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READING IN PRIMARY EDUCATION

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Abastract. This article will present the research on five dimensions addressed to carry out a more exhaustive research on the concept of reading, the difficulties that children may have when learning it, the concept of educational inclusion, neuroeducation and neurodidactics. The aim of this work is to learn about the teaching-learning process of reading and to have an idea about the information that our future teachers and society have about it. A simple of 300 students who are currently studying the Primaria Education Degree has been chosen. They will be given a scale that they must answer, from which the results to be discussedwill be obtained through a descriptive analysis of the ítem considered in it. Some of the ítems analyzed are also presented graphically to understand them clearly. We will end with a conclusión and personal assessment related to the information obtained on the aforementioned questionnaire (Likert sacale) to hace a clear idea of what our future teachers know about learning to read, if they have knowledge about the new teaching methodologies, anda if future education remains in good hands.

Keywords: reading, reading difficulties, educational inclusion, neuroeducation, neurodidactics.

LA LECTURA EN EDUCACIÓN PRIMARIA

Resumen. En el presente artículo se va a presentar la investigación sobre cinco dimensiones abordadas para poder hacer un estudio más exhaustivo sobre el concepto de lectura, las dificultades que se pueden presentar en los niños y niñas a la hora de aprenderla, el concepto de inclusión educativa, neuroeducación y neurodidáctica. El objetivo que se pretende alcanzar con este trabajo es conocer el proceso de enseñanza- aprendizaje de la lectura y tener una idea sobre la información que tienen nuestros futuros docentes y la sociedad sobre ello. Se ha elegido una muestra de 300 alumnos que actualmente están cursando el Grado de Educación Primaria. Se les pasará una escala que deberán responder, de la cual se obtendrán los resultados a discutir a través de un análisis descriptivo de los ítems considerados en la misma. También se presenta de forma gráfica algunos de los ítem analizados para entenderlo de forma clara y finalizaremos con una conclusión y valoración personal relacionada con la información obtenida sobre el cuestionario mencionado anteriormente (escala Likert) para tener una clara idea sobre lo que saben

nuestros futuros docentes a cerca del aprendizaje de la lectura, si tienen conocimiento sobre las nuevas metodologías de enseñanza y si la educación futura queda en buenas manos.

Palabras clave: lectura, dificultades de la lectura, inclusión educativa, neuroeducación, neurodidáctica.

Introduction

We will begin by talking about written language in its general aspect. As a concept, it is an essential tool in social and personal development so that society can achieve its integration with the maximum possible benefit, since communication in all its aspects is important in order to understand the world we live in and to socialize with peers. This requires the development of multiple linguistic, cognitive and metacognitive skills. According to Solé (2002), reading is the process in which a reader interacts with a text in order to interpret or understand a given message. On the other hand, Marchesi (2005) explains that reading is one of the main activities to be encouraged in the classroom due to its integrity. In this way, he adds that reading allows development not only at an intellectual level through the enrichment of knowledge but also at an emotional, psychological or personal level, therefore, attending to the integral development of schoolchildren. Navarro (2008) states that in order to get students to read for pleasure, it is necessary to implement a series of strategies and techniques that encourage reading in the classroom, as well as in other primary socialization agents such as the family. In this way, according to the same author, it will be possible for students not only to practice reading in order to solve problems, seek information out of necessity or understand messages that may be important, but also as a pleasure and as a source of autonomous knowledge. Navarro (2008) proposes a series of strategies that encourage the use of reading, such as active repetition, establishing mnemonic rules, repeating aloud, highlighting, taking notes, summarizing a text, concept mapping, among others. However, all these strategies must be practiced from a methodology that encourages students to implement them, otherwise, they would fall into a traditional methodological technique, based on the passivity of students, in the absence of autonomous decision making or memorization of these. In this way, some of the active methodologies that can be present for the encouragement, practice and learning of reading are the following:

- Gardner's multiple intelligences. It consists of conceiving learning from several dimensions, so that, according to Gardner (2012), students can enhance their own performance at a cognitive and integral level. In this way, reading would be framed in the linguistic intelligence that could develop communicative skills in the student.

- Cooperative learning: Through this methodological technique, students in small groups interact autonomously, seek solutions and information and establish roles to achieve common goals, leaving aside competitiveness and individualism (Benito, 2007). Reading would be present, in this way, in a motivating and innovative environment for students and, consequently, the pleasurable practice of reading, too.

- Gamification: Gaitán (2013) mentions that from techniques that involve the mechanics of video games and the playful character that this presents, it is possible for students to practice reading in a pleasant way, so its application in the primary classroom can be beneficial.

On the other hand, Padgett (1998), focusing on the typology of learning difficulties, speaks of language and reading, pointing out aspects centered on the following characteristics that appear:

- General abilities of the student body.
- Fundamental symptoms.
- Processing deficits.
- Secondary symptoms.

Educational inclusion, according to Patterson (1995), consists of the participation of students in an educational system that takes into account their possibilities and offers solutions to their limitations, and must be linked to concepts such as equity, equality, non-discrimination or justice, as pointed out by Bolívar (2012), who also states that the presence of these terms is sometimes difficult to achieve in the educational system for different reasons, including teacher training or the resources available to the school center. Currently, the education system is based on Organic Law 3/2020, of December 29th , which amends Organic Law 2/2006, of May 3rd , on Education (LOMLOE, 2020). This organic law includes a series of pedagogical principles that seek educational inclusion and attention to diversity, such as:

- Personalization of teaching.
- Principle of respect and non-discrimination.
- Principle of equity and equal opportunities.
- Principle of individualization.

In addition to the state level, in the autonomous community of Andalusia, educational inclusion is also taken into account through Law 17/2007, of December 10, 2007, on Education in Andalusia (LEA, 2007). This law develops a series of methodological strategies or forms of educational response for students, as described in the following section. Table 1 below shows some of the strategies or aspects to be taken into account in Primary Education in order to promote inclusion.

Table 1.

Strategies and aspects to promote inclusion in primary school.

Strategies and aspects that facilitate inclusion in primary education.	
Strategies or aspects	Description
Value systems	Parra (2008) considers that establishing a system of values in the classroom is necessary in order to achieve

	their transmission, the development of skills and abilities, as well as the awareness of the need for everyone to have the same rights to life in general and to the particularities of the students in particular. For this system of values to be present in the classroom, it will also be necessary, according to García and Dolan (1997), to attend to psychological, economic and ethical dimensions since, in the curriculum, they are present in a cross-cutting manner.
Values of the teaching staff	Serna and Luna (2011) consider that teachers at all times are models for the student body, so it is necessary to show themselves as such through exemplary behavior, based on the presence of values, a democratic, inclusive, communicative attitude, and knowledge of different techniques for peaceful conflict resolution, such as assertive dialogue. When all this is present in the classroom, according to López (2006) it is possible to build an environment in which students can internalize these values and acquire them in a meaningful way.
Curricular adaptation	The LOMLOE (2020) establishes a series of curricular adaptations such as significant adaptations and reinforcement programs in which some of the curricular elements can be adapted in order to achieve the most inclusive teaching and learning process possible. Within this type of adaptation, values must be present and not only contribute to the cognitive improvement of the learner but also to his or her integral development.
Specific programs	Specific programs have been in place since Organic Law 8/2013, of December 9, 2013, for the improvement of educational quality (LOMCE, 2013). They consist of the design of a teaching and learning process aimed at students to improve some aspect that is not included in the curriculum and that may be important for the shaping of the student's personality or for the development of the competences established by the regulations. Some specific programs may be for the development of social skills, to improve empathy, to improve personal aspects such as self-esteem, to learn

	techniques for peaceful conflict resolution, among others.

Note: Own elaboration.

Understanding educational inclusion from the importance of its application in education in general and for the attention to the diversity of students, neuroeducation, and later, neurodidactics, can be considered as possible ways from which students can find tools to develop the learning of reading, as well as to attend to their difficulties in practice.

According to García (2017), neuroeducation is a paradigm that focuses on teaching strategies based on the brain's own functioning, sometimes using information and communication technologies. Through neuroeducation, educational and psychological aspects are combined in order to achieve a teaching and learning process that favors all students at an integral level.

With the incorporation of ICT in the educational system, the student has more information available through the learning that takes place in the classroom. Thus, Jensen (2004) states that the main goal of neuroeducation is to take advantage of learning in order to be executed in a way that allows an improvement in the quality of teaching and learning. It should be noted that neuroeducation, in spite of being now a more current and more worked topic, has antecedents that warned about the importance of this from early ages in the educational system. Montessori (1986) states that by working with the mind it is possible to achieve integral development from the first years of life, since children are able to pay much more attention than in any other period of their lives.

Gardner (1993), through the theory of multiple intelligences, states that through the presence of different intelligences, the child can achieve greater understanding and the development of skills and abilities, having as a starting point the brain and the absorption of knowledge and content, in this case, according to the theory, intelligences. From neuroeducation, according to Gardner (1993), all the intelligences that are proposed in the theory of multiple intelligences could be developed. On the other hand, Mora (2017) exposes the need to take into account attention as a basis on which to carry out learning because, through attention itself it is possible to obtain the development of people not only at the academic level but also in other aspects. Therefore, from the educational system, it is necessary to contribute, from the perspective of neuroeducation to achieve a series of benefits in children such as:

- The activities must be presented from a motivating perspective and must be interesting for the students, because if they are too ordinary they could become unmotivated.

- Encourage students' interest and curiosity for learning through questions.

- Develop aspects such as imagination or creativity through activities like stories, games or other types of tasks that move away from the traditional methodology based on memorization and passivity of students.

- Allowing the manipulation of resources available in the classroom, as well as taking more into account the procedural aspects in the classroom, since learning in an autonomous way allows contributing to a perspective based on neuroeducation.

Finally, before moving on to neurodidactics, Mora (2017) makes a classification of the different types of attention that may be present from a neuroeducation-based perspective. They are the following listed below in Table 2.

Table 2.
Types of attention

Types of attention	
Tipo	Descripción
Attention base	This type of care is the one that allows us to know what is happening around people in a more general way than other types of attention.
Absorbing attention	Through absorbed attention it is possible to maintain constancy and a fixed level of alertness.
Orientational attention	The objective of the orientative attention is to detect the most important points within a group of information. It should be noted that, in this case, the orientational attention is not permanent, but is subject to constant modification depending on the context.
Executive attention	Through executive attention, sustained attention can be achieved, which allows the development of critical thinking after obtaining information, as well as being able to reason.
Unconscious attention	This type of attention is involuntary. It is, together with base attention, a type of

	attention that does not require the student's perception since it is very basic.

Note: Own elaboration.

Next, we will delve into neurodidactics in its different applications from the primary classroom, as well as taking into account emotions as vehicles that allow well-being in the classroom and in other contexts in order to facilitate educational development. Neurodidactics, according to Fernández (2017) is a term that has been given since 1988 and tries to find a field based on research that allows knowing a way of being able to teach through neuroscience from a more effective vision for the students, as well as to promote their educational performance. Neurodidactics also combines brain, attention, memory and emotions in such a way that the student's potential is improved, as well as the level of significant learning acquired. Some of the educational applications related to neurodidactics in the primary classroom are the following:

Table 3.

Applications related to neurodidactics in primary school.

Applications related to neurodidactics in Primary Education	
Application	Description
Sleep	According to Van Dongen et al. (2003), sleep has not always been conceived as an important factor in learning. However, there are several studies that currently explain that lack of sleep can have negative effects on the work of aspects related to neurodidactics such as memory, attention, reasoning, motor skills or the emotional sphere. To prevent this from happening, Mora (2013), states that increasing the hours of sleep in children may be appropriate for the performance of students, as well as delaying the school schedule according to Willingham (2012).
Physical exercise	According to Codina (2014) physical exercise has always been considered a practice that promotes cognitive performance in people. Therefore, it is necessary to increase it in educational attention. Through this, students can see their own personal wellbeing favored and it can even help to promote social skills or a more participatory, active, inclusive education based on the principle of respect and non-discrimination.
The game	The game, according to Guillén (2012) also offers a benefit to students because through it it is possible to

	awaken curiosity or interest in the student. In addition, this allows a number of benefits for students such as improving their well-being at school, developing creativity or personal aspects such as self-esteem or socialization. Therefore, the same author points out that the game should be considered as a resource or tool in primary school classrooms, since the playful nature of the game can help them in critical thinking, companionship, imagination, among other aspects. Thus, Drobnic and García (2013) consider that a game that is related to neuroeducation is chess because it develops attention, memory, concentration, creativity or reasoning through the actions carried out in its practice.
Nutrition	Blakemore and Frith (2007) mention nutrition as a possible improvement for student brain functioning. Through proper nutrition, concentration and memory are favored. This happens because the brain, in four-fifths, is water so not being hydrated makes it difficult to be concentrated or pay attention and, consequently, their learning. For this reason, Pozo (2012) points out the importance of increasing omega 3 as well as improving diet and habits from an early age for the academic performance and wellbeing of children.
Memory	According to Howard (2011), learning is synonymous with memory, so the relationship between memory and recall must be present at all times in education. Codina (2014), in this way, explains that working memory must be encouraged in the classroom so that previous knowledge can be related to the new knowledge acquired. To this end, he mentions a series of techniques or strategies such as: - Working on similarities and differences. - Brainstorming. - Establishing debates. - Relating learning to the sensory aspect to achieve significant learning, - Using visual resources that promote the understanding of the contents, among others.

Attention	Through attention, students can receive stimuli, so fostering it in the classroom helps to create new knowledge. Taylor et al. (1999) consider that the presence of attention in the classroom depends mainly on the interest and motivation that learning can cause in students, so the teaching task, in this case, is very important and is defined: to try to teach through a methodological technique that causes students to pay attention to the explanation. Codina (2014) points out a series of strategies that facilitate the students' attention, such as the following: - Working through active methodologies or experiential learning. - Relating new knowledge to previous knowledge. - Encourage learning in movement. - Establish groups for cooperative work in the classroom.
Art	According to Wright (2006) those students who use music, writing or painting to communicate, cooperate, express their thoughts or resolve conflicts that may occur in the classroom, have a lower level of anxiety or stress so that their emotional problems are also diminished. In addition, Mora (2013) points out that the benefits of art in the classroom for students, among others, are: - Improved imagination. - Development of critical thinking. - Emotional activation. - Free expression of ideas.
Emotions	Jensen (2004) states that emotions are present throughout people's lives, so contributing to the development of skills related to emotional intelligence in the classroom, from an early age, should be positive for the student body. The identification of emotions or their control, as well as the expression of feelings, help students in their personal well-being and, consequently, the predisposition to learning is greater. In the classroom, emotions are increasingly being taken into account because, in addition to the fact that at a learning level it helps students, it also improves their integral development, which is one of the goals of the educational system today.

Note: Own elaboration.

Method

The methodology used in the elaboration of this study is based on the information gathered from the scale (Annex 1) passed to students in the fourth year of the Primary Education degree. Through the information collected, it is suggested to analyze the data obtained through quantitative techniques and statistical analysis, which allowed the design of descriptive analysis, all based on the information extracted from the results obtained. Therefore, the research intends to make a descriptive correlational analysis on the information obtained from the future teachers in order to have an approximate knowledge about the knowledge that future teachers have at the end of their career, who are mainly responsible for providing our society with certain values and knowledge to understand the world that surrounds them today.

Instruments and procedures

In order to carry out this work, we used a scale for the collection of information. Once created, based on an operationalization table, according to the research objectives, we proceeded to a content validity, with expert judgment and pilot test, which was positive.

Results

Through a descriptive analysis of the items considered and the most relevant information provided, the results are presented below. First, as shown in Table 4, it can be seen that a high percentage of the sample strongly agrees with this item, that is, they are of the opinion that future teachers have knowledge of the concept of reading.

Table 4.
Ítem A1.

A1.- Primary school teachers are aware of the concept of reading.				
	Frequency	Percentage	Valid percentage	Cumulative percentage

Valid	,00	9	3,0	3,0	3,0
	Disagreement	15	5,1	5,1	8,1
	Indifferent	55	18,6	18,6	26,7
	Agree	169	57,1	57,1	83,8
	Strongly agree	48	16,2	16,2	100,0
	Total	296	100,0	100,0	

Note: Own elaboration.

As Table 4 ratifies, most of the future teachers are in the histogram curve in the central part, thus attributing that the concept of reading is related to the knowledge that the teachers have. As can be seen, 57.1% agree with the statement, while 5.1% disagree. It is also important to note that 18.6% of the sample is indifferent to the proposed question, which could give rise to two currents, the first being their disagreement with the formulation of the statement or, on the other hand, their lack of knowledge about the term or its relation to their profession.

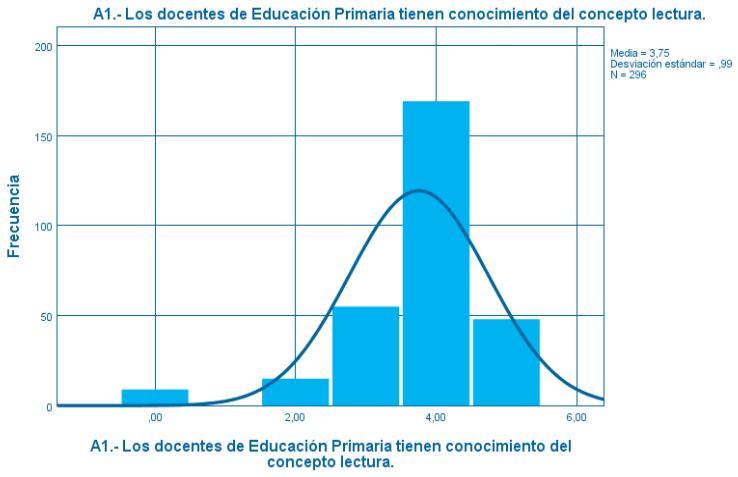

Figure 1. Item A1.

Note: Own elaboration

As can be seen in Table 5, the percentage of people who disagree and are indifferent to this item is similar, we have 41.9% of the sample that considers this item indifferent, so it can be deduced that the vast majority do not know how to differentiate between reading delay and dyslexia, and on the contrary we see 41.2% who totally disagree, implying that they do know how to differentiate between these needs.

Table 5.

Item B8.

B8.- Primary school teachers differentiate reading delay from dyslexia.					
		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	,00	9	3,0	3,0	3,0
	Strongly disagree	15	5,1	5,1	8,1
	Disagree	122	41,2	41,2	49,3
	Indifferent	124	41,9	41,9	91,2
	Agreed	26	8,8	8,8	100,0
	Total	296	100,0	100,0	

Note: Own elaboration.

Figure 2, corresponding to Table 5, shows quite clearly what has been explained above. In the central area we find a great similarity between the percentages, since most of the responses are concentrated in the central part of the histogram, drawing a large inverted U, leaving the extremes with very low scores, which can be said that in this case an item has been raised with great relevance, taking into account that future teachers should have knowledge about it so that in the classrooms of current educational centers they can find this reality, know how to detect it in time and warn the professional.

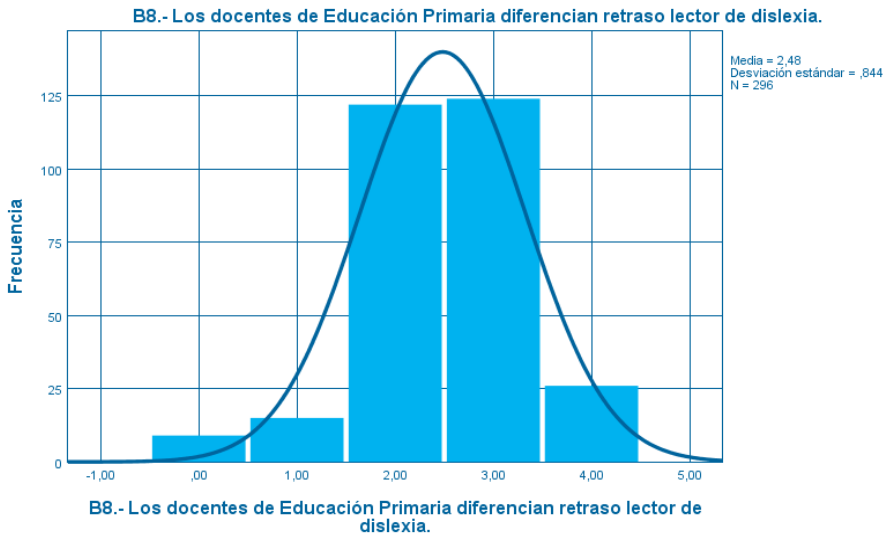

Figure 2. Item B8.

Note: Own elaboration

Continuing with the proposed items, Table 6 shows a great reality in our society, which is trying to evolve in a more favorable way towards coexistence among equals (school and daily), so that all people feel educated and treated equally, whether or not they present functional diversity or any special educational need, since integration does not mean the same as educational inclusion. Observing the table, it can be seen that the highest percentage is concentrated in the disagreement option, corresponding to 37.2%, it can be concluded that the way of seeing and living education is changing and is being transmitted from the universities, which have a great influence on the future teachers who will be arriving at our schools.

Table 6.
Iem C12.

C12.- Integration is equivalent to educational inclusion.					
		Frecuencia	Porcentaje	Porcentaje válido	Porcentaje acumulado
Valid	,00	9	3,0	3,0	3,0
	Strongly disagree	45	15,2	15,2	18,2
	Disagreement	110	37,2	37,2	55,4
	Indifferent	73	24,7	24,7	80,1
	Agreed	37	12,5	12,5	92,6
	Strongly agree	22	7,4	7,4	100,0
	Total	296	100,0	100,0	

Note: Own elaboration.

To complete the information offered by table 6, the histogram corresponding to figure 3 is shown, where the response obtained by students who are finishing Primary Education, who know how to differentiate between these two terms, can be better appreciated. The option of disagreement (37.2%) stands out considerably in comparison with the rest of the responses, thus highlighting the work of university teachers who are bringing about the change that the great majority of current schools are carrying out.

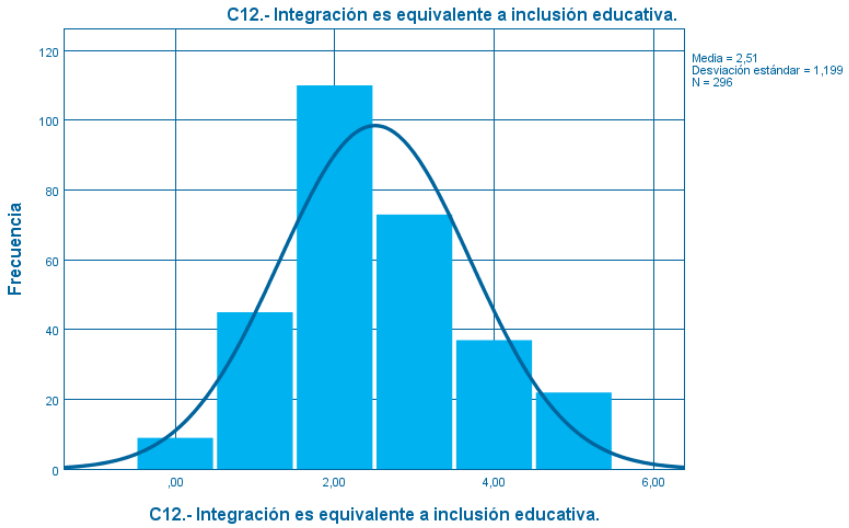

Figure 3. Item C12.

Note: Own elaboration

As can be seen in Table 7, approximately 43% of the sample strongly agrees with this item, so they consider that neuroeducation is the study of the brain and its application to the educational context contributes positively to the teaching and learning process in the classroom, since, through neuroeducation, educational and psychological aspects are combined in order to achieve a teaching and learning process that favors the entire student body at an integral level.

Table 7.
Item D17.

D17.- Neuroeducation is the study of the brain and its application to the educational context.

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	,00	9	3,0	3,0	3,0
	Strongly disagree	11	3,7	3,7	6,8
	Indifferent	95	32,1	32,1	38,9
	Agreed	55	18,6	18,6	57,4

Strongly agree	126	42,6	42,6	100,0
Total	296	100,0	100,0	

Note. Own elaboration.

Next, with respect to Figure 4 corresponding in this case to another item analyzed in the scale where it is stated that Primary Education teachers have knowledge of the brain areas involved in reading, the highest percentage observed in the answers corresponds to disagree and is 40%, therefore we conclude that throughout the four years that make up the studies of this grade they do not end up knowing which are the functions of the brain areas involved in reading. As can be seen, the bell-shaped histogram in Figure 4 is accentuated from the central area of the histogram, where the great majority disagrees.

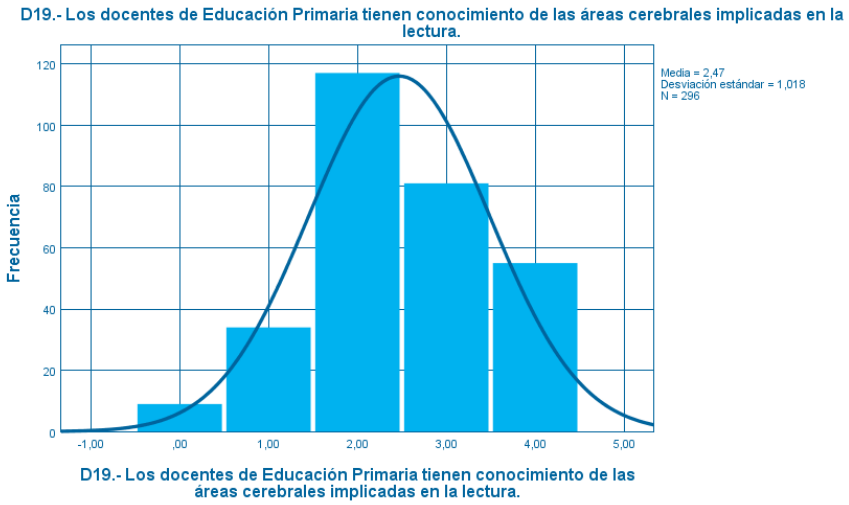

Figure 4. Item D 19.

Note: Own elaboration

Neurodidactics tries to find a field based on research that allows to know a way to teach through neuroscience from a more effective vision for students, as well as to promote their educational performance. In addition, through neurodidactics, brain, attention, memory and emotions are combined in such a way that the potential of the student is improved, as well as the level of significant learning acquired. Observing the results of Table 8 and taking into account the above definition, we see that the students have a slight knowledge of this dimension, 37.2% of the sample agreeing with the proposed statement, although on the contrary we can highlight that the response of indifferent also has a high percentage with 32.1%, which shows that another part of the students do not know well how to work with neurodidactics in their classrooms and the benefits that can be obtained from it.

Table 8.
Item E22.

E22.- La neurodidáctica es la aplicación de las bases neurológicas en los procesos de enseñanza aprendizaje.		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	,00	9	3,0	3,0	3,0
	Disagreement	11	3,7	3,7	6,8
	Indifferent	95	32,1	32,1	38,9
	Agreed	110	37,2	37,2	76,0
	Strongly agree	71	24,0	24,0	100,0
	Total	296	100,0	100,0	

Note. Own elaboration.

Continuing, with respect to Figure 5, we can see how the majority of the sample considers that reading teaching methods should be based on neurodidactic elements, with a clear distribution of the data on the right side of the histogram. This result offers hope, since it can be assumed that future teachers will be more prepared or more predisposed to training in different areas in order to provide quality teaching in the classroom. We see specifically how the mean is high and a very low standard deviation considering that the great majority understands this statement as positive.

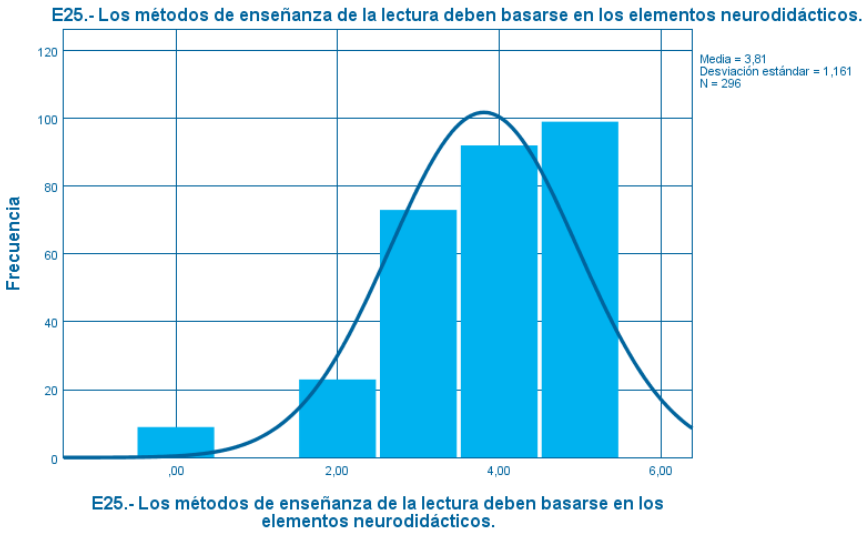

Figure 5. Item E25.

Note: Own elaboration.

To conclude, it has been considered convenient to show the results obtained with respect to the non-parametric analysis that has been elaborated with respect to the dimensions that have been dealt with throughout the research (reading, reading difficulties, educational inclusion, neurodidactics and neuroeducation).

Parametric test

This is a hypothesis test that does not require that the distribution of the population be characterized by certain parameters. For example, many hypothesis tests assume that the population is normally distributed using the parameters μ y. Non-normative tests do not make this assumption, so they are useful when the data are significantly out of the ordinary and are robust to variability. In this case the kolmogorov-Smirnov test has been used, which highlights that for this sample the null hypothesis must be rejected, so the distribution of the data is not normal, and therefore the correlation below is Spearman's Rho correlation.

Table 9.
Non-parametric correlations

Correlations

			A.-READING	B.-READING DIFFICULTIES	C.--EDUCATIONAL INCLUSION	D.-NEUROEDUCATION	E.-NEURODIDACTICS
Spearman's Rho	A.-READING	Correlation coefficient	1,000	,206**	,023	,143*	,017
		Sig. (bilateral)	.	,000	,695	,014	,765
		N	296	296	296	296	296
	B.-READING DIFFICULTIES	Correlation coefficient	,206**	1,000	,609**	,607**	,596**

		Sig. (bilateral)	,000	.	,000	,000	,000
		N	296	296	296	296	296
	C.- EDUCATIONAL INCLUSION	Correlation coefficient	,023	,609**	1,000	,610**	,738**
		Sig. (bilateral)	,695	,000	.	,000	,000
		N	296	296	296	296	296
	D.- NEUROEDUCATION	Correlation coefficient	,143*	,607**	,610**	1,000	,655**
		Sig. (bilateral)	,014	,000	,000	.	,000
		N	296	296	296	296	296
	E.- NEURODIDACTICS	Correlation coefficient	,017	,596**	,738**	,655**	1,000
		Sig. (bilateral)	,765	,000	,000	,000	.
		N	296	296	296	296	296

**. Correlation is significant at the 0.01 level (bilateral).
*. The correlation is significant at the 0.05 level (bilateral).
Note. Table used for the correlation study. Own elaboration.

The correlations that exist between the five dimensions investigated will be presented below, specifying the correlation coefficient between them.

- Dimension A correlates with B: with respect to dimension A which corresponds to reading and dimension B which corresponds to reading difficulties, we can see that Spearman's coefficient gives a result of 0.206.

- Dimension B correlates with C: taking into account the dimensions corresponding to B (reading difficulties) and C (educational inclusion) we observe a Spearman coefficient of 0.609, which indicates a positive range.
- Dimension C correlates with E: the dimensions concerned in this correlation are C (educational inclusion) and E (neurodidactics) where a Spearman coefficient of 0.738 is observed.
- Dimension D correlates with E: these two dimensions present a correlation with a Spearman coefficient of 0.655, which means a very positive and strong correlation, since it is very close to the value 1.
- Dimension E correlates with C: among the correlations that exist between these two dimensions, as in the previous correlation, it can be seen that the value presented (0.738) is very strong and positive.

Discussion and conclusions

To conclude this document, it is necessary to write this section in order to offer a more complete and general view of the research carried out with respect to the Likert scale and Spearman's correlation, as well as the dimensions chosen to shape and articulate this final thesis. Continuing, it is possible to observe some more general conclusions that make a review of the main points of the present work. In the first place, regarding the conceptualization and theoretical frameworks that have made up the present work, it has been made clear how a concept as standardized as reading can give a 360º turn if we apply neuroeducation and neurodidactics when teaching it to our students, being supported by different authors mentioned in each of the theoretical frameworks carried out. On the other hand, during the documentation it was possible to appreciate how the terms as a whole are on the one hand known and worked on as is the example of reading, reading difficulties and educational inclusion, but at the same time a little invisible or little researched as far as the field of neuroeducation and neurodidactics is concerned. Therefore, it was interesting to propose a scale to be answered by the future teachers and to observe the knowledge they had on the different issues raised throughout their entire training. Secondly, the results obtained show how certain teachers have knowledge and a great predisposition to make a great effort to change the current educational system, which will bring a revolution in the coming generations, providing society with more culture, values and education in general. Therefore, we know that teachers who are being prepared receive this type of information, but some questions that underlie this would be, do they know how to apply or use this information? So, this is a small beginning that summarizes a point of view about the training that our teachers receive. Finally and thirdly to add that teaching is a very sacrificial job if one wants to influence in a positive way the coming generations, making them reach a more inclusive, respectful and generous way of life with the people who share the society. We also want to make teachers aware of the need to keep on training themselves, since society is constantly changing and there is a growing need for competent people who know how to approach any problem from different perspectives and get the maximum performance and benefit both from their work and from the development of the people they work with. In addition, neurodidactics combines brain, attention, memory and reading in Primary Education.

For his part, Ocampo (2019) states that through the presence of neurodidactics and thanks to the brain plasticity of students, it is possible, through a dynamic didactic intervention, to focus learning to various educational branches where emotions. According to Ibarrola (2013), would have a great importance in terms of the learning climate, the mood with which both students and teachers face their work or the motivation for teaching.

In conclusion, all educational networks are connected to each other and it would be wonderful to create a work environment where all this information is taken into account, put into practice and create together a more understandable world.

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ANNEX I

READING DIFFICULTIES IN PRIMARY EDUCATION.

SEX: **AGE:** **COURSE:**

The dimensions to be evaluated are the following: A) Reading; B) Reading difficulties; C) Educational Inclusion; D) Neuroeducation; E) Neurodidactics.

Mark with a cross the alternative that most closely matches your personal criteria.

Thank you.

	Strongly disagree	Disagree	Indifferent	Agreed	Strongly agree
A1.- Are primary school teachers aware of the concept of reading?	1	2	3	4	5
A2.- Do primary school teachers know the types of reading (visual, syllabic...)?	1	2	3	4	5
A3.- The reading didactic methodology used in educational centers has a scientific basis.	1	2	3	4	5
A4.- Reading in Primary Education is an inclusive element.	1	2	3	4	5
A5.-The primary education teacher must have neuroeducational training for the teaching of reading.	1	2	3	4	5
B6.- Primary education teachers are knowledgeable about reading delay.	1	2	3	4	5
B7.- Primary Education teachers have knowledge about Dyslexia.	1	2	3	4	5
B8.- Do primary school teachers differentiate reading delay from dyslexia?	1	2	3	4	5
B9.- Reading difficulties affect educational inclusion.	1	2	3	4	5
B10.- Reading difficulties are solved with neuroeducational training.	1	2	3	4	5
B11.- The solution to reading difficulties lies in neurodidactics.	1	2	3	4	5

C12.-Integration is equivalent to educational inclusion.	1	2	3	4	5
C13.- Educational inclusion involves fostering inclusive values and attitudes. .	1	2	3	4	5
C14.- Educational inclusion is facilitated by reading.	1	2	3	4	5
C15.- Educational inclusion needs a neuroeducational basis.	1	2	3	4	5
C16.- Neurodidactics is the key to educational inclusion.	1	2	3	4	5
D17.- Neuroeducation is the study of the brain and its application to the educational context.	1	2	3	4	5
D18.- Neuroeducational-based reading acquires a scientific character.	1	2	3	4	5
D19.- Primary school teachers are aware of the brain areas involved in reading.	1	2	3	4	5
D20.- Primary school teachers have knowledge of neurotransmitters in reading.	1	2	3	4	5
D21.- Primary school teachers are aware of the influence of mirror neurons in reading..	1	2	3	4	5
E22.- Neurodidactics is the application of neurological bases in teaching and learning processes.	1	2	3	4	5
E23.- Primary school teachers are familiar with the neural network of learning to read.	1	2	3	4	5
E24.- The didactic methodology of reading must have a neural basis.	1	2	3	4	5
E25.- Reading teaching methods should be based on neurodidactic elements.	1	2	3	4	5

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