionally, the study seeks to investigate the relationship between emotional competence and communication skills within the research sample.

1.3. Defining terms

Emotional Competence: This refers to a set of abilities, skills, and emotional, personal, and social experiences that distinguish individuals and help them achieve success and skillfully adapt to the situations they encounter. This is achieved through self-awareness, empathy for others, flexibility in dealing with different situations, and the individual's ability to manage emotions [1].

1.4. Communication skills

It is the individual's ability to apply knowledge and theoretical sciences, and transform them into tangible practices in reality. Communication skills are represented in the ability to express social emotions, receive and interpret the emotions of others, and awareness of the rules underlying forms of social interaction, and the ability to control and organize non-verbal expressions as communication skills include (verbal and non-verbal skills) (listening, listening, speaking, dialogue, persuasion, body language, facial expressions, symbolic communication and the art of dealing with others) [2].

2. Materials and methods

The researcher used the descriptive analytical approach because it is appropriate for the research topic and objectives. The researcher designed tools to collect data because of their suitability to the research objectives, method, community, and sample. Research manuscripts reporting large datasets that are deposited in a publicly available database should specify where the data have been deposited and provide the relevant accession numbers. If the accession numbers have not yet been obtained at the time of submission, please state that they will be provided during review. They must be provided prior to publication. The original research community consisted of all students in the age groups covered, and the research sample consisted of (300) individuals from the age groups (8, 10, 12) years, as each age group consisted of (100) individuals divided into (50) males and (50) females, and the sample was drawn using the available random method.

The researcher constructed this scale by reviewing a number of relevant research and studies. The researcher then identified the scale's dimensions, which are: awareness of emotions, the ability to understand and analyze emotions, and the ability to manage emotions. It consists of 30 items. Psychometric study of the scale: The validity of the scale was verified using several types of validity: face validity, structural validity using internal consistency, and discriminant validity [3].

1- **Face Validity**: The instrument was presented to a group of (5) arbitrators to determine the apparent validity of the study instrument.

2- **Exploratory Study**: The scale was applied to a pilot sample of (20) students, outside the primary research sample, to determine the suitability and clarity of the items for the research sample members[4].

3- **Structural Validity** :Using Internal Consistency: Internal consistency validity is one of the most important types of validity that can be used to verify the validity of the scale [5]. The researcher determined the internal structural validity of the scale after applying it to the aforementioned pilot sample, and then determined the correlation coefficient between the score of each statement and the total score of the dimension to which it belongs. The results of the Pearson correlation coefficients were as shown in the table:

Table 1.Correlation coefficients of the scale items with the dimension to which they belong.

Item	Pearson Correlation	Item	Pearson Correlation	Item	Pearson Correlation
Emotional Awareness		**Ability to Understand and Analyze Emotions**		**Ability to Manage Emotions**	
1	0.87	11	0.88	21	0.84
2	0.76	12	0.76	22	0.65
3	0.89	13	0.70	23	0.64
4	0.77	14	0.71	24	0.76
5	0.83	15	0.82	25	0.71
6	0.65	16	0.76	26	0.66
7	0.45	17	0.66	27	0.78
8	0.67	18	0.54	28	0.55
9	0.76	19	0.67	29	0.51
10	0.77	20	0.76	30	0.56

It is clear from the previous table that all Pearson correlation coefficients are high and statistically significant, which indicates that the scale has appropriate validity for research purposes. After that, the researcher calculated the correlation of the scale dimensions with the total score of the scale, and **Table 2** shows the values of the resulting correlation coefficients:

Table 2. Results of the correlation of dimensions with the total score of the scale.

Dimension	Correlation coefficient value
Emotional Awareness	0.972**
The ability to understand and analyze emotions	0.963**
The ability to manage emotions	0.923**

*** Significant at the significance level (0.01)*

The table above shows that the correlation coefficients of the dimensions with each other and with the total score of the scale are statistically significant at the significance level (0.05). Therefore, the scale is characterized by a high degree of internal structure, indicating construct validity. This indicates that each dimension is consistent with what the scale measures as a whole. Discriminant Validity: The scores of the sample members on the validity and reliability scale were arranged in descending order, and discriminant validity was calculated based on the extreme groups of the scale by identifying the upper and lower groups by selecting the top 25% and the bottom 25%. The Mann-Whitney test was used to measure the significance of the differences between the means of the upper and lower groups on the total score of the scale and the sub-dimensions. The results were as follows:

Table 3. Discriminant validity of the emotional competence scale.

Axis	Group	Mean Ranks	Mann-Whitney U Value	P-value	Significance
Emotional Awareness	Upper Group	43.2	1.7	0.000	Significant
	Lower Group	18.3			
Ability to Understand and Analyze Emotions	Upper Group	44.3	0.24	0.000	Significant
	Lower Group	18.4			
Ability to Manage Emotions	Upper Group	41.2	0.88	0.000	Significant

Axis	Group	Mean Ranks	Mann-Whitney U Value	P-value	Significance
Total Score	Lower Group	11.5	0.32	0.000	Significant
	Upper Group	42.4			
	Lower Group	22.1			

Table 3. (*Continued*)

The previous table shows that the Mann-Whitney U test value is statistically significant, with probability values less than 0.05. This means that there are statistically significant differences between the upper and lower groups, indicating discriminant validity in terms of extreme groups. Scale reliability: The researcher calculated reliability using Cronbach's alpha method, split-half method, and Guttman's equation. The results are as shown in the following table:

Table 4. Stability of the emotional competence scale.

Axis	Cronbach's alpha reliability	Spearman-Brown	Half-split	Gutman
Awareness of Emotions	0.78	0.87	0.88	0.88
The ability to understand and analyze emotions	0.87	0.89	0.76	0.83
The ability to manage emotions	0.65	0.54	0.87	0.82
Total Score	0.80	0.78	0.87	0.83

The data in the table indicate that the emotional competence scale has a high degree of reliability, which makes it applicable.

2.1. Communication skills scale:

The scale was developed using a number of previous studies and research related to this field and consists of 40 items [6].

2.1.1. Discriminant validity:

Discriminant validity was calculated based on the scale's extreme groups by identifying the upper and lower groups, selecting the top 25% and the bottom 25%. The results were as follows:

Table 5. Discriminant validity of the communication skills scale in terms of end groups.

Communication Skills	Groups	Average rank	Mann Whitney U value	P-Value	Significance
Listening and Listening Skills	Upper group	45.2	0.321	0.002	Significant
	Upper group	4.00			
Speaking, Dialogue, and Persuasion Skills	Upper group	34.5	0.542	0.012	Significant
	Upper group	11.9			
Body Language and Facial Expressions	Upper group	44.3	1.654	0.000	Significant
	Upper group	22.1			
Nonverbal Communication	Upper group	46.3	1.78	0.000	Significant
	Upper group	11.1			
Overall Score	Upper group	36.7	1.35	0.000	Significant
	Upper group	16.3			

It is clear from the table above that the value of the Mann Whitney U test is statistically significant, as its probability values were less than (0.05), which means that there are statistically significant differences between the upper and lower groups, and this indicates discriminant validity in terms of extreme groups.

2.1.2. Internal construct validity:

After applying it to the survey sample, a correlation coefficient was found between the score of each statement and the total score of the dimension to which it belongs. The results of the Pearson correlation coefficients are as shown in the table:

Table 6. Correlation coefficients of scale items with the dimension to which they belong.

Here is the translated table:

Item	Pearson Correlation	Item	Pearson Correlation	Item	Pearson Correlation	Item	Pearson Correlation
Listening and Attention Skills		Speaking, Dialogue, and Persuasion Skills		Body Language and Facial Expressions		Non-verbal Communication	
1	0.875	11	0.76	21	0.88	31	0.65
2	0.768	12	0.45	22	0.76	32	0.65
3	0.77	13	0.65	23	0.64	33	0.78
4	0.56	14	0.77	24	0.65	34	0.760
5	0.67	15	0.87	25	0.76	35	0.76
6	0.71	16	0.88	26	0.65	36	0.89
7	0.76	17	0.81	27	0.89	37	0.78
8	0.60	18	0.79	28	0.87	38	0.76
9	0.65	19	0.87	29	0.43	39	0.87
10	0.76	20	0.76	30	0.65	40	0.65

The previous table shows that all Pearson correlation coefficients are high and statistically significant, indicating that the scale has adequate validity for research purposes. We then calculated the correlation of the scale dimensions with the total score, and the following table shows the values of the resulting correlation coefficients:

Table 7. Results of the correlation of dimensions with the total score of the scale.

Dimension	Correlation correlative value
Listening and Listening Skills	0.97**
Speaking, Dialogue, and Persuasion Skills	0.78**
Body Language and Facial Expressions	0.65**
Nonverbal Communication	0.74**

** *Significant at the significance level (0.01).*

The previous table shows that the correlation coefficients of the dimensions with each other and with the total score of the scale are statistically significant at the significance level (0.05). Therefore, the scale is

characterized by a high degree of internal structure, which indicates its structural validity and provides an indication that each dimension is consistent with what the scale measures as a whole.

2.1.3. Scale invariance:

To ensure the stability of the scale, the Cronbach's alpha equation was used, as well as the Spearman-Brown halving rule and the Guttman coefficient [7]:

Table 8. Consistency of the communication skills scale.

Scale Items	Cronbach's alpha	Spearman-Brown	Half-split	Gutman
Listening and Listening Skills	0.974	0.986	0.972	0.96
Speaking, Dialogue, and Persuasion Skills	0.78	0.76	0.88	0.88
Body Language and Facial Expressions	0.88	0.65	0.76	0.78
Nonverbal Communication	0.62	0.84	0.74	0.65
Total Score	0.82	0.88	0.89	0.878

The data in the table indicate that the communication skills scale has a high degree of reliability that enables us to apply it for scientific research purposes.

3. Results

The first objective: To identify the growth trend of emotional competence among the research sample members (8-10-12 years).

3.1. Emotional competence according to the age variable:

After applying the emotional competence scale to the ages covered by the research (8, 10, 12) years, the arithmetic mean and standard deviation were extracted for each age, using a single-sample t-test. The results showed that the difference between the calculated mean and the hypothetical mean at ages (8, 10) years was statistically significant in favor of the hypothetical mean, and at age (12) years in favor of the calculated mean at a significance level of (0.05). This means that age (12) years is the age at which emotional competence begins to appear among the sample members, and **Figure 1** illustrates this.

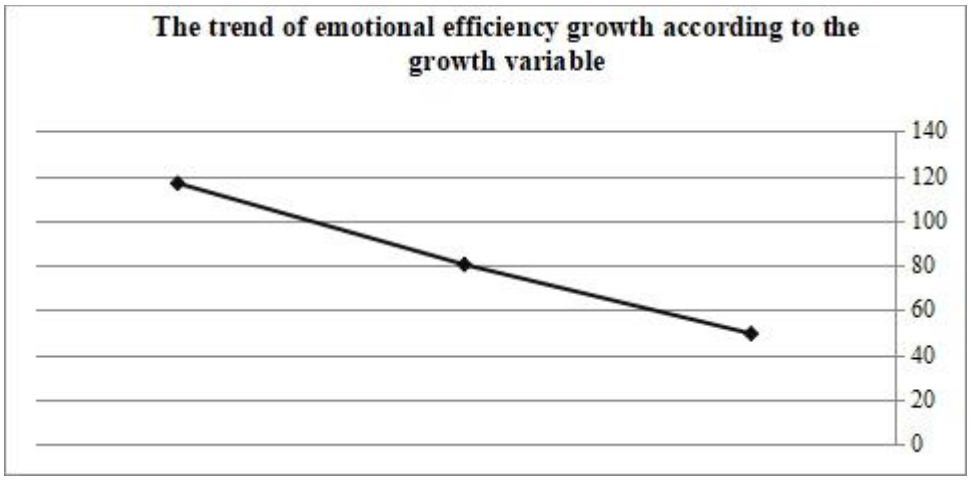

Figure 1. The trend of emotional efficiency growth according to the growth variable.

3.2. Emotional competence according to gender variable:

3.2.1. Emotional competence in males:

After applying the emotional competence scale to the ages covered by the study (8, 10, 12), the arithmetic means and standard deviation of the male scores were extracted for each age covered by the study. Using a single-sample t-test, the results showed that the difference between the arithmetic mean and the theoretical mean across all ages was statistically significant in favor of the hypothetical mean at ages (8, 10) years at a significance level of (0.05), with the exception of age (12) years, where it was significant in favor of the calculated mean[8]. This means that emotional competence begins to appear at this age in males, as **Table 10** and **Figure 2** illustrate.

3.2.2. Emotional competence in females:

After applying the emotional competence scale to the ages covered by the study (8, 10, 12), the arithmetic means and standard deviation of the females' scores were extracted for each age covered by the study. Using a single-sample t-test, the results showed that the difference between the arithmetic mean and the theoretical mean across all ages was statistically significant in favor of the hypothetical mean at ages (8, 10, 12) years at a significance level of (0.05)[9]. **Table 9** and **Figure 2** illustrate this.

Table 9. Emotional competence scores by age and gender.

Age	Gender	Sample	Mean	Standard Deviation	Hypothetical Mean	t-Value	Significance (0.05)
8 years	Males	—	57.880	18.297	—	22.367	0.000 – Significant in favor of the hypothetical mean
	Females	—	40.920	11.406	—	25.366	0.000 – Significant in favor of the hypothetical mean
10 years	Males	—	66.420	9.624	—	48.802	0.000 – Significant in favor of the hypothetical mean
	Females	—	93.837	22.274	—	29.489	0.000 – Significant in favor of the hypothetical mean
12 years	Males	—	119.720	10.105	—	83.769	0.000 – Significant in favor of the calculated mean
	Females	—	113.775	9.639	—	82.610	0.000 – Significant in favor of the hypothetical mean

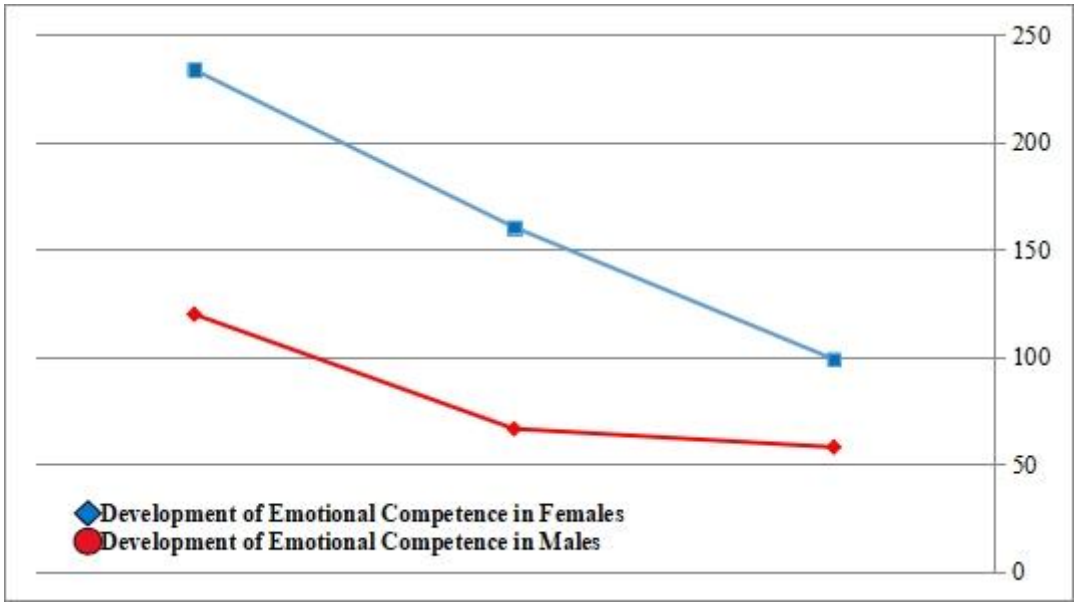

Figure 2. Comparison of emotional competence levels across age groups and gender.

3.3. Identifying the developmental trend of communication skills among the research sample (8-10-12).

After applying the communication skills scale to the ages covered by the research (8, 10, 12), the arithmetic mean and standard deviation were extracted for each age. Using a single-sample t-test, the results showed that the difference between the calculated mean and the hypothetical mean across the ages covered by the research was in favor of the hypothetical mean, at a significance level of (0.05). This means that communication skills are present among the research sample members, as shown in **Figure 3**.

Table 10. Arithmetic means, standard deviations, and t-values of students' scores on the communication skills scale according to the age variable.

Age Group	N (Sample Size)	Mean	Standard Deviation	t-Value (Calculated)	Degrees of Freedom (df)	p-Value
8 years	100 participants	48.828	17.409	75.55	99	0.000
10 years	100 participants	66.190	22.042	84.06	99	0.000
12 years	100 participants	140.600	10.231	48.503	99	0.000

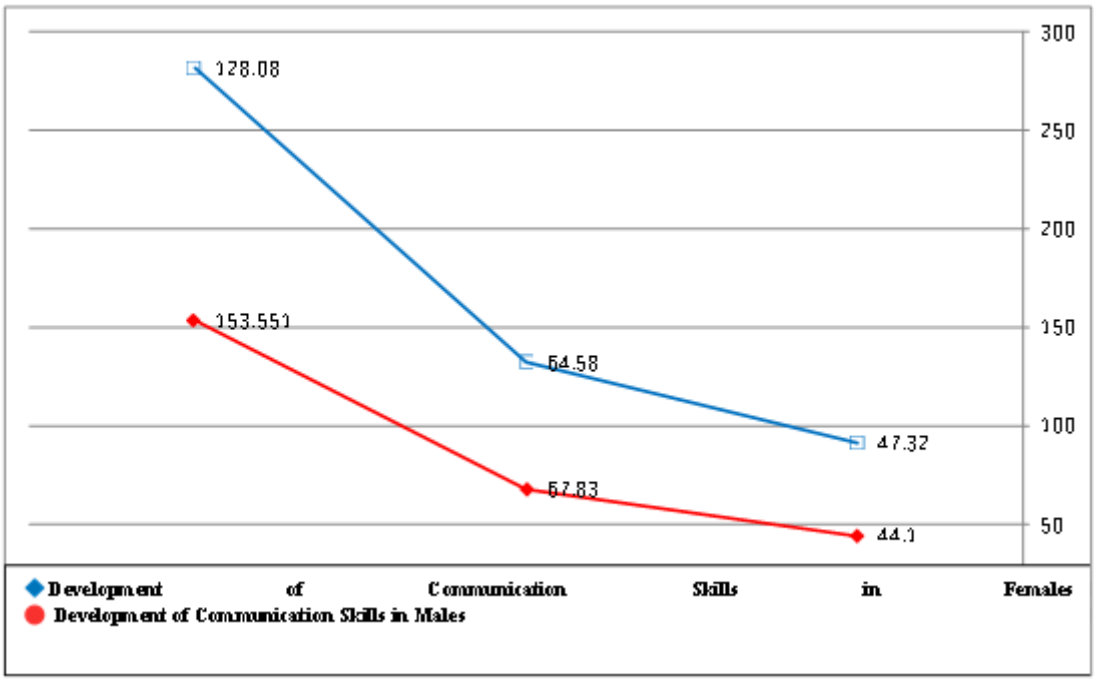

Figure 3. Mean scores of communication skills according to the variables of age and gender.

3.4. The significance of differences in the developmental trend of emotional competence according to the variables of age and gender

To verify the validity of this hypothesis, the differences between the average scores of the research sample members on the emotional competence scale were calculated using a t-test to clarify the significance of the differences[10]. The following table illustrates this:

It is noted from the table that the significance level value for the total score of the emotional competence scale in the age groups (8 years and 10 years) was closer to the value of the default significance level (0.05), meaning that there are statistically significant differences between males and females in the ages of 8 and 10 years. At the age of (8) years, it is in favor of females, and at the age of (10) years, it is in favor of males. As for the age group (12) years, there were no statistically significant differences between males and females in emotional competence, due to the difference in the gender variable.

3.5. The relationship between emotional competence and communication skills:

To verify the validity of this hypothesis, the Pearson correlation coefficient was calculated between the scores of the research sample members on the emotional competence scale and their scores on the communication skills scale. The results were as follows:

Table 11. Value of the correlation coefficient between emotional competence and communication skills.

Emotional Competence	Geder	Number	Mean	Std. Dev.	T-value	Significance	Decision
Age 8	Males	50	57.8800	18.297	5.54	0.00	Significant
	Females	50	40.9400	11.450			
Age 10	Males	50	66.420000	9.623716	8.1	0.000	Significant
	Females	50	94.240000	22.229379			
Age 12	Males	50	119.720000	10.105646	3.0	0.27	Not Significant
	Females	50	113.740000	9.544333			

Looking at the results in the table above, it is noted that the Pearson correlation value reached (0.10), which is significant at the significance level (0.01), and therefore we reject the null hypothesis and accept its alternative hypothesis, which states: (There is a statistically significant correlation between emotional competence and communication skills during the age stages).

4. Discussion and implications

The research sought to investigate the advancement of emotional competence and communication abilities in children aged eight, ten, and twelve. Results indicated that emotional intelligence and communication skills get better as people get older. For example, twelve-year-olds scored far higher than younger kids, which fits with developmental psychology ideas. There were significant variations in emotional competence between boys and girls, with girls doing better than boys between the ages of eight and ten. However, these differences lessened by age twelve, probably because they were becoming older.

The results confirm earlier studies, emphasizing the connection between emotional intelligence and communication skills, indicating that improving one may enhance the other. Educators should implement social-emotional learning (SEL) initiatives to cultivate emotional intelligence, potentially enhancing academic achievement and peer relationships. Parents should use developmental milestones to help their kids grow, and politicians should focus on helping kids with emotional or communicative problems early on.

The study's findings, based on Iraqi youngsters, indicate universal developmental tendencies, highlighting the necessity for culturally appropriate methodologies in research and practice. The study has some limitations, such as only looking at a small area and relying on people to report their own feelings, which means future research should include a wider range of participants and track changes over time. Observational techniques may further augment the dependability of results.

5. Conclusion

- Emotional competence and communication skills play an important role in the lives of individuals across different age groups. They are the primary factor contributing to a positive impact on the psychological and social adaptation of individuals at different age levels, reaching maturity.
- The results indicated that the older the students, the greater their emotional competence and the higher their communication skills.
- Emotional competence contributes positively to improving students' communication skills, and vice versa. Each variable has the potential to positively influence the other, which positively impacts students' lives.
- There were statistically significant differences in emotional competence and communication skills between different age groups based on gender. However, for the 10-year-old age group, there were no significant differences in communication skills.
- Emotional competence among the research sample members increased with age, meaning that students aged 8 and 9 years had a lower level of emotional competence than students aged 10, who were at a higher level. There are communication skills among the research sample members that increase with age, meaning that students aged 8 and 9 years have a lower level of communication skills than students aged 10 years, which are at a high level.

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Conflict of interest

The author declares no conflict of interest.

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