## EDITORIAL TEAM/ EQUIPO EDITORIAL / EQUIPA EDITORIAL

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# SUMMARY • SUMARIO • RESUMO

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# Editorial

Diversity is the predominant trend in educational research today, as is evident in this new issue of MLSER. The first article addresses the vocational orientation of women in the digital context. In its reflection on the challenges of promoting human and social development, research associated with the gender gap and the commitment to reduce the inequalities of women to enhance the welfare and progress is raised. In this sense, the opportunities for participation and professional training in the field of information technologies are pointed out. The study compiles and analyzes the expressions of 267 adolescent women in secondary education regarding their perceptions of the vocational orientation experience and extracts suggestions that lead to formulating and qualifying proposals for the educational environment.

The previous study focused on the Colombian context and the following one on the Peruvian context. In this case, to inquire into teachers' knowledge and beliefs about ADHD. There are two objectives: a) to compare the knowledge, erroneous beliefs, and knowledge gaps of inexperienced teachers (IT) and experienced teachers (ET); and b) to analyze the differences in knowledge, beliefs, and gaps between ETs who had or had not taught students with ADHD. We worked with 264 teachers and obtained as results that the ETs had more answers that are correct in the total scale than the ITs. The ETs with experience in ADHD presented higher rates of teaching stress, although they also had higher self-efficacy and better knowledge about ADHD. Self-efficacy correlated with ADHD experience.

The diversity mentioned above is manifested in the third study, this one in the Mexican setting, to focus on the concept of the share capital and with the objective of revealing how the resources of this type in third year high school students in the city of Torreón, Mexico, affect their school performance. It is a quantitative study: descriptive/correlational. Questionnaires were applied to 130 students and relationships were found between school performance and the number of times the student changes schools; whether the student receives help from his/her teachers to do homework; the parents' perception of the student's school performance; school problems at the level of school suspension and trust towards teachers, among others.

With the title "Development of critical thinking in *Songwriting* students using project-based learning," a study was carried out with the objective of finding the benefit of Project-Based Learning (PBL) in the development of critical thinking competency. The qualitative research indicated that there is a development of critical thinking competence, especially in the subcompetences of Analysis and Evaluation of information.

The scenario changes to the university in the study that analyzes the training based on neuroeducation and positive psychology in the positioning of young people with and without ADHD. Forty-three diagnosed and twenty-one undiagnosed students participated in the study. The findings in both groups show that teaching strategies based on neuroeducation are perceived as tools to improve attention and positive psychology practices as an aid to generate a good attitude and strengthen values.

Distance education in the Brazilian context is another article included in this issue of MLSER. It studies the context of teachers and their limitations with respect to the career plan and other aids that are relevant to distance work. The research has a quantitative approach and is conducted in the northeast and southeast regions of Brazil. The research subjects were 150 teachers and a questionnaire was used as an instrument. It is concluded

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that teachers dedicated to distance education need recognition with respect to public and educational policies.

The following study is devoted to the formation of intercultural citizenship, but takes as a reference the relationship between cultural intelligence and intercultural competencies of teachers in the United States. A cultural intelligence scale was applied to a teaching team of 75 teachers in the areas of mathematics, science, social sciences, English, foreign languages, and sports. Moreover, it was supplemented by qualitative research. The results indicate that the teachers are moderately high in the metacognitive, motivational, and behavioral dimensions, but low in the cognitive dimension of cultural intelligence. All teachers have low intercultural competencies in their professional performance.

The issue of the magazine is completed with an article in Portuguese that deals with the problem of bullying at school. This is a highly topical and interesting subject set in the first cycle of a Brazilian public elementary school. A mixed method is used and data is collected from a sample of 30 children. The results allow us to understand bullying as a systematic intimidation, which often explains the behavior of minors. A formative action of teachers and administrative staff is necessary to get children to tell adults what happens to them in relation to the bad action of other people.



Antonio Pantoja Vallejo
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# VOCATIONAL GUIDANCE FOR WOMEN IN TIMES OF TECHNOLOGICAL REVOLUTION

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**Abstract**. In a context of reflection on the challenges of promoting human and social development that countries such as Colombia are currently facing, to relate citizens to the understanding of the transformations that the 21st century summons characterized by the predominance of influential digital technologies in the reconfiguration of people's ways of life, the interest arose to focus on the risks of women's underrepresentation in the development of information technologies. Around this idea associated with the gender gap and the commitment to contribute to the reduction of women's inequalities to enhance well-being and progress, it was considered relevant to carry out research that investigates through a mixed design, on opportunities to strengthen the offer of vocational guidance that public education institutions in a sector of Bogotá, Colombia, implement in the level of secondary education to make women visible and motivate them to identify opportunities for participation and/or professional training in the field of education information technology. The study collects and analyzes the expressions of 267 adolescent women, who are in secondary education, regarding their perceptions about the experience of vocational guidance and thus contributes suggestions that lead to formulate and qualify proposals for the educational environment, which are recognizing their rights and talents; inclusive and promoters of its integration into a world mediated by information technologies.

**Keywords:** Vocational and professional guidance; education and women; women, and technologies of the information.

# ORIENTACIÓN VOCACIONAL PARA MUJERES EN TIEMPOS DE REVOLUCIÓN TECNOLÓGICA

**Resumen**. En un contexto de reflexión sobre los desafíos para la promoción de desarrollo humano y social que enfrentan en la actualidad países como Colombia, entre los que se busca relacionar a los ciudadanos con la comprensión de las transformaciones que exige el siglo XXI, caracterizado por el predominio de tecnologías digitales influyentes en la reconfiguración de las formas de vida de las personas, surge el interés de focalizar la mirada investigativa sobre los riesgos de la subrepresentación de las mujeres en el desarrollo de tecnologías de la información. En torno a esta idea, asociada a la brecha de género y al compromiso de aportar en la disminución de desigualdades de las mujeres para potenciar bienestar y progreso, se considera relevante adelantar una investigación que indaga, mediante un diseño mixto, sobre las oportunidades que ofrece la orientación vocacional que implementan, en el nivel de educación media, las instituciones educativas públicas de un sector de Bogotá, Colombia, para visibilizar a las mujeres y motivar en ellas la

identificación de oportunidades de participación o formación profesional en el ámbito de las tecnologías de la información. El estudio recopila y analiza las expresiones de 267 mujeres adolescentes, que cursan educación media, en cuanto a sus percepciones sobre la experiencia de orientación vocacional y proporciona sugerencias que conducen a formular una propuesta cuyo alcance permite también cualificar otros planes y programas para el entorno educativo, que sean reconocedores de sus derechos y talentos, incluyentes y promotores de su integración a un mundo mediado por tecnologías de la información.

**Palabras clave:** orientación vocacional y profesional; educación y mujeres; mujeres y tecnologías de la información; desarrollo de la carrera.

## Introduction. The question of vocational orientation and gender discrimination.

In this historical time, influenced by the deployment of communication networks, market globalization trends and transformation of economic and political systems, governments face greater challenges in terms of recognition and inclusion of their population to stimulate economic growth and social development to ensure sustainability and projection (Castells, 2006; Giddens and Sutton 2014; Touraine, 2007). This process entails evidencing the implications that the constant interaction of people with Information and Communication Technologies ICTs has today in the different scenarios where their personal, family, work, and social life takes place (ECLAC, 2012).

The presence of these technologies has imposed on people and societies ruptures and modifications in their behaviors, which have marked new directions and, in turn, have opened possibilities for the expansion of [1]citizens' capacities to understand the changes and participate in the assumption of new trends (Castells, 2006; Han, 2018). In this context, making women visible represents an essential commitment to generate conditions of justice and equity (Castells, 2006; Nussbaum, 2002; Touraine, 2007).

It is important to recognize and address the imbalance of economic, social, and political opportunities that women have historically had compared to men and the predominance of interaction practices characterized by undervaluation, marginalization, and ignorance of their potential to create and manage their own life projects based on the exaltation of their interests and rights as autonomous individuals and citizens (ECLAC, 2013; Touraine, 2007). In terms of Castells (2016), the inclusion of women, who for decades have been discriminated against and have had more barriers to access opportunities that ensure their human, social, and economic development, is a key challenge for governments in the 21st century.

In particular, policies led by governments, in their mission to develop educational systems, require considering the participation of women in the construction of societies that are increasingly interconnected with the digital world (Castells, 2016).

In the demand for permanent adaptation that countries inevitably experience in the current historical moment, educational institutions are called to review and contextualize their offerings to eradicate models and practices that reproduce inequalities from the process of building the curricula that guide their work, where imaginaries about men and women underlie, which underlie the design and development of all educational

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[1] In the development of this document, the double mention of gender will be used when the grammatical construction and the writing context require it. In other cases, the masculine gender will be used, considering the inclusion of men and women (Real Academia Española).

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actions, including vocational guidance offerings (Subirats, 2017).

With the purpose of detailing the view on the orientation offer, particularly in secondary education, corresponding in Colombia to the tenth and eleventh grades, and incorporating elements that make women and their relationship with ICTs visible, it is proposed to develop this research. Its purpose is to identify and generate reflections on the choice of the professional route of adolescents and young women, which in turn, will generate understanding of their inclusion in any professional space and, in particular, promote in them the identification of training and participation opportunities in this area, which today constitutes a transversal axis to guide professional life routes (ECLAC, 2014a).

The problem defined in the study is formulated through the question: how to incorporate the visibility of women in the vocational orientation offers of secondary education in order to promote their identification of training and professional development opportunities in the field of information technologies?

Specifically, the problem interrelates three aspects: the supply of vocational guidance in secondary education, women in secondary education and the introduction of women to professional development in the field of information technologies.

The observation of the three elements indicated is understood as an opportunity to resume the analysis of the conditions of inequality that throughout history have been experienced by women and have limited their freedom (ECLAC, 2012ª; Nussbaum 2002; Subirats, 2017; Touraine, 2007;) and to raise reflections to promote new practices in the educational environment.

Vocational guidance in secondary education is defined as an educational strategy to offer support to adolescents and young people at a decisive moment in which they are proposed to outline the path to assume their autonomy and move towards adulthood with tools that enable them to select their priorities, based on their own criteria that promote their capabilities and freedom of agency (Álvarez and Bisquerra, 2012).

Secondary education is a bridge to continue higher education studies and, given the history of underrepresentation of women at this level, it is expected to encourage and strengthen them to identify possibilities that recognize their characteristics, interests and talents. Promoting them by guaranteeing their rights makes it possible to move forward in closing the gap that has kept them at a socio-cultural disadvantage (ECLAC, 2012ª; Nussbaum 2002 and 2012,).

The so-called gender gap evidences that, for different reasons, women have had fewer opportunities to participate in education and in leadership and decision-making spaces, which has given them a place of subordination and dependence (ECLAC, 2012b; Castells and Subirats, 2017; González, 2002; Touraine, 2007).

During the last decades, it has been identified in the Latin American region, the increase of women who finish secondary education and access higher education; however, their decision to pursue programs other than mathematics, science, and engineering is still notorious, a reality that raises questions about the reason for this inclination (ECLAC, 2019).

The demands of the 21st century associated with the deployment of Information and Communication Technologies require that men and women relate to these tools and know their potential to interact with them and find options for participation and professional development. The predominance of information technologies in every area

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of human life, demands to review the place of women and offer ways to ensure their integration through the development of capabilities. (Castells, 2016; ECLAC, 2014a; ECLAC, 2019).

Neglecting this commitment to justice and equity could mean the deepening of the gender gap. An alternative to avoid this is to promote that more women are present in technological developments, a purpose that requires not only socializing information, but also recognizing the debt due to exclusion and motivating their presence in the field of technology and science, which today is reflected in a maximum distribution of 70% men and 30% women (IDB, 2019; ECLAC, 2014b; European Union, 2018;).

To promote changes in perspectives and expand work initiatives from the educational environment, it is proposed to reflect specifically on the aspect of vocational guidance and propose actions that explicitly accompany women to live the transition to independence and economic autonomy, preparing them to assume roles that enable their active participation in the exercise of their rights (ECLAC, 2017 and 2019).

The above implies rethinking school orientation offers based on the recognition of the trends of the new social dynamics, the organization of work according to the forms of production and identifying strategies that ensure the inclusion of women to make them part of the digital world, understanding the changes in the labor market, directly influenced by information technologies. Forecasts refer to uncertainty, constant adaptability, development of socio-emotional and specialized competencies, and emergence of new professions (IDB, 2019; OECD, 2018;).

The technological convergence that integrates the so-called Fourth Industrial Revolution includes trends in automation, artificial intelligence, cloud computing, analysis of large volumes of information, internet of things, machine training, and technological intermediation, all of which structurally modifies production systems and radiates jobs in all sectors of the economy and transforms social interaction (ECLAC, 2019; Schwab, 2016;).

The effective participation of women will foster creativity and the construction of diverse and contextualized knowledge, which is the basis of innovation for the competitiveness and sustainability demanded today by national and international markets (Castaño, 2011, ECLAC 2014b, 2019).

The concept of vocational guidance, associated with career guidance, socio-vocational guidance, socio-occupational guidance, and career counseling, is a category of study that has generated controversy since the first decades of the twentieth century, when different initiatives emerged to support young people in deciding on their educational future and preparing them to enter the productive world (González, 2014).

There are references to guidance of North American and European origin; in the United States we speak of vocational guidance and in the old continent it is known as professional guidance. Throughout history there have been different approaches that manage to coincide in the purpose of providing students with tools for self-knowledge, identifying talents, and opportunities; obtaining information on training programs and fields of action; and making decisions regarding the area of study they will pursue, after finishing secondary education (Álvarez and Bisquerra, 2012; Ministry of Education, Social Policy and Sport, 2008;).

Recent academic production, evidences academic interest in the design, development, and evaluation of vocational guidance programs, recognizing that they

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constitute an essential input to contribute to the choice that people make about an area of study and to the construction of the life project that will allow them to interact in the social context (Abello, 2007; Chamorro, 2016; Cruz, 2013; Duarte, Hernández and Rodríguez, 2016; González, 2014; Panqueba and Mesa, 2014).

It highlights the interest in understanding the vital moment of people who finish high school and middle school and the social expectations about the importance of students preparing themselves to develop an activity that derives income and ensures them autonomy, participation, and projection (Abello, 2007; Chamorro, 2016; Cruz, 2013; Duarte, Hernandez and Rodriguez, 2016; Gonzalez, 2014; Panqueba and Mesa, 2014).

Likewise, it has been reported that vocational guidance has an effect on reducing dropouts from the programs chosen by young people in post-secondary education, referring to the academic options that it is possible to pursue after finishing eleventh grade, in two routes: university education and technical vocational training (MEN, 2017). It has also been found that this orientation has an impact on self-satisfaction, the sense of belonging and the quality of performance that people have when they finish their studies and participate in some sector of the economy.

Research on vocational guidance in the context of secondary education denotes a variety of approaches from methodological designs of quantitative and qualitative approach, which offer contributions to make decisions about who should lead it, who should participate, with what resources, with what intensity, at what time is more convenient and how its implementation is evaluated (Abello, 2007; Chamorro, 2016; Cruz, 2013; Duarte, Hernandez and Rodriguez, 2016; Gonzalez, 2014; Panqueba and Mesa, 2014).

The review prior to the research[2] identified the absence of studies documenting the relationship between the contributions of vocational guidance offers and motivation to promote the identification of opportunities for participation and training in the field of information technologies among adolescent women. There is also no evidence of studies on how to make women visible in the educational environment in order to reduce the gender gap that may widen if the trends in the use and appropriation of information technologies continue in different contexts.

For this reason, it is considered useful to contribute, with the study, to expand the work in vocational guidance and contextualize the opportunity to provide relevant offers to meet the needs of students and the social and labor market conditions of the XXI century. Likewise, to make women visible and promote the understanding of the meaning of their interaction with Information and Communication Technologies, as an alternative to promote their development and autonomy.

## Method. Path followed in the research

Based on the objective of elaborating an educational program of vocational orientation for the secondary education level that promotes in women the identification of training and development opportunities in the field of Information and Communication Technologies, the research is framed in a comprehensive and action paradigm that allows,

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[2] The majority of documents consulted were master's and doctoral theses produced between 2013 and 2016).

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not only to describe and contextualize the phenomenon related to the study category vocational orientation, but also to derive a product to contribute to the strengthening of the design and development processes of vocational orientation strategies specifically aimed at women in secondary education, based on the reflection on the challenges of human development and the generation of conditions of inclusion.

A mixed research design (Hernández, 2014) that combines quantitative and qualitative data collection techniques is used. The inquiry through the quantitative method gathers the perceptions of adolescent girls on the key aspects present in the vocational guidance they receive in tenth and eleventh grades and their relationship with the opportunities of the digital world. The qualitative inquiry is subordinated to the quantitative method and emphasizes the understanding and interpretation of the study phenomenon, through a greater deepening of the quantitative findings and the theses they raise.

The population of the quantitative component considers 100% of female students (872) at the secondary education level (adolescents between 15 and 18 years old), in 2019, in all (nine) public educational institutions of one of the twenty territorial divisions of Bogota, capital of Colombia, known as Barrios Unidos.

The sample is defined by random selection of female students in tenth and eleventh grades. With a margin of error of 5%, the sample is composed of 267 women.

The quantitative research was carried out through the application of an instrument for consulting the opinion and perception of adolescent girls about the vocational guidance offered. This instrument was designed specifically for the research and consists of nine multiple-choice questions. The instrument was defined on the basis of previous contributions received from female high school students and the review of 5 professionals specialized in adolescent education.  The design of the instrument considers the recognition of the characteristics of the moment of development of adolescent women and emphasizes on making it understandable using a language close to them. The questions are associated with the variables defined: vocational orientation process developed at the high school level and women's inclination towards professional careers.

The quantitative inquiry allows us to know the general characteristics of the vocational orientation offer in the educational institution based on the perception of the adolescents and opens the way to formulate the qualitative inquiry, seeking to complement, according to the understanding of the women participants, their experience of vocational orientation.

In order to complement the information and give consistency to the research design, the qualitative inquiry process is developed in a second moment, after the analysis of the results of the quantitative instrument and the reflection on the main needs of understanding required by the analyses carried out. We worked with the focus group technique (Hernández, 2014); five groups were conducted with adolescents representing five of the educational institutions. A total of 25 women participated, who also previously filled out the quantitative instrument.

The information collected with the selected instruments follows a process of analysis and interpretation corresponding to the research design. Each question of the quantitative instrument is analyzed in terms of percentage and, based on this analysis, the questions developed in the focus groups are designed in such a way as to deepen aspects that support the understanding of the quantitative findings.

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The structure of the quantitative instrument facilitates the organization of information into six categories for analysis. These categories are: 1) existence, form and mode of vocational guidance; 2) existing leadership in the vocational guidance offer; 3) participants in vocational guidance activities; 4) presence of women in vocational guidance; 5) contributions of the vocational guidance offer to the relationship with the field of information technologies; and 6) opportunities to enrich the vocational guidance offer.

From the analysis of the focus groups, categories also emerge that are used to relate quantitative and qualitative aspects. These categories are: 1) perception of the vocational guidance offer provided by the educational institution, equivalent to the students' understanding of the vocational guidance offer to which they have access in their educational institution; 2) valuation of female inclusion in the vocational guidance offer, evidenced in the considerations reflected in the students' positions on the visibilization of women in the vocational guidance offer provided by their educational institution; 3) self-assessment of the capacity and development of female talent in the field of information technologies, expressed in the concept that women have about their own capabilities and opportunities to guide their personal and social development and 4) interest in vocational training in the field of information technologies, derived from the offer of vocational guidance provided by the educational institution.

## Results. Weaknesses and strengths of vocational guidance for female adolescents.

The subordination of the qualitative method to the quantitative method makes it possible to relate the findings of both inquiries to achieve a cohesive interpretation.

The interpretation of the percentages obtained with the quantitative instrument is related to the manifestations of the women in the focus groups and it is possible to establish associations that link the experience of vocational guidance with the perception of being a woman and being part of the education offered.

The following results stand out: 96.6% of the adolescents recognize the existence of a vocational guidance offer in their institution, worked on in workshops, visits to universities, application of tests and fairs of higher education institutions, but consider that it does not make visible their characteristics, strengths and interests. 56% of adolescent girls identify the person who exercises the role of *counselor* as the main responsible for vocational guidance actions and consider that other actors linked to the educational institution (teachers, academic coordinator, and family) could participate and, if possible, link external guests who promote relevant updates in the implementation of specific actions that recognize women and enhance their opportunities for participation and development.

Regarding the characteristics of the proposed activities and the person who leads them, 62% of the adolescent girls perceive that the vocational orientation offer does not sufficiently respond to their searches and expectations to strengthen their transition process after finishing eleventh grade. 99.9% of the women consider that the work carried out in the orientation spaces does not include alternatives to intentionally make women visible and promote them, and even less, to relate them to the opportunities for integration

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in the field of information technologies and the recognition of the changes in the social, economic, and political paradigms of the 21st century.

Adolescent girls are critical with respect to the contribution of vocational guidance at the secondary education level for their personal and professional projection. 65.2% express greater expectations given their vital moment; they recognize their capacities and would like to have support from the educational institution to exalt their interests and talents in the face of the dynamics of naturalization of neutral educational practices that do not include a gender approach and maintain practices based on sociocultural stereotypes that generate distance between men and women. In particular, they express interest in the possibility of vocational orientation activities facilitating options for them to dialogue with men about gender stereotypes and the implications of maintaining interactions based on female undervaluation.

Among the considerations of women to vindicate their position in the context of the vocational guidance offer, 94.7% propose to introduce adjustments in the strategy by opening spaces for interaction, inclusiveness, attractiveness, convenience, fairness, and visionary. In addition to recognizing their rights and particular characteristics, their priorities include bringing students closer to the offer of post-media education programs in ICTs and explaining their characteristics; inviting employers to present professional development opportunities for women in the field of IT; showing students examples of women with professional experience in IT and articulating vocational guidance work with all the subjects taught in the curriculum.

In the qualitative research, the women expressed that in their opinion, the vocational orientation processes developed by the educational institutions of Barrios Unidos in the tenth and eleventh grades do not make visible the characteristics and interests of adolescent girls and restrict the possibility for them to identify opportunities for training and participation in the field of information technologies.

In relation to the perception of the vocational orientation offer, there is a generalized expression of discontent because they do not feel welcomed in the design and development of the activities and think that they do not respond to their interests. They suggest that the activities could be improved to support their preparation and decision making as of the completion of the eleventh grade. In their opinion, this would be possible if: the orientation recognizes their characteristics and interests; is articulated with the curriculum and expands the resources for consultation and relationship with families, academic institutions that offer programs at the post-secondary level, the productive sector, and professional women who share their personal and work life experiences.

Regarding the inclusion of women in vocational guidance, the adolescents mention that it is necessary to develop actions to recognize them and transform the stereotypes in the educational environment that affect the exercise of women's rights and that reinforce the concealment of the meaning of making them visible and promoting them in the different scenarios of social interaction.

Regarding the self-assessment of capabilities and the development of female talent in the field of information technologies, women refer to their capabilities and strengths to develop learning in any area; they state that they consider themselves to be distant from information technologies because the realities of the family and educational environment have kept them at a distance; First, because of cultural stigmas that associate men with technological artifacts, and place them in other fields, reproducing the idea that they should not or cannot interact with technologies and, second, because the activities of the

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curriculum subjects do not promote their interaction with information technologies, generating as a result, the learning of a pattern of isolation from them.

Regarding the interest in professional training in the field of information technologies resulting from the vocational orientation offer, the adolescents reaffirm that they do not identify options of relationship with information technologies. They show a lack of reflection on aspects such as sexist language; the recognition of the characteristics, interests, and capabilities of women and the motivation to promote the understanding and development of specific skills for the appropriation of information technologies. From their perspective, cultural models are accepted and disseminated by managers, teachers, counselors, male peers, and by women themselves. This leads to feelings of hopelessness and resignation regarding their social role and the expectation of finding spaces for participation that allow them to be recognized in the field of information technologies.

They express that it would be different if the process were aimed at recognizing the gender gap and expanding opportunities to provide women with spaces for inclusion and identification of opportunities to interact with information technologies, taking into account the challenges of living in a digital world.

These results provide the inputs for the design of the educational program of vocational orientation for the secondary education level in order to promote the identification of training and development opportunities for women in the field of information technologies.

## Discussion. Adolescent females, vocational guidance, and information technologies.

The findings of the quantitative and qualitative research process and the suggestions regarding the options to generate changes in the offer allow linking the theoretical and conceptual framework of this research and argue that the approach to the study category of vocational guidance is a relevant topic and is under permanent construction. As comprehensive global approaches point out, vocational development is a complex, multifunctional, and multidimensional process that must be approached with a holistic view, which represents a challenge for all the actors that dynamize the work of educational institutions and for the entities that lead the management of public policy in education (Álvarez and Rodríguez, 2006; OECD, 2004, 2018;).

Including the gender perspective to close the gap between women and men in the supply of vocational guidance means rethinking the schemes in place and adopting new guidelines to promote the guarantee of the right to education and development of women on an equal footing with men (Castells and Subirats, 2007; ECLAC, 2013; Serres, 2013; Subirats, 2017).

In addition, making women visible and acting to include them in this historical time by giving them roles different from the traditional ones requires relating them to the interconnected world facilitated by Information and Communication Technologies and generating conditions for them to develop their capabilities and value their contributions and productions (IDB, 2019; Castells, 2016; ECLAC, 2019; Nussbaum, 2012).

The results show that it is convenient to continue proposing research actions that consider the preparation for the participation of women from basic and secondary education in processes associated with economic growth and social development with the

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integration of Information and Communication Technologies. Although this is a growing topic, as noted in the theoretical framework, the academic production does not yet delve into the identification of opportunities that can be derived from vocational orientation to contribute to closing the gender gap in times of technological revolution.

The above argues the relevance of continuing to analyze the challenges in vocational guidance work, summoning the participation of all the actors involved to observe the achievement of its objectives in the context of educational and pedagogical bets within society and agree together, as suggested by Alvarez and Bisquerra (1996-2017), the implementation of strategies to generate cultural, pedagogical, and didactic transformations that enrich the offerings of the educational institution aimed at men and women.

## Proposal. An inclusive vocational orientation for women

The proposal is understood as an educational program or organization of cohesive actions to systematically guide the achievement of pedagogical objectives and a purpose, which in this case is related to the strengthening of the Institutional Educational Project, concerning the offer of vocational guidance and the implementation of the curriculum.

The conceptual foundations of the proposed program are guided by the human development approach formulated by Nobel Prize-winning economist Amartya Sen, who recognizes people as the wealth of nations and argues that social development should be centered on the promotion of freedoms, in order to generate in all individuals, under conditions of equity, the skills that allow them to shape their own destiny. That is, to encourage the role of human agency, understood as what each person is free to do and achieve according to his or her valuations of priority and relevance (Sen, 2000; Sen and Kliksberg, 2007).

This approach highlights the contribution of interactions with other individuals in the expansion of people's freedoms, to access different options, and the intervention of the State with all the institutions that can offer opportunities to promote capabilities.

Along the same theoretical line as Sen, the capabilities development approach is complemented by the postulates of Martha Nussbaum, who refers to what people are capable of doing and being, in accordance with an intuitive idea of life that corresponds to the dignity of the human being. She argues that capabilities should be procured for all people, treating each one as an end and not as a tool for the ends of others, thus enunciating the principle of the capability of each person, which is necessary to promote in order to speak of participation and well-being (Nussbaum, 2002, 2012).

Based on this theoretical foundation and the voices of women, the following guiding principles of the proposal are formulated.

- *Recognition of individual capabilities*: consists of making visible and valuing the characteristics and development potential of each woman who is part of the social system.
- *Participation*: associated with the generation of inclusive conditions for women to achieve a sense of belonging and motivation for self-management and co-creation.

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- *Flexibility*: refers to the possibility of introducing timely adjustments in the design and development of the vocational guidance offer, according to the interests and needs of the women participants.
- *Continuity*: understood as the formal implementation of a constant and uninterrupted offer in the spaces defined in the academic calendar.
- *Articulation*: it is equivalent to harmonizing purposes and resources between the design of the institutional educational project, the development of the curriculum and the vocational guidance offer, in order to present a cohesive work, which facilitates the understanding of the meaning of the different actions.
- *Contextualization*: related to the identification and analysis of the opportunities and strengths offered by the family environment and the socio-cultural contexts in which women live their lives.

### Objectives

Promote the visibility of women in the vocational orientation offer developed by educational institutions at the secondary education level.

Encourage reflection processes to transform vocational guidance offers through the inclusion of women with a gender perspective and the identification of opportunities for participation in the digital world.

Encourage the inclusion of the gender perspective and the understanding of the challenges of configuring the knowledge society in the design and development of the institutional educational project with emphasis on the vocational orientation strategy.

Table 1

*Lines of action and contents*

| Line | Contents | Triggering questions | Example of practice guidelines |
|---|---|---|---|
| Human rights | Human development. Women's right to education and development on equal terms with men. Gender stereotypes. Sexist language. Gender gap. | How is human development and the recognition of women's rights promoted in the educational environment? What cultural practices restrict the guarantee of women's rights? | Dialogue between actors of the educational community around perceptions and imaginaries about women, female gender, rights, and development. Identification of common relationship practices with the female gender. |
| Development of individual capabilities | Recognition of women's capabilities. Recognition of the characteristics of the vital moment of adolescent women. | How and why make visible and exalt women's capabilities, strengths, and talents? How to recognize and address the particular | Detailed listening to the life stories of women who are part of the educational community. Socialization of characteristics, |

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| Line | Contents | Triggering questions | Example of practice guidelines |
|------|----------|----------------------|-------------------------------|
| | Generation of conditions and opportunities for women's participation. Inclusion, equity. | characteristics of women to enhance their development? | interests and achievements. Analysis of the characteristics of the spaces for women's participation in the family, educational, and community environments. |
| Challenges for integrating women's participation in society and in the knowledge economy | Knowledge society and economy in the 21st century. Social development and economic growth based on information technologies. Gender digital divide. | What are the consequences for women's freedom and for social and economic development of the exclusion of women in times of technological revolution? | Context analysis of economic and social changes in the 21st century. Challenges of the educational environment to develop capabilities in the XXI century. Review of situations of inequity and exclusion experienced by women in the family, school, social, and work contexts. Documentation of comparative international, national, and local figures on the social and economic situation of women. Reflection on participation opportunities offered by information technologies to women and the implications of the technological revolution on women's labor market. |
| Inter-institutional and intersectoral management to support | Characterization of economic development sectors. Characterization of post-secondary education offerings and | How and with whom can the processes to enrich the offer of vocational guidance led by educational institutions be made more dynamic? | Identification of key actors inside and outside the educational institution. |

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| Line | Contents | Triggering questions | Example of practice guidelines |
|---|---|---|---|
| the qualification of the vocational guidance strategy offered by the educational institution. | analysis of professional development opportunities. | | Formation of support networks for the management of the educational institution. Review of the regulatory framework and development of a gender focus in the management of vocational guidance in the educational environment. Identification of contributions of information technology integration in professional development. |

*Note:* Source: Own elaboration.

## Methodology

According to the voices of the women participating in the research, environments for dialogue and construction should be fostered by considering work spaces: individual, conversations, workshops, forums, consultations, and extracurricular meetings that can be face-to-face or through the use of technological resources, if there are infrastructure conditions, meetings to present testimonies of women with professional experience who share stories and lessons learned that can be references to identify characteristics of the work environment.

## Monitoring and evaluation

Scheduling, within the school calendar, of spaces for analysis and assessment of achievements and opportunities for improvement in the development of vocational guidance activities, with the participation of adolescents, teachers, and the guidance counselor. This procedure should include adjustment proposals to reorient the development of the work plan.

## Conclusions: successes and scopes of the research process carried out

The research is developed according to the design; the inquiry allows answering the guiding questions and with this input the educational program is designed: what issues are relevant for the vocational guidance offer developed in the tenth and eleventh grades to promote in the students the interest in identifying training opportunities in the field of ICT? What pedagogical assumptions can contribute to strengthening the work in

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vocational guidance to facilitate the integration of tenth and eleventh grade students in ICT-related learning? What educational and pedagogical strategies are required by the institutions, based on the characterized guidance practices, to mobilize vocational guidance to make women visible? What educational and pedagogical strategies are required by the institutions, based on the characterized guidance practices, to mobilize vocational guidance to make women visible? What educational and pedagogical strategies do the institutions require, based on the guidance practices characterized, to mobilize vocational guidance aimed at women? What lessons can be learned to promote in Colombia the participation of women in ICT training through vocational guidance processes?

Based on the information gathered, it is evident that the offer of vocational guidance in secondary education, in the participating institutions, does not include a gender approach and this omission contributes to maintaining the condition of social disadvantage experienced by women (ECLAC, 2017).

There are opportunities for transformation to strengthen quality and relevance in accordance with the responsibility of accompanying the individual projection and social integration of adolescent women. This work can contribute to the revision, updating and contextualization of the institutional educational project, in order to advance in the understanding of the challenges that educational processes face in the development of capabilities with a gender approach in the 21st century.

The orientation offerings articulated in the curriculum must integrate the development of digital competencies and prepare students to understand the digital transformation challenges facing the country. This includes inter-institutional and intersectoral management.

The spaces for interaction to collect the information for the inquiry are confidential, without the intervention of the professional team linked to the institutions; and this allowed the women to feel comfortable expressing their perceptions to the point of expressing that they liked the invitation because they had not had similar experiences directed specifically to them.

Limiting aspects of the fieldwork were the delay in obtaining permission to access the different educational establishments and the constant changes in the planned schedule due to various circumstances in the dynamics of the educational sector during 2019.

In relation to the quantitative instrument, it is worth mentioning that not 100% of responses to all the questions were obtained and the question remains as to why, if there was space for indications and questions before filling out the questionnaire. In the focus groups, this aspect was consulted and no specific answer was obtained.

Another concern about the quantitative instrument is the answer of option *other*, without indicating a subject. In the group research, it is known that perhaps some adolescents did not agree with the options given, but at the time of answering, they were unable to express an alternative.

Regarding the qualitative instrument and associated with the management of authorization to enter the establishments and the atypical behavior of the school calendar of the public education sector during 2019, it was not possible to obtain permission to conduct more focus groups.

As an opportunity to generate new questions on the topic addressed, the relevance of continuing to promote research in this field is identified, which also integrates the voice

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of adolescent men, in dialogue with women, guidance counselors, teachers, families, and authorities of the educational sector to analyze their views on the gender and equity approach and contextualize the supply of vocational guidance in the face of the challenges of the twenty-first century.

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# KNOWLEDGE AND BELIEFS ABOUT ADHD OF PERUVIAN TEACHERS: THE ROLE OF TEACHING EXPERIENCE WITH ADHD

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**Abstract**. Introduction. Studies that have analyzed teachers' knowledge, misconceptions and gaps about ADHD have focused primarily on North America, Europe and Asia, fundamentally. However, the knowledge of teachers in South America and Central America about ADHD has not been analyzed. Aims. Therefore, in this study we set two objectives: a) to compare the Peruvian pre-service teachers (PSTs) and in-service teachers´(ISTs) knowledge, misconceptions and lack of knowledge about ADHD, and b) to analyse the differences in knowledge, misconceptions and lacks of knowledge between ISTs with and without experience about ADHD. Method. Two hundred sixty-four teachers completed the Knowledge of Attention Deficit Disorder Scale (KADDS), the Index of Teaching Stress (ITS), and a socio-demographic questionnaire. Results. Results showed that ISTs had more correct answers on total scale, on general information and on treatment sub-scales than PSTs. The PSTs had more lacks of knowledge on total scale than ISTs. The ISTs with experience about ADHD had more teaching stress, higher scores on self-efficacy and more accurate knowledge on total scale and on each sub-scale. In addition, ISTs knowledge correlated with post-grade education and years of experience. Self-efficacy correlated with experience about ADHD and years of experience. Discussion. The importance of misconceptions and knowledge gaps about ADHD for teacher training is discussed.

**Keywords*:* Teachers' knowledge, ADHD, teaching stress, pre-service teacher, in-service teacher.

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# CONOCIMIENTOS Y CREENCIAS DE LOS MAESTROS PERUANOS SOBRE EL TDAH: EL ROL DE LA EXPERIENCIA DOCENTE EN EL TDAH

**Resumen**. Introducción. Los estudios que han analizado los conocimientos, creencias erróneas y lagunas de los profesores acerca del TDAH se han centrado fundamentalmente en América del Norte, Europa y Asia, fundamentalmente. Sin embargo, no se han analizado los conocimientos de los profesores de América del Sur ni de América del centro acerca del TDAH. Por ello, en este estudio nos planteamos dos objetivos: a) comparar los conocimientos, las creencias erróneas y las lagunas de conocimiento de los profesores sin experiencia (PSE) y de los profesores con experiencia (PCE), y b) analizar las diferencias en el conocimiento, las creencias y las lagunas entre los PCE que habían enseñado o no a alumnos con TDAH. Método. En total 264 profesores completaron la Knowledge of Attention Deficit Disorder Scale (KADDS), el Index of Teaching Stress (ITS), y un cuestionario socio-demográfico. Resultados. Los resultados mostraron que los PCE tuvieron mayores respuestas correctas en la escala total que los PSE. Los PCE con experiencia en TDAH presentaron mayores índices de estrés docente, aunque también mayor autoeficacia y mejor conocimiento sobre el TDAH. La autoeficacia correlacionó con la experiencia en TDAH. Discusión. Se discute la importancia de las creencias erróneas y de las lagunas de conocimiento acerca del TDAH para la formación del profesorado.

**Palabras clave:** Conocimiento docente, TDAH, estrés docente, profesores sin experiencia, profesores con experiencia.

## Introduction

But it was not until 1982 that the educational laws allowed the creation of special education classrooms in ordinary schools. Later, the General Education Law (Ley N° 28044, 2003) opted for inclusive education and the normalization, quality, and equity of education. This meant that, all students can be educated with their peers in equal conditions. Thereby, quality educational attention is proposed for populations in situations of vulnerability for whatever reason (Salas et al., 2012). It should be noted that, this law includes ADHD in special educational needs.

Attention-deficit/hyperactivity disorder is one of the most frequent neurodevelopmental disorders in childhood and adolescence. It is characterized by the presence of a persistent pattern of inattention, and /or hyperactivity and impulsivity (DuPaul, & Stoner, 2003; Pierrehumbert et al., 2006). In addition, executive functions, which are necessary for planning, organizing and carrying out complex human behaviours over long periods of time, are affected (Barkley, 2011). These manifestations must be present before the age of twelve, and have to be present at least in two different settings, such as home and school. Children should present with at least six symptoms, while adults should present at least five. The diagnosis of ADHD should only be made if it is visibly interfering with the social, academic, occupational or recreational development of the child or adult (APA, 2014).

The prevalence is variable due to different factors. For example, in general, it is estimated to be only between 1-20%, at of school age worldwide (Polanczyk et al., 2007). A more specific study indicated that it is 3.4% (Polanczyk et al., 2015). In Spanish-speaking countries such as Spain, prevalence ranges from 2-6% (Criado-Álvarez, &

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Romo-Barrientos, 2003), although its prevalence in preschool age is 5.4% (Canals et al., 2018). However, in Peru, where the studies are mainly clinical and few; the prevalence is between 5-10% (Saavedra Castillo, 2001; Tirado et al., 2012). This variability is due to methodological, demographic and cultural aspects as indicated in the recent meta-analysis (see Polanczyk et al., 2015).

In this sense, teachers are valuable sources of information with regard to identification, diagnosis, evaluations and treatment of ADHD, due to of their daily contact with children in a variety of settings (Bussing et al., 1998). In addition, most of the referrals to pediatricians are made by teachers (Arnett et al., 2013; Snider et al., 2003).

However, a few studies have analyzed teacher's knowledge, beliefs and misconceptions about ADHD, in comparison with studies that research on medication in ADHD. The majority of these studies have been carried out in North America, Middle East, Australia, Europe, and Asia (Alkahtani, 2013; Akram et al., 2009; Brook et al., 2000; Canu, & Mancil, 2012; Ghanizadeh et al., 2006; Graczyk et al., 2005; Havey, 2007; Hepperlen et al., 2002; Holst, 2008; Hong, 2008; Jarque et al., 2007; Jerome et al., 1994; Kos et al., 2004; Nur, & Kavakci, 2010 ; Poznanski et al., 2018; Sciutto et al., 2016; Soroa et al., 2016; Snider et al., 2003; Syed & Hussein, 2010; West et al., 2005). However, no studies were found investigating ADHD in South or Central America, neither in Africa.

The pioneering study of Jerome et al., (1994), revealed that 66% of all teachers had the misconception that sugar and food additives are the cause of ADHD (Barbaresi, & Olsen, 1998; Bekle, 2004; Piccolo-Torsky, & Waishwell, 1998; West et al., 2005), or that sugar has a significant influence on hyperactivity (Herbert et al., 2004; Jerome et al., 1994; Ghanizadeh et al., 2006; Perold et al., 2010; Sciutto et al., 2000; West et al., 2005). Also, that ADHD is caused by poor parenting (Ghanizadeh et al., 2006; Norvilitis & Fang, 2005). In addition, some studies indicate that there is a relationship between ADHD knowledge and confidence to teach children with ADHD (Alkahtani, 2013; Jarque et al. 2007; Sciutto et al, 2000).

There are even fewer studies that analyse the comparison of knowledge about ADHD among pre-service teachers (PSTs) and in-service teachers (ISTs) (Anderson, Watt, & Noble, 2012; Akram et al., 2009; Bekle, 2004; Jarque, & Tárraga, 2009; Jerome et al., 1999; Kos et al., 2004). Analysing this comparison is important, because it can help to know the level of initial preparation that the university offers about teaching of ADHD, and to compare this knowledge with knowledge gained from experience. For example, the first study in this line was conducted by Jerome et al. (1999). They found similar aspects than their study in 1994. Later, Bekle (2004) found similar results by Jerome et al., (1994). It was found that ISTs had a level of knowledge around 82.85%, while PSTs around 75.15%. A decade later they found false beliefs about the diet and its prognosis. In the same year another study (Kos et al., 2004) found that the knowledge of ISTs was higher (60.7%) than the PSTs (52.6%), and the perceived knowledge was 48% and 29%, respectively, that is, both groups have a greater real knowledge than perceived knowledge. Some years later in Spain a study (Jarque, & Tárraga, 2009) found that, both PSTs and ISTs had lower knowledge (less than 50%), although slightly higher of the ISTs, results are similar like Anderson et al. (2012). On the other hand, a study in Scotia (Akram et al., 2009) found that PSTs had more knowledge than ISTs, although in general both, PSTs and ISTs, have inadequate knowledge about ADHD, specifically about treatment.

It should be noted that, in the study of Jerome et al. (1994) the average general knowledge about ADHD was significantly higher (77%) than in the study by Sciutto et

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al. (2000) that was lower (47%) and Kos et al. (2004) (60%). The research of Jerome et al. (1994) made use of a different methodology, because they provided the respondents with only two response options (true or false). This meant that respondents had a 50% chance of guessing the correct answer, which could account for the higher overall score. Which Sciutto et al. (2000) and Kos et al. (2004) used three response options (true, false or don't know). The don't know answer the credibility of the true and false responses increased and made it possible to distinguish more clearly between wrong responses seen as misperceptions.

Indeed, teachers have accurate knowledge on general information, symptoms/diagnosis and treatment about ADHD. Unfortunately, only few studies have attempted to assess teachers' knowledge of ADHD suggest that teachers often lack of knowledge about ADHD. Moreover, they tend to have substantial misconceptions about origin, course, causes and treatment of ADHD (Barbaresi & Olsen, 1998; Jerome et al., 1994; Sciutto et al., 2000; Snider et al., 2003; Vereb & DiPerna, 2004; West et al., 2005). Furthermore, it was also found that teachers have received shallow or insufficient training related to ADHD (Bussing et al., 1998; Jerome et al., 1994; Sciutto et al., 2000; Kos et al., 2004). In addition, this poor knowledge about ADHD, could have serious consequences. Teachers share that they feel helpless and frustrated when unsuccessful in helping a child (Hong, 2008). Moreover, behaviour of a child with ADHD influences their ability to control or regulate their classrooms adequately, because often these children have inappropriate interaction with classmates and teachers. In fact, this lack of training can generate teacher stress (Greene et al., 2002). For example, in the study by Greene et al. it was found that children with ADHD generate teaching stress. Results indicated that children with ADHD consumed more of the teacher's total time than children without attention and behavioural difficulties. This teaching stress can trigger negative feelings toward students with ADHD and towards their own work (Stormont, 2001). In addition, the impact of having a child with ADHD can influence the teacher's interaction process with all the students in his / her classroom (Bryne, 1994; Lamute et al., 1992). In other words, this lack of knowledge of teachers about ADHD, as well as the behavior of students with ADHD, negatively affect the teaching-learning process (Anderson et al., 2017; Lawrence et al., 2018; Rogers & Tannock, 2018; Toye et al., 2019), increasing the stress of teachers (Choi, 2017; Greene et al., 1997; Raggi et al., 2003; Skaalvik, & Skaalvik, 2009).

Many studies have tried to link knowledge about ADHD and professional experience, specifically direct experience with students with ADHD. In fact, numerous studies show that teachers' knowledge about ADHD was positively correlated with years of professional experience and / or previous experience with children with ADHD (Anderson et al., 2012; Bekle, 2004; Jerome et al., 1994, 1999; Kos et al., 2004; Sciutto et al., 2000; Sciutto et al., 2016; Soroa et al., 2016; Weyandt et al., 2009).

Additionally, teachers with a strong sense of efficacy tend to exhibit higher levels of planning and organization; in fact, they are more engaged with their job. At the same time, they have more new ideas, and experiment with new methods searching better results by their students (Brouwers, & Tomic, 2000; Tschannen-Moran, &Woolfolk Hoy, 2001; Simbula et al., 2011). While, teachers with low self-efficacy experience had more difficulties in teaching than teachers with high self-efficacy, in consequence they have lower levels of job satisfaction, and higher levels of job about stress (Skaalvik, & Skaalvik, 2009). Moreover, high levels of student disruptive behaviour, lead to a low level of teachers' self-efficacy in classroom management, which lead to a higher level of teaching stress, which in turn leads to a higher level of student disruptive behaviour

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further reducing the level of teachers' self-efficacy (Brouwers, & Tomic, 2000). Different studies have also linked knowledge about ADHD with feelings of self-efficacy when teaching a child with ADHD, that is, teachers who feel more competent have more knowledge about ADHD (Alkahtani, 2013; Blotnicky- Gallant et al., 2015; Jarque et al., 2007; Soroa e tal., 2016; Sciutto et al., 2000). However, other studies have not found a significant correlation between total knowledge about ADHD and their feelings of self-efficacy when working with children with ADHD (Graeper et al., 2008; Jarque & Tárraga, 2009; Poznanski et al., 2018).

Therefore, based on these previous studies, the present research has two aims: to compare the Peruvian pre-service and in-service teachers' knowledge, misconceptions and lack of knowledge about ADHD and to analyze the differences in knowledge, misconceptions and lacks of information between ISTs with and without teaching experience about ADHD. Also, we explored the relationship between Knowledge of Attention Deficit Disorders Scale (KADDS) total score and various background characteristics, a series of correlations were used.

## Method

### *Participants*

The sample was composed by 264 Peruvian teachers in total. We divided this sample in two groups. First group consisted of 112 PSTs; second group consisted of 152 ISTs. All PSTs were female, while those 124 ISTs were female and 28 were male. In regards to age, the mean of PSTs was 23 years old and 4 months (SD=1.7), while ISTs were 35 years old and 5 months (SD=6.9). The mean teaching experience of the ISTs was ranged between 1 and 10 years. Fifty-nine PSTs were preparing to be teacher of kindergarten and 53 studying to be elementary school teachers.

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Table 1

*Demographic information of the sample of Peruvian pre-service and in-service teachers*

|  | PSTs | | ISTs | |
|---|---|---|---|---|
|  | N=112 | % | N=152 | % |
| **Gender** | | | | |
| Female | 112 | 100.0 | 124 | 81.6 |
| Male | 0 | 0.0 | 28 | 18.4 |
| **Age** | | | | |
| M | 23.4 | | 35.5 | |
| SD | 1.7 | | 6.9 | |
| **Teaching Experience (in years)** | | | | |
| 0 | 112 | 100.0 | 0 | 0.0 |
| 1-10 | 0 | 0.0 | 74 | 48.7 |
| 11-20 | 0 | 0.0 | 55 | 36.2 |
| 21 + | 0 | 0.0 | 23 | 15.1 |
| **Grades Taught** | | | | |
| Kindergarten | 59 | 52.7 | 46 | 30.3 |
| Elementary | 53 | 47.0 | 91 | 59.9 |
| Secondary | 0 | 0.0 | 15 | 9.9 |
| **Teachers´education** | | | | |
| Graduate | 112 | 100.0 | 152 | 100.0 |
| Post-grade | 0 | 0.0 | 56 | 36.8 |
| **Exposure to child with ADHD** | | | | |
| Yes | 20 | 17.9 | 64 | 42.1 |
| Few months | 19 | 17.0 | 0 | 0.0 |
| 1 year | 0 | 0.0 | 29 | 19.1 |
| 2 years | 0 | 0.0 | 16 | 10.5 |
| 3 + | 0 | 0.0 | 18 | 9.1 |
| **Sources of information** [a] | | | | |
| Subject-matter | 89 | 79.5 | 61 | 40.1 |
| Books | 83 | 74.1 | 86 | 56.6 |
| TV/radio | 48 | 42.9 | 133 | 87.5 |
| Special courses/Talks | 14 | 12.5 | 100 | 65.8 |
| Specialized Journals | 0 | 0.0 | 20 | 13.2 |
| None | 2 | 1.8 | 5 | 3.3 |
| **Self-efficacy** | | | | |
| Not prepared | 63 | 56.3 | 50 | 32.9 |
| Somewhat prepared | 49 | 43.8 | 83 | 54.6 |
| Quite prepared | 0 | 0.0 | 19 | 12.5 |

The ISTs consisted of 46 kindergarten teachers, 91 of primary and 15 of secondary teachers. In addition, 56 (36.8%) ISTs had postgraduate certificate. Regarding exposure to children with ADHD, sixty-four had more than one year of experience teaching a child with ADHD, whereas eighty-eight had no experience with ADHD. The mains sources of information by PSTs were subject-matter and books (79.5% and 74.1% respectively). While those ISTs were TV/radio (87.5%), special courses/talks (65.8%), and books (56.6%). The majority of PSTs felt prepared to teach children with ADHD. The other hand, the majority of ISTs with and without experience about ADHD felt somewhat prepared. Finally, the sample was selected in the same proportion of state and private schools and universities located in urban areas with no socioeconomic disadvantages in Peru, as they were excluded schools in categories D and E according to the socioeconomic classification of the districts of Lima (Apeim, 2016) (See Table 1).

### Instruments

*Knowledge of Attention Deficit Disorders Scale- KADDS* (Sciutto et al., 2000). Is a 36-item survey designed to measure teachers' knowledge and misconceptions of ADHD. There are three content areas: associated features (i.e., general information about

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the nature, causes, and prognosis of ADHD; 15 items), symptoms/diagnosis of ADHD (9 items), and treatment of ADHD (12 items). The KADDS uses a true, false, or do not know format. This format makes it possible to differentiate between what teachers do not know and their erroneous beliefs (i.e. misconceptions).

*The Index of Teaching Stress-ITS* (Greene et al., 1997). The questionnaire contained 90 items in two sections. In Part A (Teacher Response to Student Behaviors), teachers rated the degree to which they found 47 problematic behaviors to be stressful or frustrating as applied to each student being rated. In Part B (Teacher Perceptions of Interactions/Self-Efficacy), teachers were asked to rate 43 statements, which explored (a) their perceptions of the impact of the student upon the teacher and teaching process, (b) their sense of efficacy and satisfaction in working with the student, and (c) the nature of their interactions with other adults involved with the student. The total score of this instrument conceived as a summative measure of the distress induced in the teacher as a result of the presence of a particular student in the teacher's classroom.

*Self-efficacy.* To measure self-efficacy, participants also rated the extent to which they could effectively teach a child with ADHD on a 7-point likert scale.

*Demographic Information Questionnaire.* Respondents supplied information about their age, gender, years of teaching experience, and teaching roles. Participants also indicated whether they had ever taught a child diagnosed with ADHD.

### Procedure

The recruitment of participants for this study occurred by contacting the principals of the selected schools and universities. Once contacted, the objectives of the study were explained to the ISTs and PSTs. In a collective session, those ISTs and PSTs who decided to participate completed the surveys in the presence of the second author to clarify possible doubts related to the scale. Administration of the surveys to PSTs was carried out in the final year of the degree during the last practice teaching period, one to three months before graduation. ISTs completed the surveys in their schools.

### Data analysis

Due to the fact that quantitative variables didn´t had normal distribution using Kolmogorov-Smirnov test, the Mann-Whitney *U* test was used to perform our first and second objectives. The Bonferroni correction was applied to determine the acceptable significance levels. Moreover, the effect size was calculated through the Rosenthal's *r* (values below 0.2 represent a small effect size, 0.3 represents a medium effect, and 0.5 represents a large effect size). To explore the relationship between pre-service and in-service teachers' knowledge about ADHD and various background characteristics, a series of correlations were used.

## Results

### Teachers' Background

In the case of PSTs, subject-matter correlated with knowledge about ADHD (*r*= .272, *p*<.004). The ISTs ADHD´ knowledge correlated with post-grade education (*r*= .355, *p*<.001), years of experience (*r*= .496, *p*<.001) and experience with children with ADHD (*r*= .485, *p*<.001). Moreover, the ISTs with experience about ADHD, correlated with years of experience (*r*= .526, *p*<.001), and exposure to a child with ADHD (*r*= .471, *p*<.001), and self-efficacy (*r*= .475, *p*<.001).

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### Comparison of Pre-service (PSTs) and In-service (ISTs) Peruvian Teachers.

The results of the ANOVAs reveal that ISTs obtain significantly more correct answers than PSTs (MR=146.17 and MR=113.95, respectively) on the total scale, $U_{(263)}$ = 6434.00, $Z$= -3.395, $p < .001$, $r$=.21, with a medium effect size. Along the same lines, ISTs have more correct answers on the general information subscale, $U_{(263)}$ = 5857.50, $Z$= -4.356, $p < .001$, $r$=.26, with a medium effect size. And on treatment subscale, $U_{(263)}$ = 6907.50, $Z$= -2.640, $p < .008$, $r$=.16, with small effect size. However, no significant differences were found on the symptoms/diagnosis subscale, $U_{(263)}$ = 7958.00, $Z$= -.915, $p < .360$, $r$=.06 (see Table 2).

In individualized analysis of items, there were some differences. ISTs had more correct answers than PSTs in several items, for example in item 17 *"Symptoms of depression are found more frequently in ADHD children than in non-ADHD children"*. $U_{(263)}$ = 6704.00, $Z$= -3.857, $p < .001$, $r$=.23. As well in item 22 *"If an ADHD child is able to demonstrate sustained attention to video games or TV for over an hour, that child is also able to sustain attention for at least an hour of class or homework"*. $U_{(263)}$ = 5324.00, $Z$= -6.004, $p < .001$, $r$=.37. Nevertheless, more accurate knowledge by PSTs was found in item 34 *"Behavioral/Psychological interventions for children with ADHD focus primarily on the child's problems with inattention"*. $U_{(263)}$ = 6784.00, $Z$= -3.462, $p < .001$, $r$=.21 (See Table 3).

About misconceptions, no differences were found on total scale $U_{(263)}$ = 7576.00, $Z$= -1.535, $p < .125$, $r$=.09, neither on general information, $U_{(263)}$ = 8186.00, $Z$= -.537, $p < .591$, $r$=.03 or treatment $U_{(263)}$ = 8043.00, $Z$= -.799, $p < .425$, $r$=.05 sub-scales. However, ISTs obtain significantly more misconceptions than PSTs on the symptoms/diagnosis sub-scale, $U_{(263)}$ = 5246.50, $Z$= -5.845, $p < .000$, $r$=.36, with a large effect size (see Table 2).

Table 2

*Descriptive Statics of Peruvian PSTs and ISTs in each of the subscales*

| | PSTs (N=112) | | | | | | ISTs (N=152) | | | | | |
| | Accurate knowledge | | Misconceptions | | Lack of knowledge | | Accurate knowledge | | Misconceptions | | Lack of knowledge | |
| | MR | SR | MR | SR | MR | SR | MR | SR | MR | SR | MR | SR |
| General Information | 108.80 | 12185.50 | 129.59 | 14514.00 | 149.11 | 16700.50 | 149.96 | 22794.50 | 134.64 | 20466.00 | 120.26 | 18279.50 |
| Symptoms/diagnosis | 127.55 | 14286.00 | 103.34 | 11574.50 | 147.86 | 16560.50 | 136.14 | 20694.00 | 153.98 | 23405.50 | 121.18 | 18419.50 |
| Treatment | 118.17 | 13235.50 | 128.31 | 14371.00 | 146.64 | 16424.00 | 143.06 | 21744.50 | 135.59 | 20609.00 | 122.08 | 18556.00 |
| Total Scale | 113.95 | 12762.00 | 124.14 | 13904.00 | 150.99 | 16910.50 | 146.17 | 22218.00 | 138.66 | 21076.00 | 118.88 | 18069.50 |

*Note*: M= Mean; MR= Mean range; SR= Sum of ranks

In individualized analysis of items were found differences. More misconceptions by ISTs were discovered in some items, for example in item 16 *"Current wisdom about ADHD suggests two clusters of symptoms: One of inattention and another consisting of hyperactivity/ impulsivity"*. $U_{(263)} = 6368.00$, $Z= -5.463$, $p < .000$, $r=.33$. However, in another items PSTs had more misconceptions, for example in item 32 *"The majority of children with ADHD evidence some degree of poor school performance in the elementary school years"*. $U_{(263)} = 7008.00$, $Z= -3.420$, $p < .001$, $r=.21$. And in item 36 *"Treatments for ADHD which focus primarily on punishment have been found to be the most effective in reducing the symptoms of ADHD"*. $U_{(263)} = 7676.00$, $Z= -3.939$, $p < .000$, $r=.24$ (See Table 3).

Table 3

*The most common correct answers, misconceptions, and lacks of knowledge about ADHD of Peruvian PSTs and ISTs*

| Nº | Item | Sc | PST % | IST % | A |
|----|------|----|----|----|---|
| *Correct answers* | | | | | |
| 3 | ADHD children are frequently distracted by extraneous stimuli. | S | 92.0 | 85.5 | T |
| 21 | In order to be diagnosed as ADHD, a child must exhibit relevant symptoms in two or more settings (e.g., home, school). | S | 88.4 | 82.9 | T |
| 26 | ADHD children often have difficulties organizing tasks and activities. | S | 79.5 | 80.3 | T |
| 9 | ADHD children often fidget or squirm in their seats. | S | 74.1 | 80.3 | T |
| 11 | It is common for ADHD children to have an inflated sense of self-esteem or grandiosity. | S | 63.4 | 64.5 | F |
| *Misconceptions* | | | | | |
| 4 | ADHD children are typically more compliant with their fathers than with their mothers. | G | 67.0 | 69.7 | T |
| 28 | There are specific physical features which can be identified by medical doctors (e.g. pediatrician) in making a definitive diagnosis of ADHD. | G | 50.9 | 70.4 | F |
| 31 | Children with ADHD are more distinguishable from normal children in a classroom setting than in a free play situation. | G | 55.4 | 55.3 | T |
| 24 | A diagnosis of ADHD by itself makes a child eligible for placement in special education. | G | 44.6 | 57.9 | F |
| 23 | Reducing dietary intake of sugar or food additives is generally effective in reducing the symptoms of ADHD. | T | 54.5 | 41.4 | F |
| *Lack of Knowledge* | | | | | |
| 1 | Most estimates suggest that ADHD occurs in approximately 15% of school age children. | G | 67.9 | 65.1 | F |
| 35 | Electroconvulsive Therapy (i.e. shock treatment) has been found to be an effective treatment for severe cases of ADHD. | T | 78.6 | 53.3 | F |
| 6 | ADHD is more common in the 1st degree biological relatives (i.e. mother, father) of children with ADHD than in the general population. | G | 55.4 | 44.1 | T |
| 15 | Side effects of stimulant drugs used for treatment of ADHD may include mild insomnia and appetite reduction. | T | 67.0 | 30.3 | T |
| 29 | In school age children, the prevalence of ADHD in males and females is equivalent. | G | 61.6 | 35.5 | F |

*Note:* Sc= Sub-scale: G= General Information, S= Symptoms-Diagnosis, T= Treatment; A= Answer: T=true, F=False

In relation to lack of knowledge, the PSTs obtain significantly more lacks of knowledge on total scale than ISTs (MR=150.99 and MR=118.88, respectively), $U_{(263)} = 6441.50$, $Z= -3.382$, $p < .001$, $r=.21$ with a medium effect size. No differences were found

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on the general information sub-scale, $U_{(263)}$ = 6651.50, $Z$= -3.047, $p < .002$, $r$=.19, or symptoms/diagnosis sub-scale, $U_{(263)}$ = 6791.50, $Z$= -2.882, $p < .004$, $r$=.18, neither on treatment sub-scale, $U_{(263)}$ = 6928.00, $Z$= -2.608, $p < .009$, $r$=.16 (see Table 2).

Differences were found in the individualized analysis of some items. The majority of these items evidenced more lacks of knowledge by PTSs than ISTs. For example, in item 7 *"One symptom of children with ADHD is that they have been physically cruel to other people"*. $U_{(263)}$ = 6552.00, $Z$= -4.307, $p < .000$, $r$=.27. Or in item 15 "*Side effects of stimulant drugs used for treatment of ADHD may include mild insomnia and appetite reduction*". $U_{(263)}$ = 5388.00, $Z$= -5.904, $p < .000$, $r$=.36. As well in item 20 *"In severe cases of ADHD, medication is often used before other behavior modification techniques are attempted"*. $U_{(263)}$ = 6448.00, $Z$= -4.214, $p < .000$, $r$=.26. However, in item 25 "*Stimulant drugs are the most common type of drug used to treat children with ADHD*". $U_{(263)}$ = 6592.00, $Z$= -3.694, $p < .000$, $r$=.22, more lacks of knowledge were found in ISTs than PSTs (See Table 3).

### Comparison of In-service (ISTs) Peruvian Teachers with and without Teaching Experience with ADHD.

To perform our second objective, we compare the KADDS scores of ISTs with experience teaching with a child with ADHD (n=64) and ISTs without teaching experience with ADHD (n=88). To compare the relationship between ISTs stress and teaching experience with child with ADHD, was used the Mann-Whitney $U$ test. Peruvian ISTs with experience about ADHD, had higher levels of teaching stress ($U_{(263)}$ = 255.50, $Z$= -4.321, $p < .001$, $r$=.27). Also, they felt more self-efficacy teaching a child with ADHD ($U_{(263)}$ = 1169.50, $Z$= -6.349, $p < .001$, $r$=.39).

In relation to KADDS scores, results show that, the ISTs with experience about ADHD had more accurate knowledge on the total scale ($U_{(263)}$ = 1169.00, $Z$= -6.002, $p < .001$, $r$=.37) than ISTs without experience. As well as, on general information sub-scale ($U_{(263)}$ = 1630.50, $Z$= -4.460, $p < .001$, $r$=.27), on symptoms/diagnosis sub-scale ($U_{(263)}$ = 1142.00, $Z$= -6.323, $p < .000$, $r$=.39), and on treatment ($U_{(263)}$ = 1501.00, $Z$= -4.768, $p < .001$, $r$=.29).

The ISTs without experience about ADHD had more misconceptions on symptoms/diagnosis sub-scale ($U_{(263)}$ = 1906.50, $Z$= -4.627, $p < .001$, $r$=.28) than ISTs with experience.

Finally, the ISTs without experience about ADHD had more lack of information on the total scale ($U_{(263)}$ = 1273.50, $Z$= -5.697, $p < .001$, $r$=.35) than ISTs with experience. Also on the general information sub-scale ($U_{(263)}$ = 1431.50, $Z$= -5.203, $p < .001$, $r$=.32), on symptoms/diagnosis sub-scale ($U_{(263)}$ = 1219.00, $Z$= -6.145, $p < .001$, $r$=.38), and on treatment sub-scale ($U_{(263)}$ = 1778.00, $Z$= -3.827, $p < .001$, $r$=.24).

### Discussion and Conclusions

The present study compares the knowledge, misconceptions and lack of knowledge of Peruvian PSTs and ISTs about ADHD. At the same time, the differences between ISTs with and without experience about ADHD are compared. Furthermore, the study also explores the relationship between KADDS in total score and various background characteristics.

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Our findings indicated that ISTs had more correct answers than PSTs in total scale, concerning on general information and treatment subscales. This pattern of results is in accordance with the results of international research about ADHD knowledge (Anderson et al., 2012; Bekle, 2004; Jarque, & Tárraga, 2009; Jerome et al., 1999; Kos et al., 2004; Sciutto et al, 2016; Soroa et al., 2016; Weyandt et al., 2009).

However, ISTs obtained significantly more misconceptions than PSTs on symptoms/diagnosis sub-scale. In contrast, PSTs obtained more lacks of knowledge on total scale. In general, the PSTs' and the ISTs' knowledge of ADHD were insufficient, like several other studies demonstrated as well (Anderson et al., 2012; Akram et al., 2009; Jarque, & Tárraga, 2009; Kos et al., 2004). The subject matter of PSTs correlated with their knowledge of ADHD as the study by Kos et al. (2004). Similar to other studies (Jarque, et al., 2007; Jerome et al., 1994; Kos et al., 2004; Sciutto et al., 2000), our findings show that the knowledge of ISTs correlated with post-grade education, years of experience and the exposure to children with ADHD. Moreover, self-efficacy correlated with years of experience and exposure to a child with ADHD. Similar relationships were found by Jarque and Tárraga (2009) and Sciutto et al., (2000). In addition, this study discovered that, ISTs feel more stressed in teaching children with ADHD which is congruent to other studies (Bussing et al., 2002; Greene et al, 1997, 2002; Kyriacou, & Chien, 2009).

Both groups have similar scores about correct answers, for example concerning to the idea that *children with ADHD are frequently distracted by extraneous stimuli*. Both samples have an accurate knowledge of around 90%. About 85% knew that, *a child must exhibit relevant symptoms in two or more settings*. Also, around 80% are aware of the fact that ADHD *children often have difficulties organizing tasks and activities*. Approximately 75% of two groups are conscious of hyperactivity so that consequently *ADHD children often fidget or squirm in their seats*. Around 60% of PSTs and ISTs knew that *ADHD children have an inflated sense of self-esteem or grandiosity* (APA, 2014). However, differences were discovered in individualized items. In some items, the ISTs had more correct answers than PSTs. For example, the ISTs recognized that s*ymptoms of depression are found more frequently in ADHD children than in non-ADHD children.*

In relation to misconceptions, our study showed that Peruvian PSTs´ and ISTs´ most common misconceptions are those which were also identified in other studies, like mainly those from USA (Bekle, 2004; Canu, & Mancil, 2012; Graczyk et al., 2005; Jerome, et al., 1994; Piccolo-Torsky, & Waishwell, 1998; Hepperlen, et al., 2002; Snider, et al., 2003) and other countries (Alkahtani, 2013; Akram et al., 2009; Bekle, 2004; Brook et al., 2000; Ghanizadeh et al., 2006 ; Havey, 2007; Holst, 2008; Hong, 2008; Jarque, et al., 2007; Kos et al., 2004; Nur & Kavakci, 2010; Syed & Hussein, 2010; West et al., 2005). One of the main misconceptions is the belief that *sugar elimination diets are effective for reducing ADHD symptoms*, which almost 50% of PSTs and ISTs supposed wrongly. Throughout the years of research, this misconception continues to be among the most common about ADHD treatment. No scientific argument can be found for the influence of the diet as the cause of ADHD, or a diet change could influence the severity of symptoms (DuPaul, & Stoner, 2003; Ghanizadeh et al., 2006; Jerome et al., 1994; Perold et al., 2010; Sciutto et al., 2000; West et al., 2005). Another common misconception is related to the idea that *ADHD children are typically more compliant with their fathers than with their mothers*. Indeed, they are rated routinely as manifesting lower levels of symptoms by their fathers than their mothers (DuPaul, Barkley, & Connor, 1998; Tallmadge, & Barkley, 1983). There are some reasons for this misconception. One motive is for example the misbelief that employed mothers may feel more pressured, and

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therefore tend to be more nervous and put more restrictions on their children, which make the child's symptoms greater (Webster-Stratton, & Hammond, 1997). Another possible reason is that, mothers often talk more with their child, repeat the instructions several times, or even use affection as a mean for the child to fulfill its obligations; while fathers do the opposite, they also impose more serious and direct discipline (Barkley, 2014). However, there were differences between PST and ISTs in some items. For example, ISTs showed more misconceptions than PSTs. For example, ISTs showed more misconceptions than PSTs concerning their latest knowledge about ADHD which refers to *two clusters of symptoms: One of inattention and another consisting of hyperactivity/impulsivity* (APA, 2014, DuPaul et al., 1997). The PSTs had more misconceptions than ISTs about the *poor school performance in the elementary school years of children with ADHD* (DuPaul, & Stoner, 1994). The PSTs mistakenly believe that *Treatments for ADHD which focus primarily on punishment have been found to be the most effective in reducing the symptoms of ADHD* (DuPaul & Stoner, 1994). These findings could be explained because the ISTs received university training more years ago than the PSTs and, in many cases, there was no training on ADHD in the curricula.

Several knowledge gaps of PSTs, as well as, of ISTs were found in this study. For example, more than 65% of PSTs and ISTs don´t know anything about the *high prevalence of ADHD*. Given the extensive research on this topic that is a rather surprising fact (Criado-Álvarez & Romo-Barrientos, 2003; Polanczyk et al., 2007; Polanczyk et al., 2015; Saavedra-Castillo, 2001). Most of PSTs and almost 50% of ISTs don't know that *electroconvulsive therapy is not even effective in severe cases*. Another lack of knowledge is about *the family relationship in the transmission of the disorder*. A fact that surprises because of the great scientific research that supports this aspect (Bralten et al., 2013; Cortese, 2012; Song et al., 2009; Stergiakouli et al., 2015; Thapar et al., 2007). The majority of PSTs doesn´t know the *side effect of stimulant drugs used for treatment of ADHD*. Finally, there were numerous differences in several items between PSTs and ISTs groups. In general, PSTs had more knowledge gaps than ISTs. For example, PSTs weren´t conscious about the idea that "*One symptom of ADHD children is that they have been physically cruel to other people*" (APA, 2000). Neither they knew about the fact that "*side effects of stimulant drugs used for treatment of ADHD may include mild insomnia and appetite reduction*" (DuPaul et al., 1998), nor they knew anything about the use of medication in severe cases, before the use of other treatment technique (Jensen et al., 2001). Nevertheless, more ITSs than PSTs were unaware about the aspect that stimulant drugs are the most common use to treat children with ADHD (DuPaul, et al, 1998). In conclusion, the knowledge of PSTs as well as ISTs was insufficient. However, both groups clearly showed most knowledge in the sub-scale of symptoms/diagnosis. Nevertheless, they had many misconceptions and knowledge gaps around central axes of ADHD.

Our data also show a positive correlation between knowledge about ADHD and feelings of self-efficacy, both in PSTs and ISTs, as in studies previously carried out in different countries (Alkahtani, 2013; Blotnicky-Gallant et al., 2015; Jarque et al., 2007; Sciutto et al., 2000; Sciutto et al., 2016; Soroa et al., 2016; Weyandt et al., 2009), which is not strange, since these socio-economic demographics variables can constitute different sources of information about ADHD (Sciutto et al., 2016). However, other studies have not found a relationship between knowledge about ADHD and professional experience (Jarque & Tárraga, 2009; Poznanski, Hart, & Cramer, 2018).

Our work shows that it is the ISTs with direct experience with a child with ADHD, who have the greatest feelings of self-efficacy, although they are also the ones who

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experience higher levels of teacher stress, as other studies have shown (Choi, 2017; Greene et al., 1997; Skaalvik & Skaalvik, 2009), possibly because direct experience with children with ADHD over several years makes them more realistic about the difficulties they may face in their classes. Previous experience in the education of children with ADHD makes them feel more competent when teaching in the classroom, but at the same time also more stressed because they are aware of the daily difficulties they have to face.

## Limitations and Future Research

Our results further underline the urgent need for training of both groups, PSTs and ISTs, to improve the knowledge of ADHD. Our study also reveals the influence of some socio-demographic variables in this process. Nevertheless, several limitations should be mentioned that can affect the reach of the results. One of the main limitations is the selection of the teachers. We used a convenience sampling from the city of Lima (Peru). For this reason, the results cannot be generalized to the whole country. In future studies, it would be interesting to examine other areas and cities in Peru to generalize and confirm the results. Another limitation is the fact that, the teachers' academic records were not considered in the study. It is possible that teachers with higher academic marks would also have more knowledge about ADHD. Another possible limitation is related to the applied scale. The closed-response scale only provides a superficial view of the teachers' knowledge and beliefs about ADHD. Additionally, the different consequences of misconceptions should also be investigated and compared to the lack of information.

## Implications for Practice

Despite the previously mentioned restrictions our findings have important educational repercussions. This study provides important information by differentiating between what teachers' don´t know from what they erroneously think they know. In addition, this study coincides with many others about of misconceptions. Which show that misconceptions are resistant to change over time. An example for such a long-standing misconception is the belief that less sugar and additives in the diet can reduce ADHD. Moreover, lack of knowledge can make some teachers persist in their misconceptions, and they may lead to further expansion of incorrect information. For this reason, more empirical studies that refute erroneous knowledge are necessary.

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# SOCIAL CAPITAL AND SCHOOL PERFORMANCE IN SECONDARY STUDENTS. CASE STUDY IN THE CITY OF TORREÓN, MEXICO

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**Abstract**. This manuscript starts from a structural / functionalist theoretical vision. Particularly it focuses on the analysis of the concept of social capital. Its objective is to show how the resources of social capital that the families of secondary school students have, in the city of Torreón, Mexico, affect their school performance. It is a quantitative study: descriptive / correlational. Pearson and Spearman correlation tests were performed; and linear regression models were applied to identify predictive variables to explain the dependent variable: school performance (overall grade point average). The study was conducted in technical secondary school # 1 in the city of Torreón, Coahuila, Mexico. The questionnaires were applied between the months of May and June of 2017. The sample was 130 students (n = 130) and was applied only and exclusively to third-year students. The findings allow correlations between the variables of the student, the student and the family; The family and society. It was identified that there are significant correlations between school performance and the number of times the student has changed schools; if the student receives help from their teachers to do homework; the parents' perception of the student's school performance; school problems at the level of student suspension and trust in teachers, among others.

**Keywords:** Social Capital, family capital, school performance, high school students.

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# CAPITAL SOCIAL Y RENDIMIENTO ESCOLAR EN ESTUDIANTES DE SECUNDARIA. ESTUDIO DE CASO EN LA CIUDAD DE TORREÓN, MÉXICO

**Resumen**. El presente manuscrito parte de una visión teórica estructural/ funcionalista. Particularmente se enfoca en el análisis del concepto de capital social. Tiene como objetivo dar a conocer cómo los recursos de capital social que poseen las familias de estudiantes de tercero de secundaria, en la ciudad de Torreón, México, afectan el rendimiento escolar de éstos. Es un estudio de tipo cuantitativo: descriptivo/ correlacional. Se realizaron pruebas de correlación de Pearson y Spearman; y se aplicaron modelos de regresión lineal para identificar variables predictoras para explicar la variable dependiente: rendimiento escolar (promedio general de calificaciones). El estudio se realizó en la escuela secundaria técnica #1 de la ciudad de Torreón, Coahuila, México. La aplicación de cuestionarios se realizó entre los meses de mayo y junio del 2017. La muestra fue de 130 estudiantes (n=130) y se aplicó única y exclusivamente a estudiantes de tercer año. Los hallazgos permiten encontrar correlaciones entre las variables del alumno, el alumno y la familia; la familia y la sociedad. Se identificó que existen correlaciones significativas entre el rendimiento escolar y el número de veces que el alumno ha cambiado de escuela; si el alumno recibe ayuda de sus maestros para hacer tareas; la percepción que tengan los padres sobre el rendimiento escolar del alumno; problemas escolares a nivel de suspensión escolar del alumno y la confianza hacia los maestros, entre otras.

**Palabras clave:** Capital social, capital familiar, rendimiento escolar, estudiantes de educación secundaria

## Introduction

The discussion of the topic focuses on the analysis of two large variables that are mutually correlated to explain school phenomena: social capital and academic performance. With regard to social capital, Coleman (1988) had already advanced some explanations that considered that the internal social capital (family capital) available in a family derives from a solid internal structure and has a significant influence on the school achievement of students. From this perspective, students who are part of a family with high levels of social capital are less likely to fail within the educational system and are more likely to achieve their goals than those who live under the roof of a family with poor social capital.

Approaches to the concept of school performance have a conceptual foundation with the paradigm of educational quality. Current trends in education systems (particularly in OECD member countries) to measure student achievement through international standards tests (standardized tests) are an indicator in the formation of criteria on reflected school performance in reading skills (Spanish language in the case of Mexico) and skills for the functional use of mathematics[1]. In this research, it was decided to consider as the dependent variable the most immediate analytical unit available to a

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[1] As of 2015, the Secretariat of Public Education of Mexico (SEP) and the National Institute for the Evaluation of Education (INEE), established the National Plan for the Evaluation of Learning (PLANEA). The plan replaced the National Assessments of Academic Achievement in Schools (ENLACE) and EXCALE. PLANEA works under the same evaluation principles used by the Organization for Economic Cooperation and Development (OECD) in the application of international standards tests (standardized tests, PISA) and assesses the achievement of learning in the areas of reading comprehension and math.

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classroom teacher to determine school performance; namely, the school grade (grade in the minutes).

Multiple investigations relate social capital to other phenomena and find various explanations to establish the causes and effects of these. Consequently, studies have been developed that explain how social capital affects the chances of dropping out of school, family and human capital, community development, the construction of democracies, among others (Coleman, 1988; Teachman; Kathleen & Karen; 1996 ; Teachman, Kathleen & Karen, 1997; Kliksberg, 1999; Putnam, 2000; World Bank, 2004).

This work aims to show how the internal social capital resources (family capital) possessed by the families of third-year high school students, in the city of Torreón, Mexico, affect their school performance. It is a quantitative, cross-sectional / correlational study. Pearson and Spearman correlation tests were performed and linear regression models were applied to identify predictor variables and to be able to explain the dependent variable: school performance (general grade point average). The study was conducted at Technical High School # 1 in the city of Torreón, Coahuila, Mexico. Questionnaires were applied between May and June 2017. The sample was 130 students (n = 130) and it was applied exclusively to third-year students.

The first findings allow finding correlations between the variables of the student body, the family, the society. It was identified that there are significant correlations between school performance and the number of times students have changed schools; if they get help from their teachers to do homework; the perception that parents have about the school performance of students; school problems at the suspension level and trust in teachers. Results that coincide with other research carried out with students and their school achievements (Coleman, 1988; Wilson, 1994; Jonsson & Gahler, 1997; Hall, 1999; Kliksberg, 1999, 2000; Putnam, 2000; Aldridge, Halpern & Fitzpatrick, 2002).

## Social capital: some fundamentals

### *Conceptualization of social capital*

Two approaches can be used to locate social capital in some analytical dimension: the individual and the structural. In the first one, it is possible to identify definitions centered on skills, knowledge, values, attitudes and norms of the subject; in the second, it appeals to the possession of resources and the ways of managing them in favor of a group, class, or community through norms, networks and relationships. From both perspectives, the existence of capital[2] or various types of capital is assumed (Table 1).

### *How many types of capital are there?*

Coleman distinguished the existence of three types of capital: physical capital, human capital, and social capital (Coleman, 1988: 100-101). The first, created to carry out changes in material things that facilitate production; the second created to generate changes in individuals, acquiring skills and abilities that make them capable of acting in different directions; and the third brings changes in relationships within people to facilitate action. Aldridge et al, (2002, p, 13) point out that capital can take a total of six forms:

> physical capital, includes plants, machinery and other resources; natural capital, clean air, water and other natural resources; human capital, including

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[2] The root of the capital concept is in economic theory. According to the dictionary of social sciences, capital is defined as: "an accumulation of merchandise or of abundance used for the production of other goods and services, rather than for immediate or personal use. Capital is central to a capitalist economic system "(Drislane and Parkinson 2010), [own translation].

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knowledge, skills and competences; social capital [the author does not provide definition]; cultural capital, includes familiarity with the culture of society and the ability to understand and use language, and; financial capital, used to consolidate, acquire or invest in other forms of capital (Aldridge et al, 2002, p, 13).

According to the World Bank (cited by Kliksberg, 1999) there are four types of capital: natural capital; constituted by the natural resources that each country possesses; the capital built; that it is generated by the individual and that includes financial capital goods, infrastructure and others; human capital; determined by the degrees of education, health and nutrition of the population; and social capital. Faced with the multiple theoretical and institutional political proposals that suggest the existence of various types of capital and their usefulness, the unavoidable question is about what should actually be understood by social capital.

*What is the social capital?*

Returning to Coleman, the forerunner of the discussion on this concept in the heart of North American sociology, in Social capital in the creation of human capital, Coleman establishes the following:

> If we start with a theory of rational action, in which each actor has control over certain resources and interests in certain resources and events, then social capital constitutes a particular type of resource available to an actor. Share capital is defined by its function [emphasis added]. It is not a single entity, but a variety of different entities, with two elements in common: all of them are formed from some aspect of social structures, and they facilitate certain actions of the actors -whether people or corporate actors- within the structure. (Coleman 1988, p, 98), [Own translation].

One of Coleman's purposes in that document was to present social capital as a resource of the person. The subject and his action are his main units of analysis. The subject's relationships determine how this resource is used and exploited. In this sense, he points out that "unlike other forms of capital, social capital is inherent in the structure of the relationships between the actor and between the actors" (Coleman 1988, p, 98). The value of the concept lies primarily in the fact that it identifies certain aspects of the social structure by their functions. Being the most significant function, providing the resources that individuals can use to achieve their interests. Social capital is a resource of the individual (Table 1).

The family is a structure to which the individual belongs and where social capital is present. Social capital takes shape in family relationships. Coleman points out that social capital represents a filter through which the parents' financial capital (income) and human capital (schooling) is transmitted to their children and is used by them to facilitate their school success or failure (reflected in desertion) and the lack or scarcity of social capital in the family have visible effects on the individual and highlights this phenomenon.

In this sense; social capital could be understood as: the socio-structural resources that constitute a capital asset for the individual and facilitate certain common actions of those who make up that structure.

On the other hand, the publication of the text Bowling Alone: the collapse and revival of American community (Putnam, 2000) unleashed a tendency among sociologists and social scientists to explore new interpretations about the cause and effect relationships of social phenomena, based on conceptual social capital. One of the

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aspirations of the reinventor of the social capital concept was to demonstrate that North American society is in decline, that new generations of individuals are poorly articulated with life in solidarity and that far from committing more to their fellow citizens, they are isolating themselves and consequently weakening. the social fabric. Indeed, and in the face of the social crisis derived from progressive disarticulation, social capital seems to constitute itself, from Putnam's perspective, as the substantive component for modern society to return to the basic principles of trust, reciprocity and solidarity.

In this study, Putnam considers that the idea that underlies the theory of social capital, the heart of it says, "is the value of social networks" (Putnam, 2000, p, 18). He points out that while physical capital refers to physical objects and human capital refers to properties of individuals, social capital refers to connections between individuals / social networks and the norms of reciprocity and trust that emerge from them. In this sense, he considers that the connections between individuals are important because of the norms (or rules) of conduct that sustain them. Networks, by definition, that involve mutual obligations and are far from being simple contacts (Table 1).

For Bourdieu (1985), social capital is the set of real or potential resources available to the members of a durable network of more or less institutionalized relationships. Social capital consists not only of networks and connections, but also of day-to-day contacts and associations with groups that, through the accumulation of exchanges, obligations and shared identities, provide both tangible and / or potential support and access to resources. important and valued. The total social capital will then depend on the extension of the network of links that can be mobilized and the total economic, cultural or symbolic capital that each of the subjects possesses.

In addition to the interest of social scientists in exploring the concept, international political organizations found it useful to appropriate it. The World Bank (2005) considers that social capital refers to the institutions, relationships, and norms that shape the quality and quantity of a society's social interactions. Consider that social capital: it is not just the sum of the institutions that underpin a society, but the "glue" that unites them. In short, whatever the dimension of analysis (individual or structural) or the perspective adopted (academic or political), the existence of various types of capital is assumed.

Table 1
*Conceptualization of capital*

| Type of capital | Definition | Property |
|---|---|---|
| Physical | Physical objects // | Facilitates production. |
| Human | Education, health and nutrition // | It facilitates changes in the individual through skills and abilities. |
| Social | Provides resources to the individual. Changes in relationships // | It facilitates the action of the individual. Connections between individuals. Trust and standards. Networks and relationships that help to work effectively. |
| Cultural | Reproduction of dominant symbols and meanings // | Facilitates cultural reproduction. |
| Economic | Accumulation of merchandise or financial capital used for production // | Facilitates operating relationships. Infrastructure |
| Natural | Clean air, water, natural resources // | Facilitates sustainability. |

*Note*: Source: own elaboration from Bourdieu (1985); Coleman (1988); Kliksberg (1999); Putnam (2000); Aldridge et al (2002); MacGillivray (2002); Drislane and Parkinson (2010).

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***Benefits derived from the existence of Social Capital***

The concept of social capital has been used to explain various phenomena and / or justify their existence. Diverse investigations expose evidences on the existence of some relation between this concept and other social phenomena such as the desertion and the scholastic performance; decrease in mortality rates, greater social participation, greater social trust, altruism, local and regional development; culture and many others (Coleman, 1988; Teachman et al, 1996; 1997; Kliksberg, 1999; Putnam, 2000; World Bank, 2004[3]).

*Schooling / Social Trust / Community Development*

Some studies indicate that the schooling of individuals is associated with higher levels of social capital (Hall, 1999; Putnam, 2000), that both schools and the family play an important role in creating social norms and ties. With each year of schooling, individuals are more engaged in social life, their networks expand and become more diverse; at the same time that they show more confidence towards other individuals. According to these results, high levels of schooling are associated with a strong growth in social trust and community commitment; that is, with greater social capital.

There are other studies that see the "need" for a strong social capital to exist within communities for there to be true economic development (Kliksberg, 1999). Social capital, manifested in norms and networks of civic engagement, appears to be a prerequisite for economic development, as well as for effective government (Putnam, 1993). Social cohesion becomes an essential component for societies to prosper economically and for development to be sustainable (World Bank, 2005).

***Family relationships / Social networks / School success***

Family relationships are linked to school achievement. Kliksberg (2000) points out that 60% of the differences in school performance are linked to the educational climate of the home, its socioeconomic level, housing infrastructure and type of family. She also points out that basic aspects of the family structure have a strong influence on educational results; likewise, the degree of organization of the family nucleus, the cultural capital of the parents, the level of dedication to follow-up on the children's studies and the permanent support or encouragement. According to Kliksberg, as the educational climate of the home improves, the percentage of laggards decreases.

Continuing with the analysis of the family, divorce also seems to be associated with lower levels of generalized trust, which translates into lower levels of social capital (Hall, 1999). According to Hall, social capital tends to be lower for children in single-parent families. Single parents tend to insert into smaller social networks, partly as a result of residential mobility and the family that has been affected.

In the analysis of this same variable, Jonsson and Gahler (1997) present results that show that children who come from divorced parents show lower educational performance. It is considered that there is a loss of social and family resources in relation to those that the child has from a stable family. In this sense, another study (Wilson, 1994) indicates that children who live with only one parent are twice as likely to be expelled or suspended from school, to suffer emotional or behavioral problems and to have difficulties with their peers.

Therefore, it is observed that there is a strong association between the levels of social capital (indicated by networks, community participation, social trust, strength of

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[3] Alejandro Portes (1998, p. 2), makes a severe criticism of the concept pointing out that it has been adopted and considered as the "cure all" of diseases that affect society.

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family ties, others) and the school achievements of infants. Studies indicate that the causal direction between variables starts from social capital and affects educational attainment and vice versa, from educational attainment (literacy / schooling) to social capital.

## Method

### The study variables

*Family social capital*[4]. Family capital has been defined as those physical, economic, social and cultural resources available to the subject that belongs to a family with a specific structure in a particular context, which exists and takes shape in family relationships.

*School performance*[5]. School performance was determined by the grade point average of third year high school students. That is, having added the qualifications of each two-month period and having obtained the average.

### Study design

It is a quantitative study: cross-sectional / correlational. Pearson and Spearman correlation tests were performed; and linear regression models were applied to identify predictor variables to explain the dependent variable: school performance.

It is Transversal since it was carried out in a single moment and in a single time (Hernández Sampieri, R., Fernández Collado, C., & Baptista Lucio, P., 1991). A single measurement of the variables was made to recognize their status and level at that time. It is correlational since it was necessary to establish correlations between the independent variables and seek explanations for the phenomenon of school performance. Derived from the correlations, a regression model was run and said model reinforced the existence of the correlations between independent variables and the dependent variable. The existence of collinearity between the independent variables was established.

The usefulness and purpose of this study is to know how school performance can behave, knowing the behavior of the social capital of families that have their sons and daughters with current enrollment in the analyzed secondary school.

### The universe and the show

The study was conducted at Technical High School # 1 in the city of Torreón, Coahuila, Mexico. The questionnaires were applied between the months of May and June 2017. The questionnaires were applied solely and exclusively to third-year students. The total number of students enrolled in that grade was 228 (N = 228). The sample used was probabilistic[6]. The sample consisted of 130 students (n = 130), which was calculated as follows[7]:

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[4] With this definition, it is considered that the subject has different resources and forms of association to put into practice their abilities and possessions; they are reflected in the functioning of family and school life. It is assumed that the individual is aware of his action. The consequences of the action and the set of actions carried out by the subject within social spaces are expected to have positive or negative effects (table 1).

[5] *Academic performance* refers to the student's level of knowledge measured by an evaluation test (Mesanza, 1983, p. 1234; Canda, 2002, p. 287). In this work, performance in Spanish was measured by grade point average. Grade concentrated in the teacher's official list and downloaded onto the student's report card (Leal, 1994; Contreras, 1997).

[6] According to Hernández, et al. (1991, p. 213), this type of study is where an association is made between variables, the results of which will serve as information to make political decisions that will affect a population. They are achieved through survey research and definitely through a probabilistic sample, designed in such a way that the data can be generalized to the population with an accurate estimate of the error that could be committed when making such generalizations.

[7] The reference formula for the calculation of the sample derives from Aguilar-Barojas (2005, p. 336).

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$$n = \frac{Z^2\, pqN}{Ne^2 + Z^2\, pq}$$

| | | |
|---|---|---|
| Z = confidence level = | | 95 % |
| N = population size = | | 228 |
| e = precision or error = | | 5 % |
| p = positive variability = | | 0.5 |
| q = negative variability = | | 0.5 |
| n = sample size = | | 122.9 |

### Procedures

The grades of the students were obtained in the bimesters taken up to the date in which the questionnaires were applied. The values that were captured are those that the teaching staff recorded in their bimonthly evaluation minutes[8]. The grades for each two-month period were added and the average was obtained. The transcripts are constituted by the qualification of the subjects of Spanish, mathematics, natural sciences, geography, history, civics and ethics, physical education and artistic education. The grades are determined by decimal numbers, that is, they fluctuate between a value of 5 to a value of 10. The grade of 5 being failing, 6 the minimum passing grade and 10 the maximum grade for school performance.

### Results

Inferential statistics results are presented. Spearman and Pearson correlation tests were established. Which variables could enter the model were identified. A regression model was applied. In each block, all and only the correlated variables were entered (under the method: enter). The regression model applied to the dependent variable: general grade average was analyzed.

### Regression model. Dependent variable: Overall grade point average

In table 2, it is observed that the total amount of the $R^2$ value (R squared) between the dependent variable (general grade average) and what is explained by the independent variables is .693. This means three things: (1) The regression model fits the data, (2) the regression model is able to reduce the prediction error of the dependent variable by 69.3% (value of $R^2$) and, (3) there is a linear relationship between the variables. In other words, it means that the correlation between the dependent variable and the independent variables is still preserved and that these strongly influence the school performance (general grade point average) of the secondary school student.

Regarding the analysis of variance (ANOVA), Table 3 shows the F value (8,760). It also shows that there is significance between the dependent variable and the independent variables (.000); which confirms in the first instance the linear relationship already indicated in the summary of the model. It also means that: (1) there is a significant linear relationship between the dependent variable (general grade average) and the independent variables and (2) that there is collinearity between the predictor variables.

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[8] School grades are the quantitative or qualitative grades or expressions with which the level of school performance of students is valued or measured (Mesanza, 1983, p, 212).

The correlation matrix (Table 4) provides evidence that supports what has been pointed out so far. It is observed in the levels of significance (sig.) Of the multiple independent variables that influence or directly affect the general average of grades (dependent variable) and are constituted as predictor variables.

Table 2
*Summary of the model (b)*

| Model | R | R Square | R corrected square | Typ. Error of estimate |
|---|---|---|---|---|
| | .832(a) | **.693** | .614 | .57909 |

(a) Predictor variables: (Constant),
Spends on day care, Father with mother, Teacher helps him to do homework, He needed help to take care of a sick relative, Conflict resolution, In the family there are problems of suspending the student, The student uses computers to do homework, Confidence In the teachers, In the last 30 days I have gone out with my son to the museum, Literacy in the mother of the family, Spends on domestic gas, Weekly contribution of the mother to family spending, Spends on mobile telephony (cell), Spends on transport ( trucks, taxis, others), Number of school changes, Participation of the mother preparing food for the family, Total number of people who help the student to do homework, Spending on health (dentist, medicine), Brothers and sisters, Perception of performance school of the parents / child, What is the marital status with which you live with your partner, In the current cycle I contact the school to find out the annual school program, In the last three months due to lack of money you or the Someone under 18 years of age had the amount of food reduced when served, Belongs to another type of A.E., Better Family Relationship, Reason for changing schools
(b). Dependent Variable: General Average of Qualifications

Table 3
*Analysis of variance. ANOVA (b)*

| Model | Sum of squares | gl | Half quadrstic | F | Sig. |
|---|---|---|---|---|---|
| Regression | 76.383 | 26 | 2.938 | **8.760** | **.000(a)** |
| Residual | 33.870 | 101 | .335 | | |
| Total | 110.253 | 127 | | | |

*Note:* (a) Predictor variables: (Constant),
Spends on day care, Father with mother, Teacher helps him to do homework, He needed help to take care of a sick relative, Conflict resolution, In the family there are problems of suspending the student, The student uses computers to do homework, Confidence In the teachers, In the last 30 days I have gone out with my son to the museum, Literacy in the mother of the family, Spends on domestic gas, Weekly contribution of the mother to family spending, Spends on mobile telephony (cell), Spends on transport ( trucks, taxis, others), Number of school changes, Participation of the mother preparing food for the family, Total number of people who help the student to do homework, Spending on health (dentist, medicine), Brothers and sisters, Perception of performance school of the parents / child, What is the marital status with which you live with your partner, In the current cycle I contact the school to find out the annual school program, In the last three months due to lack of money you or the Someone under 18 years of age had the amount of food reduced when served, Belongs to another type of A.E., Better Family Relationship, Reason for changing schools
(b). Dependent Variable: General Average of Qualifications

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Table 4
*Correlation matrix. Coefficients (a)*

| Model | Standarized Coefficients Beta | t | Sig. |
|---|---|---|---|
| (Constant) | | 10.227 | **.000** |
| **Variables: students** | | | |
| School mobility | **-.315** | 2.204 | **.030** |
| Use of technologies | **.333** | 5.021 | **.000** |
| Teacher help | **.170** | 2.329 | **.022** |
| **Variables: students- family** | | | |
| Type of union of the couple | **.218** | 2.310 | **.023** |
| Perception of school performance | **.477** | 5.685 | **.000** |
| Best Family Relationship | **-.396** | 2.673 | **.009** |
| Best Family Relationship: Brothers and Sisters | **.246** | 2.100 | **.038** |
| School problems | **.221** | 2.930 | **.004** |
| Family dynamics for well-being | **-.282** | 3.126 | **.002** |
| **Variables: family -society** | | | |
| Trust in the teaching staff | **.202** | 3.032 | **.003** |

*Note:* (a) Dependent Variable: General Average of Qualifications

## Discussion and Conclusions

Making a synthesis of the existing correlations, from the review of the matrix, it can be said that the student's school performance will be affected by:

- *School mobility*[9]. The number of times the subject has changed schools due to school or external factors (change of residence, failure, misconduct, parental decision, other). Changing schools affects school performance.
- *Use of technologies.* Access to a computer. The greater the number of options for accessing a computer (own, borrowed, rented), the better the school performance.
- *Teacher help.* If the student receives extra help from one of his teachers to carry out his schoolwork. If the teachers help the students more, they will have better school performance.
- *Type of union of the couple.* If the couple are married, in common union, or if the mother or father of the student are separated or divorced (there is no partner), it will affect school performance.
- *Perception of school performance.* The positive perception of school performance. The more positive the perception of school performance by parents about their children, the better the school performance.
- *Family relationships.* Quality of family relationships. Better family relationships raise school performance.

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[9] According to Zamora and Moforte (2013, p, 49), school mobility is understood as "the withdrawal of the student from their high school or school and their transfer to another. It can be forced by the establishment, but it can also be voluntary. Forced disengagement is usually presented as expulsion or cancellation of enrollment due to economic, academic, or behavioral problems; while voluntary retirement corresponds to an autonomous decision of the family and can respond to multiple situations: dissatisfaction with the establishment, change of address, others. "

- *School problems.* The index of school problems permeated in the subject (failed, suspended, some illiterate relative, others). The greater the number of existing problems, the lower the performance.
- *Family dynamics for well-being. Intensity of participation.* The less participation of the mother helping in the well-being tasks of the student (preparing food), the lower the performance.
- *Trust in the teaching staff.* Intensity of trust in teachers. Greater confidence in teachers, higher school performance.

The variables already explained one by one can be established under three macro variables (table 4) and allow generating general conclusions from the analysis of the correlation matrix:

1. *Student body.* High school students who have changed schools the most number of times are at risk of having their school performance adversely affected. Your GPA. Linked to this, two variables that positively affect their school performance are: the use of computers and the help of teachers to do homework. In the case of the use of computers, the way in which the student appropriates its services is not relevant in the sense that it may be their own, rented in an internet café or provided by a family member. At the same time, if students receive help from a teacher, extracurricular learning conditions are generated that make it possible for students to improve their school performance

2. *Students -Family.* The composition of the family is related to the quality of the relationships between its members and the intensity of the school problems experienced by the students. Likewise, the perception of better school performance of the young person favors the participation of the mother in well-being activities in favor of the student, being the preparation of food one of them. Better family relationships, better perception of school performance, greater participation, are variables that positively affect school performance.

3. *Family -Society.* Trust is a variable that constitutes social capital, social capital is weakened with mistrust. This non-trust relationship affects the subject's school performance.

### Conclusions

*Student variables.* The findings of this research coincide with the findings presented by research carried out to identify the causes of poor school achievement. In Social capital in the creation of human capital, Coleman (1988) considered the existence of factors external to the family that are part of the family's social capital and that directly affect the student's school trajectory. In this sense, he considered that the number of times the student changed home (implying a change of school), most favored school dropout. In this research, the school mobility variable has been identified as a predictor of school performance.

*Student-family variables.* In this research, it was found that the marital situation (no partner, common law union, married) is a predictor variable of school performance. It agrees with the findings of Hall (1999) who points out that single parents (single-parent families) tend to have lower social capital. They build smaller social networks. According to the author, a variable that explains this is residential mobility. Like Coleman (1988), negative effects are attributed to the variable mobility. Coleman points to school dropouts; Hall notes weak social capital. The findings of this research also coincide with Jonsson and Gahler (1997) who gave evidence that indicates children who come from divorced parents and show lower educational performance. Findings and conclusions valid and applicable to secondary school students in the city of Torreón, Mexico

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On the other hand, Kliksberg (2000) states that as the educational climate in a family improves, the percentage of school failure decreases. A large percentage of the differences in school performance are linked to the educational climate of the home. Likewise, the perception of parents about their children's school achievement. As can be seen, parents who have a better perception of their children's school performance, achieve that they have better school performance. The correlation matrix shows that family relationships, the mother's participation in the work of preparing food for her children, directly affect the child's school performance (educational climate of the student).

Among the predictive variables that explain the school average, it was identified that they are correlated with the composition of the family, with the quality of the relationships between its members and with existing school problems. In this sense, the previous review of studies (Wilson, 1994) indicated that children living with only one parent are twice as likely to be expelled or suspended from school.

*Family-society variables.* In another dimension of analysis, at the family level, the findings of this research show that students who belong to families lacking social trust, (who do not trust the teachers), weaken their social capital. Poor social capital (characterized by mistrust) and weak family capital affect the school performance of the high school youth.

At the collective level, schools, like the family, play an important role in creating norms and social ties. What Hall (1999) and Putnam (2000) refer about the correlation between social capital and family was confirmed. Individuals are more engaged in social life, their networks spread and become more diverse; at the same time that they demonstrate more trust in other individuals. According to these authors, high levels of schooling are associated with a strong growth in social trust and community commitment; that is, with greater social capital.

Likewise, relationships within the family (quality relationships), especially those with intimate ties, create trust and cooperative behaviors outside the immediate family circle and throughout the individual's life. The correlation matrix shows that the family relationships variable is a predictor for determining school performance.

### Final thoughts

The findings found have the limitation of being valid only for high school students and in the urban context of northern Mexico. However, this research leaves an open door for future research that can investigate other social contexts or other school levels, and generate comparative studies that support a general hypothesis about the school performance of secondary school students and its relationship with school mobility. family relationships, trust towards teachers, among other variables. Finally, the conclusions of the article will be presented in a final section and then the main conclusions. Where appropriate, limitations and proposals for continuity will be included. .

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# DEVELOPMENT OF CRITICAL THINKING IN SONGWRITING STUDENTS USING PROJECT BASED LEARNING

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**Abstract:** Competency-based education offers benefits to students because it prepares them to acquire a set of skills which they will need in his professional, social and personal future, such as problem resolution, teamwork, oral and written communication, self-directed learning, performance orientation, creativity, and a comprehension of the reality which surrounds us. The objective of the present research was to find the benefit of Project-Based Learning (PBL) in the development of Critical Thinking competency. To achieve so, a qualitative method was utilized, with an observational design during the period of May-June 2019 in a high school located in Samborondón, Ecuador. The sample was a group of 23 students between the ages of 13 and 15. The PBL strategy was applied during 4 sessions where the sub-competencies of Analysis, Evaluation and Self-regulation (Critical Thinking dimensions) where observed and assessed by observation. Results indicate that there was development in the Critical Thinking competency, especially in the sub-competencies of Analysis and Evaluation of the information.

**Key words:** Critical thinking, project based learning, songwriting, generic competencies.

# DESARROLLO DEL PENSAMIENTO CRÍTICO EN ESTUDIANTES DE SONGWRITING UTILIZANDO APRENDIZAJE BASADO EN PROYECTOS

**Resumen:** La educación por competencias brinda beneficios a los estudiantes, pues prepara a los mismos de manera práctica en aquellas aptitudes que necesitarán en un futuro laboral, social y personal, como la resolución de problemas, trabajo en equipo, comunicación tanto oral como escrita, autoaprendizaje, orientación a resultados, creatividad y una comprensión más centrada de la realidad que nos rodea. La presente investigación tuvo como objetivo encontrar el beneficio del Aprendizaje Basado en Proyectos (ABPr) en el desarrollo de la competencia de pensamiento crítico. Para lograr los objetivos de este estudio, se utilizó un método cualitativo, con un diseño observacional, durante el periodo mayo-junio de 2019 en un colegio de la localidad de Samborondón, Ecuador donde la muestra fue un grupo de 23 estudiantes entre las edades de 13 y 15 años. La estrategia de ABPr se aplicó durante 4 sesiones donde las sub-competencias de Análisis, Evaluación y Autorregulación (dimensiones del pensamiento crítico) fueron observadas y evaluadas. La técnica de recolección de datos utilizada fue la observación en el aula y como instrumento se usó una rúbrica que midió las sub-competencias antes mencionadas. Los

resultados indican que sí hay un desarrollo de la competencia de pensamiento crítico, especialmente en las sub-competencias de Análisis y Evaluación de la información.

## Introduction

The term "competency" is not new; on the contrary, it is extremely old and has been used in countless contexts. However, in education, competency-based training has gained recent popularity among educational researchers. Many authors have conducted studies and written texts and articles on how learners should achieve the attainment of these competencies, both generic and specific, in order to perform well in their learning and work environments.

In ancient Greece, there was already talk of competencies and of how philosophers used learning strategies that allowed their students to learn about the reality of their environment based on problems posed in a real context. Today, this is precisely one of the axes of competency-based education: questioning reality and solving its problems. Moreover, Greek philosophers established relationships between different subjects in order to really grasp reality and its concepts. In today's world, competency-based education is also based on the implementation of strategies between different disciplines that help students to achieve truly meaningful learning (Tobón, 2013).

But what are competencies? It is difficult to define this term, as it has many definitions and applications in the field of education. It was in the 1960s that the term competencies began to be structured by Chomsky and Skinner. Chomsky (1970) spoke of a linguistic competence as a mental structure put into action through specific communicative processes. Later, the term competence began to be defined more as an observable behavior and not as an internal mental process. It is this meaning that has taken on greater prominence in the labor and educational world, given that educational institutions are beginning to train based on the performance requirements of their employees (Tobón, 2006). We could then define competencies as the set of knowledge, attitudes, and behaviors necessary for the performance of an activity.

It is necessary at this point to begin to make a distinction between specific competencies and generic competencies. The former are those that are exclusive to a given area of study, while the latter are those that are common to any discipline or subject. The development of the latter will be of utmost importance for the performance of students and their insertion in the labor market and in any social context (Villa & Poblete, 2007).

From a practical point of view, Sandoval (2010) argues that the labor market is continuously demanding professionals "of a high technical, flexible and innovative level [...] that will allow the company to be competitive" (p. 61). This position requires education to modify its curricula in order to improve and develop the country's economy, especially in an increasingly globalized world that involves markets in many parts of the world. According to a study conducted by the Tecnológico de Monterrey in 2009 (cited by Olivares Olivares, 2015), some of the most popular competencies among organizations are: Teamwork, working under pressure, proactivity, information management, entrepreneurship, and innovation.

It is necessary that these competencies are always acquired based on a context, a practical case or a real problem to be solved through concrete activities by the student. This is why developing a competency requires the combination of knowledge, values, skills, emotions, and attitudes that the student must acquire. Consequently, an educational model based on competencies will always be characterized by the establishment of relationships between different disciplines, skills, and ideas (García Retana, 2011).

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Critical thinking is one of the generic competencies that has most influenced authors to define, develop, and study it. It is important to develop this competence in students of all ages because in this way they can make their own decisions based on the content of the subject they are studying. It is also important to note that the formation of critical thinking is not only a concern of teachers and researchers, but also of governors (Vizcaíno, Marín, & Ruiz, 2017). It is, then, when the challenge for teachers is to create a learning sequence and strategies that awaken the student's intellect.

Among the definitions that can be found of this competency, Elder and Paul (2008) define critical thinking as the ability of students to appropriate the content of the subject and through this, to learn to think in their own way. Meyers (1986, cited by Véjar, 2008, p. 1) proposes incorporating elements of critical thinking throughout the students' curriculum, so that they use this competence in different areas of human knowledge. Thus, the critical thinker will think "outside the box" and leave a more lasting and complex impression by combining objective and subjective material. Likewise, the critical thinker will understand that memorization of historical data or dates is of little use if there is no practical application of such knowledge. This is why Véjar (2008) defines critical thinking as deliberate thinking that uses problem-solving, decision-making, evaluation, and metacognition skills to resolve conflicts, make decisions and analyze those conflicts in depth. For Facione (2011), the critical thinker must possess the following skills: interpretation, analysis, evaluation, inference, explanation, and self-regulation. The author mentions that each skill responds to specific questions that help the development of each of these skills. Facione considers self-regulation as perhaps the most notable of all these skills, as it is the one that allows the student to improve his or her own thinking process; this is why some call this skill *metacognition*.

For the development of this study, we worked with the dimensions *Analysis*, *Evaluation* and *Self-regulation* and their relationship and application with the didactic strategy of Project Based Learning (PBL) for the development of this competency. *Analysis* refers to identifying inferential relationships between questions, concepts, descriptions or other forms of representation that express a belief, judgment, experiences, reasons, information or opinions (Elder and Paul, 2008). *Evaluation* verifies the credibility of judgments or other representations that are descriptions of a person's perception, experience, situation, judgment, belief, or opinion (Véjar, 2008). Finally, *Self-regulation* consciously seeks to monitor one's own cognitive activities, the elements used in these activities, and their results, applying analysis and evaluation skills to one's own judgments (Facione, 2011).

It was considered to work with these dimensions because they develop skills necessary to develop critical thinking and of the three authors cited in the table above, all three mention evaluation as a dimension of critical thinking and two of them mention analysis as a dimension of critical thinking. Only Facione mentions self-regulation, but it was chosen because it is necessary for the student to take responsibility for his or her own instruction and this is something that the present study wanted to develop.

For Aquino (2018), the ABPr seeks to foster skills in students so that they can function in a real and practical environment and avoid the memory aspect of traditional teaching. In this learning model, students work actively from the design, planning, execution, and evaluation of real projects outside the classroom (Martí, Heydrich, Rojas, & Hernández, 2010). The search for the active student arises through the ABPr as the student is presented with a path to follow that allows him/her not only to acquire knowledge, but also to really learn concepts by applying them to a real context. The ABPr is effective in its objective of developing in the student different types of skills, values, and attitudes while working in a practical and concrete context, but at the same time complex and meaningful. This strategy also seeks to achieve the motivation of the students involved in the project, since they are the ones who, autonomously, achieve their

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learning and are an active part of the teaching-learning process. Likewise, students work with the purpose of satisfying a social need, committing themselves to society by using their own innovative resources (Maldonado, 2008).



*Figure 1*. Relationship between PrBA and the development of critical thinking.

*Note:* Source: Facione (2011), Elder and Paul (2008), Véjar (2008), Tellez (2018) and Poveda (2018).

Since the subject matter of the project implemented in the present study is songwriting, the *Find Inspiration Method* by author and composer Anthony Ceseri (2012) was used. This method allows the composer to get inspiration from other songs in a concrete way.   With this method, the composer can take an existing song or part of an existing song and apply modifications to it, so that, the result is a composition of his own. After choosing the song, the composer can dismember it, examine its parts, change them, and put them back together again to obtain a completely new song.  This method is used by Ceseri in his book *How to write songs that sell* (2012) in each of the phases of writing a song. For example, it is used in the phase of choosing the theme of the song, the melody of the song, the lyrics of the song, and the chord progression of the song.

We worked with a group of boys between 12 and 15 years old who study at the Colegio Menor San Francisco de Quito Campus Samborondón. This institution is private and was founded in Samborondón in 2013. This school has gained popularity among many inhabitants of the area, as it has the successful antecedent of Colegio Menor San Francisco de Quito Campus Quito, founded in 1995. Both educational institutions are owned by the Universidad San Francisco de Quito. Its education is focused on the Liberal Arts model and based on international and American school models. It is recognized by the Ministry of Education of

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Ecuador and accredited by AdvancED. Colegio Menor students belong to a medium-high socioeconomic status, as it is one of the most expensive schools in the city.

Three things must be taken into account. First, songwriting requires analysis and interpretation of previous works, genres, styles, messages, theoretical and practical aspects of music. Second, these skills along with the evaluation of the compositional process and the self-regulation that the student must follow in order to be consistent and successful in his or her attempt to compose better songs are crucial dimensions of critical thinking competence. And, third, that songwriting is, in itself, a project with clear phases and well-defined deliverables with the goal of creating a final product.

Given the above considerations, the following research question is posed: How does the project-based learning strategy develop critical thinking in high school students of *Songwriting* in a private institution in the city of Samborondón, Ecuador?

## Method

In this study, a sample of 23 students belonging to the 8th, 9th and 10th grades who are studying and have chosen the subject of *Songwriting* at Colegio Menor San Francisco de Quito, Campus Samborondón and whose ages range from 13 to 15 years old, were used. These 23 students participated in all phases of the project and represent the totality of the *Songwriting* class, since the rest of the school's students belonging to the academic grades mentioned above are divided among other subjects related to the musical arts, specifically instrumental techniques such as trombone, trumpet, saxophone, flute, percussion, and choir. *Songwriting* was chosen for this study because of its particular quality of being a songwriting project.

The technique selected for data collection in the research is Classroom Observation. This is qualitative in nature and is used to collect subjective information during the development of the teaching strategy through pre-established observation categories (Hernández, Fernández & Baptista, 2010). The application of this technique can be direct observation in the classroom by the researcher or through recorded sessions later analyzed by the researcher. In this study, the results obtained after direct observation of the students during the activities carried out applying the ABPr didactic strategy were measured. Comments and responses to questionnaires located in each student's folder using *Google Drive* were also taken into account. These questionnaires made it possible to follow up on the assessments of the project activities.

The rubric used is based on the theory of critical thinking dimensions of Facione (2007), Elder and Paul (2008), Poveda (2018) and Véjar (2008), specifically the three dimensions chosen in Chapter 1 of this paper, which are: Information Analysis, Evaluation, and Self-Regulation. It is worth mentioning that the participating students already possessed knowledge about music theory acquired in previous years as part of the music program of the institution where this study was conducted. This is why the rubric includes music theory content.

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Table 1

Assessment rubric for critical thinking skills during the application of the ABPr strategy.

| Critical thinking skills established by Facione (2007), Elder and Paul (2008) and Véjar (2008). | Valuation level | | |
|---|---|---|---|
| | High | Medium | Low |
| Information Analysis | The student understands and expresses the meaning of styles, song structures, and compositional elements of music; categorizes these meanings and clarifies their meaning. | The student understands and expresses the meaning of styles, song structures, and compositional elements of music, but does not categorize their meaning or clarify their meaning. | The student does not understand or express the meaning of styles, song structures, and compositional elements of music, nor does the student categorize their meaning or clarify their meaning. |
| Evaluation | The student assesses the credibility that integrates his perception, experience, situation, judgment, or belief towards what elements are most appropriate for the song he is going to compose; compares strengths and weaknesses, makes judgments. | The student assesses the credibility that integrates his or her perception, experience, situation, judgment, or belief as to what elements are most appropriate for the song to be composed, but does not compare strengths or weaknesses, nor does he or she make judgments | The student does not assess the credibility that integrates his or her perception, experience, situation, judgment, or belief as to what elements are most appropriate for the song to be composed, nor does he or she compare strengths or weaknesses, or make judgments. |
| Self-regulation | The student consciously monitors his cognitive skills, applying analysis, evaluation, questions, confirms, and validates his own results. | The student consciously monitors his cognitive skills, applying analysis, evaluation, but does not question, confirm or validate his own results. | The student does not consciously monitor his cognitive skills, applying analysis, evaluation, nor does he question, confirm or validate his own results. |

Since the observed students attend 5 sessions per week within this subject, this instrument was applied every three sessions and after each homework or written activity that the students turn in.

Likewise, at this stage of adolescence, songwriting seen in an academic way is not something that students are used to and that takes time, the object of the present study was only the collection of data in the early stages of songwriting. The study was conducted between May 6, 2019 and June 14, 2019, dates corresponding to the first test of classes of the 2019-2020 school year.

This project was based on *The Find Inspiration Method, drawing inspiration for your music from other songs,* from the book *How to Write Songs That Sell* by Anthony Ceseri (2012), according to this method, students choose themes, styles, techniques, elements, and musical

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motifs in other songs that they develop and analyze in order to give them a twist and make them their own for their own composition. This activity requires a lot of analysis and judgment to be able to choose the best option to be used in their song and to be able to raise their level of critical thinking. Each student had a folder in *Google Drive* where the activities and their choices of such elements, styles, among others, were captured. Throughout the project, students were able to revisit previous phases if they decided to change any of the elements they had previously chosen. The composition is something alive and not static, since it is common that they want or can change something of their composition if they prefer, for this requires a lot of self-regulation and it is something that is observed in each phase of the project.

The phases and their activities are described in detail in the following table, as well as the relationship between the project phases and the ABPr phases.

Table 2

*Didactic strategy implementation process*

| Strategy implementation phases (Ceseri, 2012). | Correspondence with ABPr phase | Activity | Integration of critical thinking in each activity | Sub-competency to be evaluated |
|---|---|---|---|---|
| Introduction and pair formation. | Start-up Phase and Team Formation | Description of the study. | What objectives do we want to achieve? | None. |
| Choice of song theme. | Information gathering, Analysis and synthesis, Production | Brainstorm different themes that the song can address. | What is the best theme for what we want to express? | Analysis, Information Evaluation, and Self-Regulation. |
| Choice of song perspective. | Information gathering, Analysis and synthesis, Production | Ask, Who is speaking? To whom is he/she speaking? And why? | What is the best perspective to use? | None. |
| Choice of song form and structure. | Information gathering, Analysis and synthesis, Production | Analysis of different structures and shapes. | What structure best fits what we want to express? | Analysis, Information Evaluation, and Self-Regulation. |
| Choice of chord progression and its rhythmic pattern for each section of the song. | Information gathering, Analysis and synthesis, Production | Analysis of different chord progressions and rhythmic possibilities. | Which progression best accompanies what I want to express in my song? | Analysis, Information Evaluation, and Self-Regulation. |
| Choice of melody to be developed and varied for each section of the song. | Information gathering, Analysis and synthesis, Production, Evaluation and self-evaluation. | Analysis of different melodies and their types. Establishment of contrasts between each section. | What kind of melody should I choose? How do I make variations on an existing melody to make it my own? How do I establish contrasts between the sections of my song? | Analysis, Information Evaluation, and Self-Regulation. |

The data analysis was carried out qualitatively through the classroom observation technique using a rubric that measures the LOW, MEDIUM and HIGH levels of the students in

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terms of the acquisition of the critical thinking sub-competencies specified in Chapter 1 of this work according to Facione (2007), Elder and Paul (2008) and Vejar (2008). The phases of the project in which the rubric was applied were the following: 1) choice of song theme, 2) choice of song form and structure, 3) choice of chord progression and its rhythmic pattern for each section of the song, and 4) choice of melody to be developed and varied for each section of the song. The aforementioned phases were chosen because they demonstrate the greatest opportunities for analysis, evaluation and self-regulation to be developed by the participants. In each of these phases, students analyzed previous information, applied the knowledge acquired in their own project, and took responsibility for their own progress during the project.

## Results

### *Information analysis*

Facione (2014) defines the subcompetency of Information Analysis as the identification of relationships between questions, concepts, or other forms of representation that express some belief or judgment about certain factors. The process by which information is analyzed for Facione involves examining ideas, contemplating various arguments, and analyzing those arguments. This process is the one that was worked on with the students during the 4 sessions. In the particular case of this sub-competency, the students analyzed several sources of information in each of the sessions, with various types of content in order to make the choice that best meet their needs within the project.

For *Session 1 - Choosing the theme song*, the students were divided into pre-established pairs. The teacher presented the brainstorming activity to the students and taught how to do it in front of the students. After having presented the activity, the students brainstormed in pairs in which they first chose a general topic and, following the teacher's instructions, were able to go from those general topics to more specific ones on which they composed the lyrics of their song.

The result of this activity was evidenced in their *Google Drive* folder where the teacher was able to check that the students had completed the activity after monitoring and supervision within the classroom.

*Session 2 - Choosing song form and structure* consisted of analyzing existing songs that the students had previously heard, some of them were their favorites. The objective of this phase is for them to rationalize which song structures they were most attracted to and would use for the composition of their song. For this, the students filled out a document in which they expressed in detail which structure they chose and which song or songs they referenced for the selection of that structure. An example of a song structure is the following: intro - verse 1 - verse 2 - pre-chorus - chorus - interlude - verse 3 - pre-chorus - chorus - bridge - final chorus - outro.

In addition, the students made a topic development diagram in which they were able to divide the story to be told in their song into three parts. This allowed the students to not tell the entire story of their song in the first section of the song, as there would be nothing to tell in the rest. The first part was to contain a simple idea, the beginning of the story; this section would be embodied in stanza 1 and stanza 2 of the final song. The second part is where the idea expressed in the first part is developed, that is, if in the first part the composer described a moment in time in which the story takes place, the second part would talk about what the main character felt in the story; this section would be expressed perhaps in the pre-chorus or stanza 3 of the song. Finally, the third part is where the most important part of the song is expressed, the chorus or bridge, usually the parts of the song that have the largest instrumentation. In this part the main message of the song is told.

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As in Session 2, in *Session 3 - Choice of chord progression and its rhythmic pattern for each section of the song,* participants analyzed chord progressions used in other songs that matched the theme of their song. For this activity, the students already had prior knowledge of diatonic chords, chord construction and musical analysis in Roman numerals. Knowing this, the students were able to capture on paper which chords they would use. An example of a chord progression using Roman numeral analysis is as follows: I - vi - IV - V (major chords are expressed in upper case and minor chords are expressed in lower case).

As in session 1, students filled out a document in which they wrote their chosen progressions and the songs to which those progressions refer. This document was saved in each individual *Google Drive* folder. It should be emphasized that the progressions did not have to be exactly the same as the referenced songs, but those songs served as a starting engine for the students to make their own.

For *Session 4 - Choice of melody to be developed and varied for each section of the song,* once the structure and chord progression of the song was chosen, the students analyzed existing melodies from which they learned how phrases and melodic lines act with certain chords and, in contrast to other sections of the same song, so that their song can tell a story and has a dynamic characteristic of a professional song.

For example, in some of the songs they referenced, the melody of the verses had a low or middle register, the pre-chorus took that melody from a low register into a middle register to end in a high register by the time it reached the chorus. This provides a melodic dynamic to the song that takes the listener of the song on a melodic journey while telling a story with words. The goal of this activity is for students to be able and know how to melodically contrast one section from the other so that their song is not boring and the best way to do this is by listening to and analyzing famous songs by other songwriters and composers.

In this activity, students were urged to be very careful not to copy the melodies of other songs, as this would constitute plagiarism. It is also worth mentioning that only the melodies and lyrics are copyrighted, not the chord progressions or themes of the songs. Thus, the students could have chosen a chord progression exactly like that of another song, even in the same key, and not be in danger of plagiarism for any reason.

After applying the rubric, the results can be seen in the following graph. In it, sessions 1 to 4 are shown on the *x-axis* and the levels on the *y-axis*, where LOW is 1, MEDIUM is 2, and HIGH is 3. The average achieved in the first session was 1.69, in the second session it was 2.04, in the third session it was 2.26, and in the fourth session it was 2.44. As can be seen in the graph, there was an increase in the development of the Information Analysis sub-competency of 0.75, a value obtained by subtracting the average of session 4 minus the average of session 1.
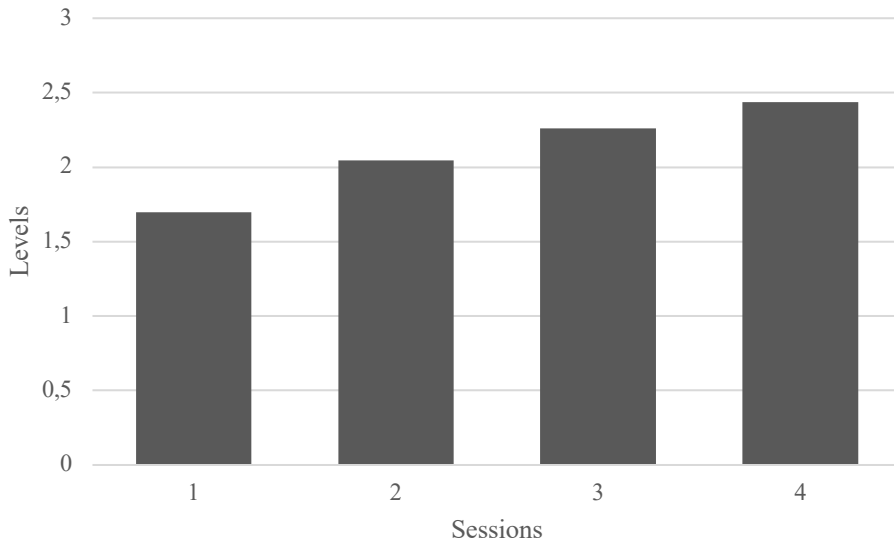
*Figure 2.* Graphical representation of the average values achieved in the subcompetence of Information Analysis in the 4 sessions of the project.

### Evaluation

The evaluation of the information is the next step after the analysis, since it is where the student made a judgment on the information and content analyzed. The student compared the strengths and weaknesses that will allow him/her to choose one source of information over the other (Facione, 2014). The student reasoned about those aspects on which there is disagreement (Norris and Ennis, 1989) and this was what the students in this study were able to do, especially since it was a study carried out in pairs; there were disagreements at the beginning, but as the project progressed their way of evaluating the information allowed for more reasoned agreements.

In session 1, the students evaluated, after brainstorming, which theme would be the most appropriate for their song. We must remember that they are 13 to 15 year olds and that this is a school project; therefore, the theme of the song must be appropriate and free of any controversy and polemic. The result of this activity, as well as the rest of the activities, was captured in their individual *Google Drive* folder.

After listening to many songs and analyzing their structures, in session 2 the students chose the one that best fit the message they wanted to tell in their song. After deciding on the base form of the song (intro - stanza1 - stanza2 - pre-chorus - chorus - stanza3 - pre-chorus - chorus - bridge - final chorus - outro), the students defined the number of measures each section would have. An example of this is shown below:

- Intro - 4 bars
- Stanza 1 - 8 bars
- Stanza 2 - 8 bars
- Pre-chorus - 4 bars
- Chorus - 8 bars
- Stanza 3 - 8 bars
- Pre-chorus - 4 bars
- Chorus - 8 bars
- Bridge - 4 bars

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- Final chorus - 16 bars
- Outro - 4 bars

In session 3, the students applied the chosen progressions to each section of their song. They also assigned the duration of each chord within each progression. After the students were able to hear which chord progressions they liked best for their song, they had to evaluate which chord progression(s) best fit the message of their song. For example, if their song had a happy, motivational, or tender theme, their chord progression could not contain a majority of minor chords, as this would give their song a bit of a dark color that would not have been compatible with the lyrics of their song. Similarly, if your song had a somber or sad theme, your chord progression could not contain a majority of major chords, which would have given a bright, cheerful color to a sad lyric.

After evaluating their choices and selecting the chord progression to use, the students had to choose the duration per measure for each chord. They could choose the same duration for all the chords or different durations depending on what they felt was most appropriate for their song.

In session 3, after having listened to melodies of other songs, their dynamics, their contrasts and how they acted in relation to their chord progressions, the students finally evaluated their choices and composed the melody that effectively accompanied their previously chosen chord progression. After applying the rubric, the results can be seen in the following graph. In it, you can see sessions 1 to 4 on the x-axis and the levels on the y-axis, where LOW is 1, MEDIUM is 2 and HIGH is 3. The average achieved by the 23 students in the first session was 1.69, in the second session it was 1.91, in the third session it was 2.17 and in the fourth session it was 2.43. As we can see, there was an increase in the development of the sub-competency of Information Analysis of 0.74, a value obtained by subtracting the average of session 4 minus the average of session 1.



*Figure 3.* Graphical representation of the average values achieved in the evaluation subcompetence in the 4 sessions of the project.

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### *Self-regulation*

Self-regulation refers to the monitoring by a subject of his own mental processes, applying the analysis and evaluation of his own knowledge and judgments. This makes the subject constantly examine himself and correct himself if necessary (Facione, 2014). Students become responsible for their way of reasoning and the way they act in front of a certain situation so that they can make the best possible decisions (Elder and Paul, 2006).

The description of the sessions for this sub-competency is no different from the others already detailed in the sections on the other studied sub-competencies. During these sessions, the teacher served as a guide while the students carried out the work on their own and in collaboration with each other. The teacher supervised the activities going from one pair to the other and observed their attitudes, forms of communication, collaborative work between pairs, and proactivity when doing the activity.

After applying the rubric we can see the results in the following graph. In it, we can see the sessions from 1 to 4 on the x-axis and the levels on the y-axis, where LOW is 1, MEDIUM is 2 and HIGH is 3. The average achieved by the 23 students in the first session was 1.91, in the second session it was 2.22, in the third session it was 2.35, and in the fourth session it was 2.57. As can be seen, there was an increase in the development of the sub-competency of Information Analysis of 0.66, a value obtained by subtracting the average of session 4 minus the average of session 1.
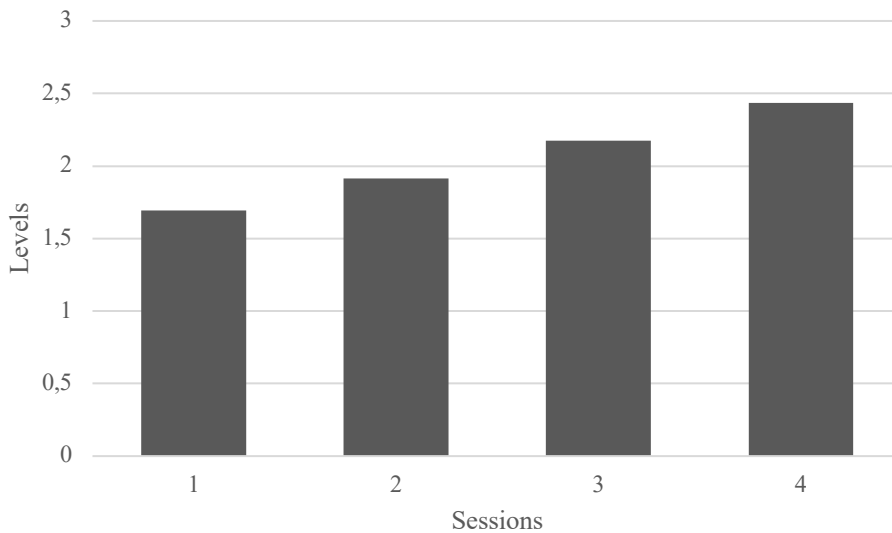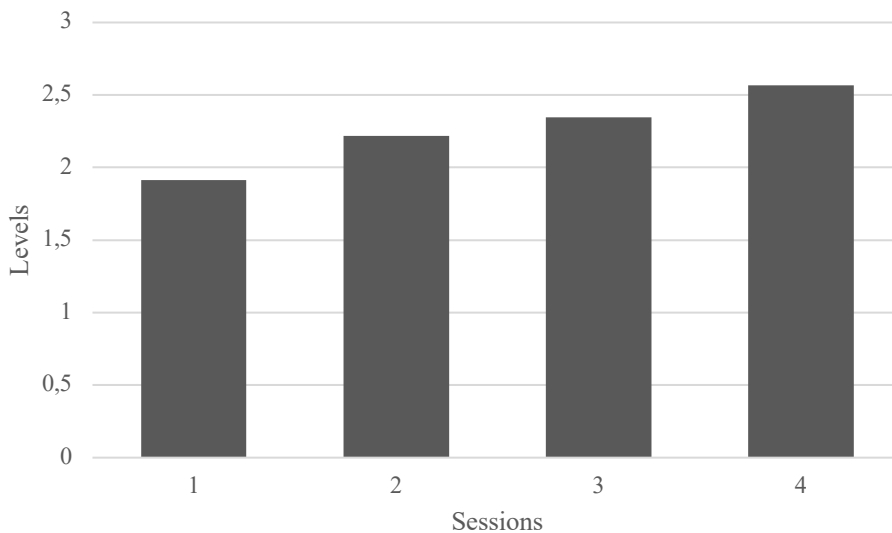


*Figure 4*. Graphical representation of the average values achieved in the Self-regulation subcompetence in the 4 sessions of the project.

### **Discussion and conclusions**

Learning music is not one-dimensional. It requires perceptual, cognitive, and motor skills. All these skills interact with each other and evolve in complex ways that we are still trying to understand (Lehmann and Davidson, 2006). However, what is crucial is that music instruction is appropriate if the development of critical thinking is to be achieved, since the learner is not going to do it on his or her own.

This study sought to answer the following research question: How does the Project Based Learning strategy develop critical thinking in high school students of *Songwriting* in a private institution in the city of Samborondón, Ecuador? It was concluded that the use of this

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didactic strategy does favor the development of critical thinking in this type of students after using a qualitative instrument for the collection and analysis of results.

The general objective of this study was to determine how Project Based Learning (PBL) allows the development of critical thinking in high school students of the subject *Songwriting* in a private school in Samborondón, Ecuador and it can be said that although there was an improvement in the critical thinking skills of students on average, it was not a very marked increase, since in certain students there was no development of critical thinking sub-competencies.

To meet the specific objectives of knowing the level of critical thinking in students and the assessment of each of the critical thinking sub-competencies, the classroom observation technique allowed evaluating these results in the sessions in which the strategy was implemented by seeing how students achieved the objectives of the project, carried out the activities of the project, and the results obtained in it.

Classroom observation allowed us to see the change in some students as they assimilated knowledge about composition and about which aural and structural elements were the most appropriate for the composition of their song. In some cases, it was even possible to see that they went from a LOW to a HIGH level during the development of the project. Also, being a peer project, communication among the students improved as the project phases progressed; at the beginning it was difficult for them to reach a consensus on which elements were the best for the composition, but by the end of the project, their agreements were flowing in a better way.

In relation to song composition, Ceseri (2012) expresses in his method that the student will be able to separate a song into parts and examine each of them for the benefit of their final product. This was proven by the students as they demonstrated this ability at the moment of choosing the elements that they would later use in their song. The results of the application of the ABPr strategy present concordance with the studies conducted by Hopper (2014), in which the author concluded that this strategy fostered the development of communication skills and teamwork, and Cenich and Santos (2005) where students showed authentic motivation with their task at the moment of discussing and arguing the best options with their peers to present concrete arguments. The participants in this study corroborated these findings, because if at the beginning of the project communication among them was not very fluid and there were disagreements about what elements to use and how to use them, at the end of the study the consensus reached was much more effective in terms of communication.

The fact that the subject of the study was not traditional and is not a subject usually taught in schools and colleges meant that the students may not have expressed an academic attitude at the beginning of the project or taken a more serious attitude towards the project. A longer project in which the participant is given more time to enter into this attitude would have achieved more pronounced and noticeable results.

This study brings new knowledge to the academic community, as it shows the development of critical thinking skills in a subject or field that has been little explored in educational research: musical composition. The fact that the student is creating something of his or her own after analyzing and evaluating previously received information is something that many educators seek in their students and this study helps to better understand how to achieve this. Its degree of subject specificity makes this study unique in its category, as no other researcher has studied this subject before.

One of the positive aspects of having conducted the study is to provide the opportunity to develop not only critical thinking skills, but other generic skills through strategies implemented in subjects that have not received attention from teachers, researchers, and managers of an educational institution. This study allowed students to see how their level of

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critical thinking goes beyond the usual subjects or those called traditional by the educational community.

Similarly, it is important to see how the creation of something of their own by the students becomes an effective tool in the development and promotion of this type of competencies. This type of research or study could be applied in the future to the plastic and graphic arts given its application in the musical and compositional fields.

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# HIGHER EDUCATION BASED ON NEUROEDUCATION AND POSITIVE PSYCHOLOGY: PERCEPTIONS FOR UNIVERSITY STUDENTS WITH AND WITHOUT ADHD

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**Abstract**. The phenomenological study explores the meanings given by university students with and without Attention Deficit Hyperactivity Disorder (ADHD) to their experience with teaching methodologies based on neuroeducation and positive psychology, 43 university students participate, 22 (15 girls and 7 boys) are diagnosed with ADHD; and 21 (15 girls and 6 boys) do not have this diagnosis. They are aged between 19 and 27 and come from various professional careers. A qualitative methodology is followed with a phenomenological approach using an interview prepared ad hoc and validated by experts. Young people have shared a training experience with teaching and learning strategies aimed at improving attention deficit within the framework of an inclusive education philosophy. The findings in both groups show that teaching strategies based on neuroeducation are perceived as tools for improving attention and positive psychology practices as an aid to generate a positive attitude and strengthen values. The results are discussed in relation to other studies that show the voices of students with educational needs in higher education. Also, with studies that point to the effectiveness and questioning of the strategies used.

**Keywords:** learning disabilities, higher education, neuroeducation, positive psychology, phenomenology

# FORMACIÓN UNIVERSITARIA BASADA EN LA NEUROEDUCACIÓN Y LA PSICOLOGÍA POSITIVA: PERCEPCIONES DE JÓVENES CON Y SIN TDAH

**Resumen**. El estudio fenomenológico explora los significados dados por jóvenes universitarios con y sin Trastorno por Déficit de Atención e Hiperactividad (TDAH) a su experiencia con metodologías didácticas basadas en la neuroeducación y en la psicología positiva. Participan 43 estudiantes universitarios, 22 (15 chicas y 7 chicos) son diagnosticados con TDAH; y 21 (15 chicas y 6 chicos) no tienen este diagnóstico. Tienen edades comprendidas entre los 19 y 27 años y proceden de diversas carreras profesionales. Se sigue una metodología cualitativa con enfoque fenomenológico empleando una entrevista elaborada *ad hoc* y validada por expertos/as. Los jóvenes han compartido una experiencia formativa con estrategias de enseñanza y aprendizaje orientadas a la mejora del déficit de atención en el marco de una filosofía de educación inclusiva. Los hallazgos en ambos grupos muestran que las estrategias de enseñanza basadas en la neuroeducación son percibidas como herramientas de mejora de la atención y las prácticas de psicología positiva como una ayuda para generar una actitud positiva y fortalecer valores. Los resultados se discuten en relación con otros estudios que muestran las voces de estudiantes con necesidades educativas en la formación universitaria. También con estudios que apuntan a la efectividad y al cuestionamiento de las estrategias utilizadas.

**Palabras clave**: Dificultades de aprendizaje, educación superior, neuroeducación, psicología positiva, fenomenología.

## Introduction

The nature of higher education imposes teaching and learning strategies linked to didactic methodologies that are scarcely sensitive to the learning needs of many students. Getting the attention of students is, in itself, a challenge and, much more, when there are learning difficulties that affect academic performance, such as those derived from attention deficit disorder with or without hyperactivity known by its acronym (ADHD) (López et al., 2015). According to the latter authors, this neurobiological disorder begins in childhood and is characterized by inattention and / or impulsive of hyperactivity. However, it also affects physical activity, diet, sleep, body image, and coordination. Currently, this disorder is very common in college students, but it is rarely diagnosed at that age (Danese et al., 2016). In most cases, those affected did not receive a timely diagnosis, they do not know the symptoms and simply do not know that they have this condition, as Rodillo (2015) points out: "it is considered the most frequent neurodevelopmental disorder" (p. 53). At the university level, the individual development of students must be a key element of training. In most cases, university students do not receive the necessary attention when they have a learning difficulty, since it is assumed that being adults, a large part of the responsibility for their learning falls on themselves. The problem presented by university students with ADHD is poor academic performance (Prevatt, et al. 2012), sometimes due to lack of concentration, lack of motivation on the part of the teaching staff, lack of effective teaching strategies that help to improve the level of attention. According to González (2018), teachers recognize that they require training in the subject to work properly and use educational strategies that help university students.

Hence, it is key to explore appropriate teaching strategies and methodologies. The innovative nature of the study lies in the experimentation with didactic methodologies that pay attention to the educational needs of each student in the university environment.

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In the same way, they follow a teaching methodology that we understand to be effective for all types of learners; supported by two teaching strategies. The first consists of brain gymnastics and movement dynamics; and the second, consists of didactic practices based on principles of positive psychology. In this work, university students with ADHD and without ADHD participated in the same context, with the same teaching methodology taking into account the philosophy of inclusive education as a training strategy, also in university education (Moriña et al., 2015a). Thus, the general purpose of the study is to get closer to the experiences with respect to this novel methodology in a wide group of students with ADHD, but in an inclusive context of teaching for all (where other students without ADHD also participate, learn and learn). benefit from this type of methodologies). The study takes into account the criticisms and questions that other research maintains regarding these proposals (Dijk and Lane, 2020).

It is important to emphasize that in the practice of inclusive education, the teacher should consider designing her class based on the educational needs of their students and, thus, collaborate with the process of educational inclusion in the university environment. Therefore, in order to help them improve their attention in class, it is necessary to implement a comprehensive and inclusive didactic methodology, which, based on strategies with a neuroeducational approach and positive psychology practices, improves both their learning and their lifestyle. Recent studies such as the one by Tham et al. (2019) show that teachers show a growing interest in the applications of neuroscience research to pedagogy in the classroom.

### Background and current status of the issue

Attention to educational needs in university education has been the object of recent study in comparison with the volume of scientific contributions at other educational levels (Gómez, et al. 2018). There are numerous investigations that deal with the experience of students with educational needs at the University (Mullins and Preyde, 2013; Redpath, et al., 2013). However, little research indicates effective teaching strategies at the college level for students with ADHD. That is why the development of new teaching strategies is important as they will help improve the attention and academic performance of students.

According to a study by Prevatt, et al. (2012) college students with ADHD tend to have a low grade point average, are more likely to be in an academic probation period, have more difficulty in reading and writing tests, and report more academic problems than those without ADHD, they also report scores lower in time management, concentration, motivation, anxiety, test-taking skills, and study strategies than those without ADHD.

Other studies conclude that there are factors, such as positive mental support from mentors and caregivers of college youth with ADHD, that protect them from negative outcomes (Wilmshurst, et al. 2011). In the same sense, a study carried out by Sánchez (2018) suggests that, in order to improve the learning process of students with ADHD, it is relevant that teachers make changes in the methodology and communication, as well as in the use of new resources and tools, as they are essential issues so that an effective teaching-learning process can be achieved in them.

### Literature review

Two main approaches theoretically and empirically guide the research; on the one hand, the incipient contribution of studies and theorizing on neuroeducation and, on the

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other, positive psychology. We address below some of the conceptual aspects that support the research. Thus, Gago and Elgier (2018) collect contributions such as Fonticiella (2007) that show that one of the main contributions of neuroscience to education is the educational and therapeutic strategies that are generated around learning and growth learning disorders. Thus, they indicate that specific intervention strategies have been carried out for each of them.

"Neuroeducation Studies" is defined as a growing interdisciplinary field based on the synergistic connection between neuroscience, cognitive science, psychology and education in an effort to improve our theory, understanding and practice of learning and education (Nouri, 2013). According to Nouri (2016) other terms have been used synonymously in neuroeducational studies, such as "Educational neuroscience" and "Mind, brain and education". Specifically, there are works that link the Brain Gym with neuroeducational proposals (Compagno and Pedone, 2016) others that position it as a myth in neuroscience without scientific evidence (Bruer, 1999).

The Brain Gym is a series of fast, fun and energetic activities. These activities are effective in preparing any student for specific coordination and thinking skills (Ruiz, 2016, p.18). According to Compagno and Pedone (2016), these activities are based on the idea that simple physical exercise helps blood flow to the brain and improves the learning process by ensuring that the brain remains alert. According to the authors, studies in Brain Gym attest that movement increases the electrical activity of the hippocampus and, consequently, improves learning and memory formation. By enhancing the activity of neurons, exercise increases the brain's ability to receive proprioceptive information. According to González (2008, p. 67) it is a "very simple system of mental and bodily exercises, whose primary objective is to improve the different thought processes". Gymnastics is based on the principle that affirms that there is no learning without movement, because this genre develops neural networks or connections. Brain gymnastics connects the two hemispheres of the brain so it helps to maintain the attention of the practitioner, it is appropriate for all types of learners, from a child, adolescent, adult and even an elderly person. According to Condor (2016), it is a technique that improves school performance, through the use of body exercises, the same ones that help to clear the mind, increase attention, reverse cases of hyperactivity, dyslexia and behavior disorders in children. In addition, the author considers it a technique and a practical tool for learning.

Brain gymnastics has multiple benefits, according to Jaya (2018, p. 9), among which are the following: 1) It helps to effectively and creatively solve learning problems, 2) It allows to perceive reality from different or alternative points of view, which streamlines thought processes and contributes to the development of intelligence, reflective and consequential thinking, 3) Promotes anticipation of the future, when understanding cause-effect relationships, 4) Contributes to planning and projection of actions with greater degree of organization, 5) It collaborates in the discernment of the primordial from the secondary and the discovery of relationships that previously remained hidden, 6) It favors the understanding of the functioning of the universe, in order to design effective strategies to face the changing circumstances of the life, 7) It facilitates making the right decisions with greater speed and certainty, 8) It provides an improvement of the skills of the p Basic friction: memory, reasoning, attention, perception, motivation and emotion, 9) It develops intrapersonal, interpersonal, linguistic, logical, spatial, mathematical intelligence, 10) It increases brain potential in students.

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On the other hand, positive psychology is an indispensable complement for the personal development of the human being. Positive psychology is a branch of psychology that presents us with a different way of seeing life; a lifestyle in which we focus on the positive, while remaining objective, but using positive energy to our advantage, rather than wasting it on attitudes or behaviors that drain our energy and consume us. According to Tarragona (2013, p. 115), positive psychology aims to discover and promote the factors that allow individuals and communities to live fully and can be combined in a productive way with a group of therapies called "constructive therapies" that include narrative, collaborative and solution-focused therapy. This approach to positive thinking is the basis for the integral development of the human being since it promotes both physical and mental well-being and that is essential for anyone who wants to be successful in life, but it only works with the sincere and persevering will of the person who applies it and who really wants to help themselves improve.

According to Tarragona (2013, p.116) the factors that contribute to well-being are positivity, interpersonal relationships, involvement, sense of life and goals achieved. Positive psychology as part of the integral development of the human being is vital for the improvement of ADHD (Newark, et al., 2012). It is a proposal for a healthy lifestyle that ranges from eating healthy, taking care of your body and cultivating the spirit by developing universal values that help human beings improve their living conditions.

If we see each of the elements necessary to achieve human well-being that Seligman (2019) points out, they are included in the didactic methodology proposed in this study, such as: 1. Cooperative work, which contributes to generating better relationships between students; 2. Positive thinking through chat, which contributes to the formation of positive thinking; 3. Development of self-confidence that improves self-esteem; 4. Involvement, because it integrates students into experiments or activities that require concentrating on the moment; 5. Meaning, because they are taught through personal development training to discover their purpose in life; and finally, 6. Goals, because they are invited to participate in the challenge of putting into practice the methodology and the implementation of habits that will help them achieve their goals and have a balance in their life that allows them to achieve success.

In brain gymnastics and movement dynamics activities, students participate together as a single group or in pairs, which creates a pleasant and trusting environment, while strengthening relationships between them. Bisquerra and Hernández (2017) point out that

> group activities promote well-being and that research has shown that one of the main factors of well-being is social relationships. Therefore, performing group dynamics in class can promote learning and well-being (pp. 58-59).

Positive psychology can be applied in any class subject; We start from the general hypothesis that it generates a positive atmosphere in the classroom, improving the attention of the students, since it provides an atmosphere of peace, fellowship, joy; In addition, it generates that young people act as they are in front of the teacher within the limits of respect and cordiality. It is possible to improve the interest of students with ADHD in a certain subject, even if it is not pleasant for them and that, thus, is perceived and experienced by the main participants.

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# Method

## *Objectives*

The purpose of the study is to deepen the experience of a group of university students in a university education based on neuroeducation and positive psychology. Part of these students have been diagnosed with ADHD (applying the Kooij and Francken test, 2010). We are especially interested in: a) knowing their perceptions regarding the impact of the use of Brain Gym strategies and movement dynamics and b) inquiring about their experiences and perceptions regarding positive psychology practices for personal development.

## *Phenomenological method*

To cover these objectives, a qualitative methodology based on phenomenology is followed. The methodological approach emphasizes data analysis, which is characterized by focusing on describing the essences of everyday experiences. Concretely, a transcendental phenomenology is adopted. Phenomenology tries to give a direct description of our experience. According to Cresswell (2007), transcendental phenomenology is based on Duquesne's studies in phenomenological psychology. By opting for the phenomenological method following Husserl's postulates, we follow specific techniques to get to grasp the phenomenon as its meaning is through the beliefs and memories of the people who experience it. For this, as Jiménez-Cortés (2020) collects, a phenomenological reduction process is undertaken that allows us to delve deeply into the consciousness of the participating people and discover the underlying structures of a phenomenon. Thus, the key feature of phenomenological research is its rich and detailed description of the phenomenon. The analytical steps have therefore consisted of:

1. Reduction of information derived from interviews. Establishment of analysis units around the phenomenon.
2. Approach to the phenomenon from the individual perspectives of each student. To do this, a process of imaginative variation is followed, which requires seeing the phenomenon from a variety of points of view.
3. Interpretation of common patterns through a reconstruction of the phenomenon that reveals its structure and elements.

At all times, an attempt has been made to apply the bracketing or parenthesis process characteristic of phenomenology, which Husserl calls "epoche", that is, leaving one's own conceptions as investigators aside from the study of the phenomenon.

## *Participants*

A total of 43 university students are taken into account for the research, of which 22 participants are diagnosed with ADHD (15 girls and 7 boys); and 21 participants do not have an ADHD diagnosis (15 girls and 6 boys). In our work, the didactic methodology under study is developed in the subjects of English and business legislation of a private university in Honduras.

## *Instruments and data collection procedure*

The data collection is carried out from the transcendental phenomenological tradition and the information is collected through in-depth individual interviews. Each interview had an average duration of one hour per student. The interview consists of 27

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questions elaborated "ad hoc" which are oriented to the object of study; that is, how do psychopedagogical principles and practices derived from neuroeducation and positive psychology work in the lives of each of the participants. Thus, university training incorporated activities such as: practice of values, reading positive thoughts daily and reflecting on these, listening to lectures by successful people and reflecting on positive thinking videos. The interview was carried out in a place where the students felt comfortable and did not have interruptions at the time of being carried out, with prior informed consent and approval of the ethics committee of the corresponding institution. Prior to the application of the interview, a content validation was carried out through experts from the areas of methodology and diagnosis in education and psychological intervention. The interviews were conducted in the month of July 2019 and it was decided to apply it to all students, with and without ADHD for a greater depth of research. These were transcribed and the information had a qualitative analytical treatment with the help of the specialized software Atlas ti v. 7.

### *Analysis procedures and techniques*

For the coding of the information, a procedure of reading and delimitation of the units of analysis is followed. The categories arise from an inductive process and help to describe the experience of the participants. It was ensured that the categories were not of high inference, maintaining the coding "in vivo" for the genuine expression, that is, in the voices themselves, of the experiences. The category system derived from the inductive analysis process is shown below (see table 1).

Table 1
*Category system*

| Categories | Modalities |
|---|---|
| Diagnosis in ADHD | Students diagnosed with ADHD |
| | Students without ADHD diagnosis |
| Sex | Girls |
| | Boys |
| Experiences around the dynamics of Brain Gym | Impact on relaxation |
| | Impact on the activation of senses |
| | Impact on attention and concentration |
| | Performance impact |
| Experiences around the dynamics of movement | Impact on relaxation and stress |
| | Impact on attention and concentration |
| | Impact on vital energy and mood |
| | Impact on fun and personal enjoyment |
| Experiences regarding positive psychology practices | Strengthening resilience |
| | Generation of motivation |
| | Generation of positive thinking (undertake, achieve dreams ...) and change in ways of thinking |
| | Strengthening values |
| | Strengthening of self-esteem |
| | Generation of a positive attitude |

Once the initial category system was established, they were refined in a process of constant comparison and open coding. As analysis techniques, Atlas ti tools such as networks and the use of selective search tools by categories were used. In the first level coding, a content analysis was carried out where the pertinent codes and citations were

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created. In second-level coding, the existing relationships between code and code were found and the respective networks were elaborated. Afterwards, individual textual descriptions, descriptions composed of themes and a global composite description of the phenomenon were carried out. This process helped to generate a composition of the essence and structure of the phenomenon under study: the impact of the formative experience based on neuroeducational learning strategies and based on principles of positive psychology.

A control of the data collected was carried out through a log in which the pertinent annotations were made and criteria and indicators for the application of the categories were established.

Next, we show the results obtained using a phenomenological analysis approach.

**Results**

In relation to the experience around how the dynamics of Brain Gym and movement help to improve the attention in class of university students, we briefly differentiate the perceptions of students with ADHD and without ADHD:

Regarding the experience around brain gymnastics, students diagnosed with ADHD expressed the following:

a) It helps to relax: "it has helped me to relax before the exams".

b) It helps the brain to be more active and concentrate: "It helps to awaken our senses and be more active", "if it helps me because that puts the brain to work and practice it for any problem since these improve the performance of the brain", "It is a gymnastics that helps with stress and concentration, it helps me because I have checked it in class and before studying."

c) It helps to improve brain performance: "It is necessary and very good since it helps us to develop the brain and the skills we have, it helps to better develop our daily activities", "if it helps me because that puts the brain to work and practice it for any problem since these improve the performance of the brain ".

Regarding the experience around brain gymnastics in students without a diagnosis of ADHD, they expressed the following:

a) It generates relaxation: "They are exercises that help you relax and be more attentive to class because they relax your eyes, mind and body", "Brain gymnastics, even if we look half crazy I like it, because they calm me down and relax", " It is when we stimulate both sides of our brain, if I feel that it helps me and relaxes me because it relaxes my body","activation of our brain and body; it helps us relax and pay more attention in class".

a) It improves attention: "it is an activation of our body by being able to better understand something and that we better retain the information that we study or that we are doing", "it is an exercise to activate the neurons of the brain and it works, it helps me to put attention in class"," brain gymnastics and cross walking are very effective when you have to control yourself and keep one thing in mind","do exercises to oxygenate the brain, in a certain way, do a little exercising before class wakes me up if I am in a low

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mood","" it is raising our knees or dancing, because it lifts my spirits and interest, it makes me feel more enthusiastic."

b) It improves performance: "Exercising the brain every day in order to activate neurons and perform better, if it helps me because things are done calmly and better", "they are exercises that oxygenate the brain and help concentration, if it helps me a lot in the exams and when it comes to remembering important data on the subject ".

Comparing the results between both groups of students; With and without ADHD, it can be observed that the practice of brain gymnastics in the university classroom is useful for both groups, in the sense that it has a positive impact according to their perceptions. They appreciate an improvement in attention and mood improvement as well as perceive effects on the nervous system reflecting on the body, since it makes them feel relaxed. From their perception, this methodology makes it easier for them to remember and it "helps them to study."

Regarding the dynamics of movement (dances, breathing strategies ...) the students with a diagnosis of ADHD expressed:

a) They generate relaxation: "The breathing ones because they help me to oxygenate the brain and I feel more relaxed than I normally feel", "they are good and fun, they create relaxation and interests of us towards them", "the dances because I love dancing, and the brain gym since I feel that the moment we close our eyes and breathe, I feel that it relaxes me a little ".

a) They improve attention: "They are very feasible since, if they help to improve attention and relax and spend a good time with our classmates more when we did the dynamics of the dance", "it is proven that it makes us pay attention and awaken our minds"," They are good because they activate us to pay attention in class","dance, since it puts my concentration on my motor functions and activates my concentration".

b) They generate energy: "They are effective, the body receives positive vibes and that gives us energy, so we can pay more attention because it does not remove laziness."

d) They generate fun and personal enjoyment: "Dances seem fun to me and allow my brain to be a little more alert", "they are important because there are days when we feel overwhelmed and when we do this type of dynamics we have a lot of fun".

For their part, the students without a diagnosis of ADHD expressed

a) It improves concentration: "Although it seems simple, dancing helps us, since we have to concentrate on the movements and steps that follow the rhythm, our brain needs to concentrate to carry out the activity", "I like them because they make it pay attention because apart from doing basic exercises, it manages to create a dynamic and happy environment"," they are very good, they help to have people's attention and make people stay awake and not get bored","I think it is relaxing and at the same time it locates us and we focus on what we are doing. "

b) It increases spirits: "Dance dynamics raise good spirits a lot, I like them a lot because it helps to release stress", "I think it is a very good tool, keeping the body active awakens interest and the person feels more energy "," they are fun, in a way it makes us laugh and our brains wake up, it makes us have more spirits."

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c) It reduces stress: "They are good, it helps to relax and be well with oneself", "the moments when we do an activity that relaxes us", "that if they work since they relax us and without stress it is easier to concentrate".

d) It generates fun: "They are fun, in a certain way it makes us laugh and that our brain wakes up makes us have more spirits", "I think that the breathing with the feet and the crossed walking makes me pay attention, because apart from enjoying it makes that I have to coordinate between my body and brain".

In both groups similarity is also observed in the results, the mind-body connection is harmonized, generating positive results such as improved attention, mood (energy) and stress reduction.

The experiences of university students diagnosed with ADHD in terms of positive psychology practices and personal development focused on a series of perceived impacts:

a) It strengthens resilience: "It helped me because it allowed me to learn not to give up", "it has helped me to realize that I can overcome any adversity and that I have to improve in listening to others".

b) It generates motivation: "Receiving positive messages and keeping them in mind helps to lift our spirits", "as the motivational videos make me think about my future and achieve my proposed goals", "all the conferences we have had helped me to motivate myself and to think in a positive way "," motivation to be able to move on and be able to pay attention".

c) It generates positive thinking: "It has helped me to be positive, a dreamer and to want to know more", "It has generated the desire to study, to think positively, to fight for my dreams and to love and take advantage of every minute of my time", " It has helped me to be more positive and put the values into practice "," when I read positive messages it changes my way of thinking about the day and they also make me happy "," they change our negative thoughts and help us feel better "," It has helped me with my thinking as a leader and entrepreneurship"," yes, when I get up and look at the messages it motivates me to get up and face the situations that arise ".

d) It strengthens values: "improve my values and put them into practice, also fighting for my dreams, to be more responsible", "I exercise more, I can better manage my daily routine", "see the importance of values in my life, responsibility and other things that are or have great relevance in life".

e) It strengthens self-esteem: "You have to have confidence in yourself; We must not give up. We are capable of achieving what we set out to do"," yes, I must understand that I should not feel like the victim but rather victorious every time I feel overwhelmed and stressed, this has taught me to be more committed to my career "," how to be a better person as it has taught me to be a more independent woman than believing in me."

Regarding the results of the experiences of university students without a diagnosis of ADHD in relation to positive psychology practices applied in the classroom, the following aspects are extracted:

a) It helps with motivation: "Honestly, they do help because that way I feel motivated to continue growing every day", "they help me to motivate myself and expel bad thoughts and change them into happy thoughts", "because at some point in life, I have difficulties, so with motivational lectures they encourage me to be motivated, so that I

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can overcome those difficulties ","" it is a very beautiful and positive class where I have learned a lot from class and from life ".

a) It generates a positive attitude: "Perseverance and always a positive attitude no matter how difficult and expensive it is, I know that if I set my mind to something I will achieve it", "to smile regardless of all the difficulties that happen in my life", "to see the positive side of problems, always be positive"," in this class I learned how to study and that has helped me in the rest of the classes"," when I am stressed in other classes I repeat the positive phrases of the English class" , "I use the positive thing we do in class to improve every day as a person."

c) It generates a change of thought: "It has generated positive thoughts about how to move forward, about all the good things that await me on the road if I do things well every day", "I had not done anything productive, I only thought negative things, then over time that was changing, "I have learned to be more positive and to be able to organize everything at the time of doing work", "being positive has always helped me because it is motivating and clears bad thoughts", "listening to staff who have I really liked being successful, it is a clear example of perseverance ".

e) It improves self-esteem: "Make it more reliable to believe in myself and that I am capable of achieving everything that I propose", "It has helped me a lot, when I feel that I can not I remember the positive affirmations and also in the way of how to organize each content of my classes ".

Comparing both groups, similarity is observed in terms of generating change for improvement in thinking, attitude, mood and self-esteem, it can be observed the strengthening of values such as responsibility, self-esteem, motivation and positive attitude, which helps to improve comprehensive of the human being.

## Discussion and Conclusions

The phenomenological perspective allows to deepen the experiences lived in university education from an inclusive perspective, that is, from the point of view of the contribution for all. According to the phenomenology, the analysis undertaken allows us to register the imaginative variations in a double sense, on the one hand, the individual intragroup experiences (students with ADHD diagnosis) and on the other, the intergroup experiences (students with and without ADHD diagnosis. Without these perspectives, the essence of the phenomenon we are considering cannot be understood. By focusing on the lived meanings of the didactic experience, the results show that both students with ADHD and students without ADHD perceive themselves as benefiting from the teaching-learning strategies that were put into practice as the basis of this research and that use an alternative university training from a neuroeducational approach.

The results of this work highlight the value that university students give to the employment by teachers of other alternative methodologies, as Moriña, et al. (2015b) in their work, who show that the students recommend that the teaching staff be updated and use methodologies other than the lecture. However, there are studies such as that by Van Dijk and Lane (2020) that are very critical of the approaches to a university education based on this type of neuroeducational strategies. Especially because teachers are often infused with a series of neuromyths that can be a problem not only at the classroom teacher level but also at a structural level (educational system, leaders, curriculum ...) as

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a widespread problem that justifies a more in-depth examination of this topic from neurology in education.

As contributions such as that of Carriedo (2014) have shown, the point of interest for neuroeducation is physical activity, which according to the researchers can bring about a general improvement of cognitive functions, greater self-esteem, and benefit people diagnosed with ADHD, anxiety, or depression. In our study, the experiences of students with both ADHD and without ADHD converge to mean that the didactic experience as relaxing also helps them remember information, improve attitude, concentration, helps the brain to be more active, as they recognize with their own words. However, the perception of the experience in these terms does not guarantee that they are actually taking place, and it is that, as De Vos (2016) considers, the behavioral study is key to continue advancing in the educational area and in the understanding of the processes of teaching and learning so that neurosciences contribute practical knowledge to the educational area. Regarding the dynamics of movement, it is concluded that students with ADHD consider that they improve attention, generate energy and encouragement, relaxation and fun compared to the opinions of students without ADHD. There are those who consider that it improves concentration, increases spirits and reduces stress. It can be concluded that both groups consider that it helps them improve attention or concentration, increases their spirits and reduces stress. Regarding positive psychology practices around personal development experiences, students with ADHD experienced the following; generates positive attitude, helps resilience, generates motivation, change of thought and greater self-confidence compared to the opinions of students without ADHD; generates a positive attitude, helps motivation and generates a change of thought. It is observed that both groups consider that it generates a positive attitude, motivation and generates a change of thought. These themes constitute the essence of the phenomenon.

With the results presented, we can affirm that the strategies used in this research are perceived as viable, both for students with ADHD and for students without ADHD, but they require training and strategic planning to carry it out in university education. The results are positive, for a university education related to the educational inclusion sensitive to students who have ADHD. The results are also positive due to its impact on personal growth, ultimately affecting their lifestyles.

The limitations of the study mainly point to the consideration of research methodologies that incorporate interdisciplinarity in their neuroscientific dimension. Also the incorporation in the study of the teachers' beliefs about the potentialities of neuroeducation, making a holistic analysis of the confluence between the design of the didactic intervention, the beliefs and expectations of the teachers around these practices and the experiences of the students, and the incorporation of the gender perspective in the analysis and interpretation of results that have not been contemplated in this contribution. So far, neuroeducational approaches are subject to the need for greater experimentation and a combination of research methodologies that allow deepening from different disciplines and provide validated knowledge in a mixed way. As future lines, we also point to the consideration of other key factors to assess the effectiveness of the didactic methodological proposal, such as academic performance in the subjects in which it is used.

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# TEACHERS WORKING IN DISTANCE EDUCATION: AN ANALYSIS OF THE RIGHTS CONTEMPLATED IN THE CLT

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**Abstract.** The purpose of this article was to investigate the context of teachers in Distance Education -EaD and its limitations with regard: to the career plan and other aids that are relevant to distance work. The central objective is delimited when analyzing the degree of recognition of an EaD teacher by the institutions that hire them, the remuneration and the working hours, which are submitted to the demands of the market. This research is based on the quantitative approach, used for medium and large collections. The research field takes place in the Northeast and Southeast regions of Brazil. And the subjects of the research were 150 teachers, who work in public and/or private institutions, of higher education and/or basic education, and are hired or appointed in the distance learning modality. The research instrument: it was through a questionnaire, published on the Google Forms platform and had six objective questions. Data analysis: Excel and SPSS (Statistical Package for the Social Sciences) software were used as an instrument of organization, data tabulation and graph production. The ethical aspects of the research met the assumptions of resolution 196/96 of the National Health Council. Results: It is concluded that distance education teachers still need recognition, regarding: public and educational policies, as a category and rights. Emphasizing: a career plan consistent with the function, continuing education and technological resources for distance work.

**Key words:** Teachers, distance education, remuneration, and working hours.

# DOCENTES QUE TRABAJAN EN EDUCACIÓN A DISTANCIA: UN ANÁLISIS DE LOS DERECHOS CONTEMPLADOS EN EL CLT

**Resumen.** El propósito de este artículo fue investigar el contexto de los docentes en educación a distancia -EaD y sus limitaciones con respecto al plan de carrera y otras ayudas que son relevantes para el trabajo a distancia. El objetivo central se delimita: analizar el grado de reconocimiento de un maestro de EaD por parte de las instituciones que lo contratan, la remuneración y las horas de trabajo, que se someten a las demandas del mercado. Esta investigación se basa en el enfoque cuantitativo, utilizado para colecciones medianas y grandes. El campo de investigación se lleva a cabo en las regiones del noreste y sudeste de Brasil. Y los sujetos de la investigación fueron 150 docentes, que trabajan en instituciones públicas y / o privadas, de educación superior y / o educación básica, y son contratados o nombrados en la modalidad de educación a distancia. El instrumento de investigación: fue a través de un cuestionario, publicado en la plataforma Google Forms y tenía seis preguntas objetivas. Análisis de datos: se utilizaron los programas Excel y SPSS (paquete estadístico para las ciencias sociales) como instrumento de organización, tabulación de datos y producción de gráficos. Los aspectos éticos de la investigación cumplieron con los supuestos de la resolución 196/96 del Consejo Nacional de Salud. Resultados: Se concluye que, los maestros de educación a distancia, aún necesitan reconocimiento, con respecto a: políticas públicas y educativas, como categoría y derechos. Enfatizando: un plan de carrera consistente con la función, educación continua y recursos tecnológicos para el trabajo a distancia.

**Palabras claves:** docentes, educación a distancia, remuneración y jornada laboral.

# OS PROFESSORES QUE ATUAM NA EAD: UMA ANÁLISE DOS DIREITOS CONTEMPLADOS NA CLT

**Resumo.** O presente artigo teve por finalidade investigar o contexto dos professores da educação a distância-EaD e suas limitações no que se refere: ao plano de carreira e outros auxílios que são pertinentes ao trabalho a distância. O objetivo central se delimita: analisar o grau de reconhecimento de um professor EaD pelas instituições que os contratam, a remuneração e a jornada de trabalho, que se submetem às exigências do mercado. Esta pesquisa está alicerçada na abordagem quantitativa utilizada para coletas de médio e grande porte. O campo de investigação se dá nas regiões Nordeste e Sudeste do Brasil. E os sujeitos da pesquisa foram 150 professores, que atuam em instituições públicas e/ou privadas, de ensino superior e/ou educação básica, e estejam contratados ou nomeados na modalidade EaD. O instrumento de pesquisa foi por meio de um questionário, publicado na plataforma Google Forms e contou com seis questões objetivas. A análise de dados: utilizou-se os softwares Excel e SPSS (Statistical Package for the Social Sciences) como instrumento de organização, tabulação dos dados e produção de gráficos. Os aspectos éticos da pesquisa atenderam aos pressupostos da resolução 196/96 do Conselho Nacional de Saúde. Resultados: Conclui-se que os professores EaD ainda necessitam de reconhecimento no que se refere, às políticas públicas e educacionais, enquanto categoria e direitos. Ressaltando um plano de carreira condizente com a função, formação continuada e recursos tecnológicos para o trabalho a distância.

**Palavras-Chave:** Professores, EaD, remuneração e jornada de trabalho.

## Introduction

The most remote records of an experience of distance education - EaD, according to Nunes (2009, p.02), occurred in 1728, by an institution in Boston (USA), which offered shorthand classes (technique to improve the speed of writing) by correspondence and were taught by Caleb Philips. All this in a very spontaneous way and without any official recognition or much personalization.

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The same author (2009, p.2-6) continues with the literature and reports an offer of shorthand courses in Great Britain in 1840, conceived by Isaac Pitman; in 1979, courses on safety in mines were offered in the United States, organized by Thomas J. Foster; in the same year, Cuba creates a faculty of education directed by the University of Havana. Foster; in the same year, Cuba created the faculty of education directed by the University of Havana; in 1973, Canada created a pilot project at Athabasca University with the use of intensive tutoring through telephones; in 1910, in Australia, the University Extension Center was created at the University of Queensland, St. Lucia, with blended learning courses. In 1951, a correspondence education department of the People's University was created in China; in 1930, Japan created informal correspondence courses sent by mail; in 1930, Russia initiated correspondence and broadcasting courses to qualify rural workers and improve workers; in 1969, the Open University was created in England and was the exponent in EaD for other universities; in 1972, Spain created its first distance university, using printed materials, broadcasting and television; and in 1988, the Open University of Portugal was created.

Next, the milestone of EaD in Brazil, according to Alves (2009, p.09), was in 1900, in the city of Rio de Janeiro, where the offer of typing courses by correspondence and/or private lessons was advertised in newspapers and brochures. Soon, it became a highlight in the Brazilian capital and the expansion of the repertoire was necessary to qualify professionals in different productive activities.

Costa (2012, p.281) reiterates that in 1923, there was the creation of the Rádio Sociedade do Rio de Janeiro, founded by Edgar Roquette-Pinto, which offered distance or blended courses, and were made available through radio broadcasting. Alves (2009, p.09) points out that, over time, other institutions joined the media, such as the Radio-Postal School, the Voice of Prophecy (of the Adventist Church) in 1943, Senac in 1946, the University of the Air in 1950 (with services in 318 localities), then the Mobral Project, Educational TV in 1960 and the arrival of computers in Brazil, by universities in 1970; until the era of personal computers, with the Internet in homes and educational establishments.

The same author (2009, p.11) highlights the milestone of Brazilian legislation in EaD, starting with the Law of Guidelines and Bases of National Education - LDB of 1961, with subsequent updating in 1996:

> The first legislation addressing this modality is the LDB, whose origins date back to 1961. Its reform, ten years later, introduced a specific chapter on supplementary education, stating that it could be used in the classroom or through the use of radio, television, postal mail, and other media. In 1996, the country had a new LDB, and EaD became possible at all levels. It was a great advance, since it unequivocally allowed the operation of undergraduate and graduate courses, as well as in basic education, from elementary to high school, in the regular modality, as well as in youth and adult education and special education. The law had the great virtue of indirectly admitting free distance courses, including those offered by the so-called "corporate universities" and other educational groups.

Checking the legislation of EaD, on the website of the Brazilian Association of Distance Education - ABED (2020), it was found that:

> In Brazil, the legal bases for distance education were established by the Law of Guidelines and Bases of National Education (Law No. 9.394, of December

20, 1996), which was regulated by Decree No. 5.622, published in the D.O.U. of December 20, 2005 (which repealed Decree No. 2494 of February 10, 1998 and Decree No. 2561 of April 10, 1998) with the regulation defined in Ministerial Ordinance No. 4.361 of 2004 (which repealed Ministerial Ordinance No. 301 of April 7, 1998). On April 3, 2001, Resolution No. 1 of the National Education Council established the norms for graduate courses sensu lato and stricto.

Thus, over the years, laws, rulings, ordinances, and decrees were published that progressively legitimized the EaD as a teaching modality that were published in recent years. We cite the Normative Ordinance No. 11, of June 20, 2017, on the creation, organization, accreditation, offer, and development of distance courses. The Opinion of the National Council of Education - CNE CES No. 462/2017, on the rules of operation of strict postgraduate courses; and Ordinance No. 2117, of December 6, 2019 which, regulates the workload of the EaD.

In this process, EaD has grown considerably in all areas and, consequently, its complexities (of meeting students' desires, teaching quality, teachers' working conditions, interactions, and vital technological tools), are challenges for Brazilian education and possible actions in public policies.

In this scenario, ABED releases the 2018 EaD Census with the following percentages (see Figure 1 below).
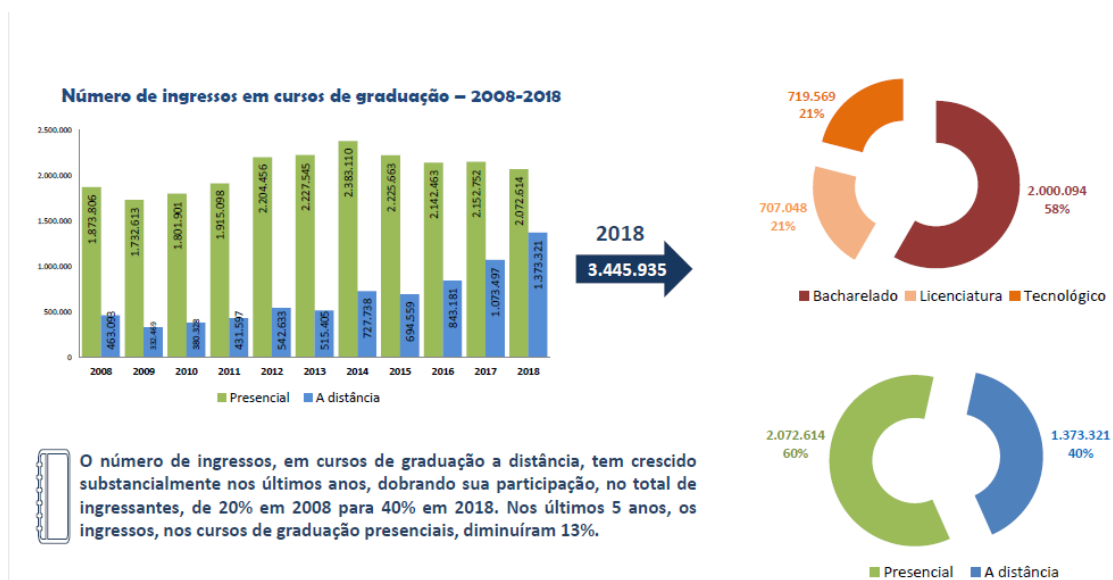


*Figure 1:* Number of enrollments in degree courses of 2014 - 2018.

*Note:* Source: MEC/Inep; Higher Education Census (2018, p.18).

In this perspective, EaD and information and communication technologies - ICTs, have been fundamental tools in times of crisis, for education, in times of pandemic, such as the one experienced at the time of the Coronavirus (Covid-19), where institutions reinvent themselves in virtual spaces, overcoming the walls of educational institutions that, until now was a face-to-face relationship.

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However, all educational institutions, worldwide, have used ICTs to solve the problem of confinement, teaching classes through platforms and software, which reinforce this virtual reality that is being investigated, using web classes, podcasts, discussion forums, portfolios, chats, among others.

Thus, this article originated in the discussions in the teachers' room about EaD, their concerns, rights, duties, advantages, and labor disadvantages of this "new category," which emerged with overwhelming force in educational institutions, covering the entire Brazilian territory.

On the other hand, the epistemological option to address this question arises from the need to know the professional working in EaD: the level of training, the work schedule, the remuneration, the level of knowledge and mastery of information technology, and their willingness to use technological tools.

In view of the above, some questions are posed to the discussion: Who are the professionals working in EaD? How is their career plan and remuneration organized? What about the working day? The level of knowledge of teachers? The level of education? Are they coherent with their role?

Therefore, the objective of this research is to analyze the rights, advantages, and disadvantages contemplated in the Consolidation of Labor Laws.

## Methodology

In the present research, the use of the quantitative method was considered appropriate, used for medium and large collections of information, which require an analysis of variables. Supported by the referential of Fonseca (2002, p. 20) that, when the research has the need to verify a particular reality with large populations, this is the most appropriate method to have with objectivity, a real portrait of the object.

Taking the EaD teacher and his or her remuneration as the object of research, as a basis for the achievement of the objectives, this research sought, through the application of a questionnaire, to know the reality of teachers working in this modality and their needs in relation to the career plan, remuneration, working hours, and level of knowledge in computer science.

Given the above, it is considered as a hypothesis to investigate the degree of recognition of an EaD teacher by the institutions that hire them, the remuneration and working hours, to which they are subjected and the requirements of the institution, can contribute to a discussion that produces a possible change in this context producing the valuation of the professional who works in the same.

### Sample

The sample was randomly composed of 150 teachers. As for the selection, it was focused on teachers working in public and/or private institutions of higher education and/or basic education, hired, or appointed in the EaD modality in the Northeast and Southeast regions of Brazil. The forms of contact with the teachers of the institutions were made through pedagogical departments, course coordinators, course secretaries, e-mails provided by the institutions, social networks, visits to institutions near the locations of the researchers, telephone contacts among others, and thus making official the invitation to participate in this research.

Since it is a sample with a significant territorial coverage, the first step was to send the form with the research tools, such as a questionnaire, a letter of invitation from the researchers, explaining the project, the objectives, the variables, the expected results, and an informed consent form to the departments and course coordinators of the contacted institutions: universities, colleges, and schools.

Through this first contact, we were provided with the e-mail addresses of the teachers, the submission of an explanatory e-mail, with a link to the questionnaire and informed consent to be answered electronically.

### Research instrument

An *ad hoc* questionnaire published on the *Google Forms* platform was used, consisting of six questions: Level of education? Do you work in an institution (public or private)? Monthly income in the EaD modality? Weekly hours of work in the modality? What is your level of computer literacy? What tools do you use in your classes and/or in day care?

### Data Analysis

For the analysis of the suggested questionnaire, Excel and SPSS (Statistical Package for the Social Sciences) software were used as an instrument to organize and tabulate the data; once analyzed quantitatively, graphs were prepared to learn about the reality of the teachers working in this modality and their needs in terms of career plan, remuneration, work schedule, as well as the level of computer literacy, since they are EaD teachers.

### Ethical aspects of research

The research followed all the determinations related to the ethical aspects of research, according to Resolution 196/96 of the CNS, Ministry of Health. The anonymity and confidentiality of all material collected, whether in the form of text, image, or voice, was guaranteed.

Only the researchers had access to the material. None of the participants had any financial costs with the research, there were no physical risks to participants, and respondents were guaranteed the freedom to refuse to participate or to withdraw their consent at any stage of the research without penalty or prejudice.

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**Results**

It is hoped that this research will provide insight into the different realities of teachers working in EaD, characterizing them by the institutions to which they belong to, their level of training, monthly remuneration, working hours, and their level of computer literacy.

In the process, it was analyzed that among the 150 invited professors; 56% are professors from private institutions. As shown below in Figure 2.
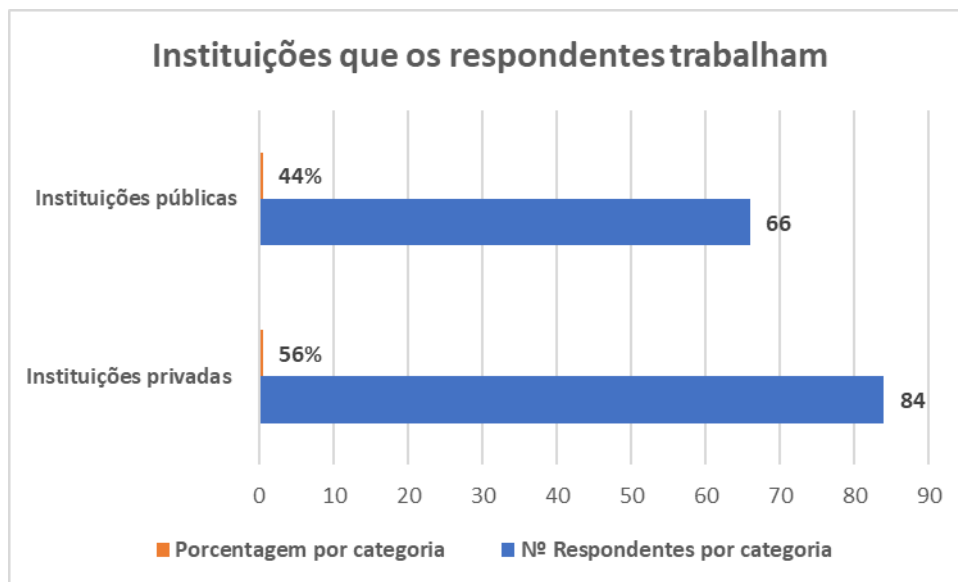


*Figure 2.* Institutions for which respondents work
*Note:* Source (the author)

Taking into account the above, a reasonable balance between teachers from private and public institutions is considered.

***Level of teacher training***

In the context, when analyzing the level of training of the EaD professors, most of them are at the specialization level, accounting for 35.33% of the total number of guest professors (see Figure 3 below).
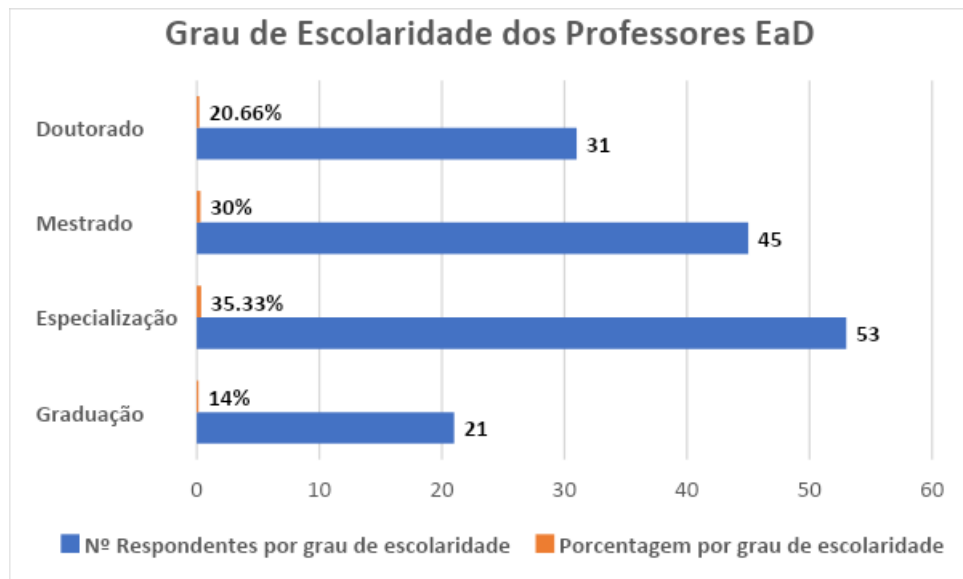
*Figure 3.* Institutions for which respondents work
*Note:* Source (the author)

In comparison with the data collected by researchers, the latest Higher Education Census, "Docentes em exercício, na educação superior, por grau de formação" - Brasil 2008-2018, apud MEC/INEP (2018, p.65), verified that the degree of schooling of teachers, in exercise in higher education, mostly have a doctoral degree (see Figure 4 below).
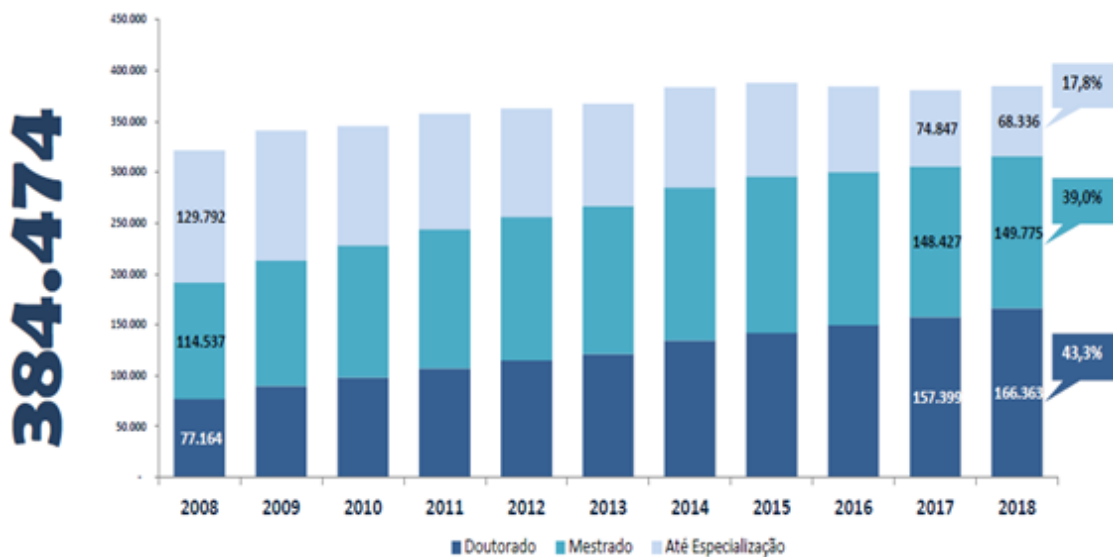


*Figure 4.* Higher education teachers, by level of education - Brazil 2008-2018

*Note:* Source: MEC/Inep; Higher Education Census (2018, p.65).

In this perspective, Nicolini; Torres; Macedo & Câmara (2014, p.08), consider the teaching professor and/or doctor, a high performance researcher in terms of continuous, academic training and their improvement in the practice of teaching.
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Thus, the continuous training and improvement of teachers is one of the necessary factors for the quality of teaching and the promotion of research and innovation.

Nóvoa (1997, p.28) states that teacher training starts with:

> (...) not only with the knowledge and theories learned in schools, but with the teaching practice of all his former teachers and other people, things and situations with whom he interacts in teaching situations throughout his life.

Thus, the teacher is seen as an inventor, an explorer of new tools, a student of the entire educational process, from initial training, teaching practices, lesson planning, teaching materials, technological tools, methodology, pedagogical practices, evaluation instruments, discussion, and studies among teachers, as well as interventions made in the classroom or in the EVA.

However, this is a reality, although not consolidated, in EaD. In the first place, because the remuneration is not consistent with the training of a master's or doctoral teacher, but corresponds to the value of a full position in basic education, still depending on the educational institution and the region.

Thus, Mill (2006, p.96) points out that EaD is between the paradoxes of flexibilization versus the precariousness of teaching work, work overload versus teleworking, lack of continuous training, and low remuneration.

### *Remuneration of EaD teachers*

According to França (2008, p.101-104), working relationships in EaD are precarious, compartmentalized, merely made of tasks, depreciating the intellectual role of the teacher, from his career plan, remuneration, working hours, lack of supervision by the competent bodies, as well as representativeness (unions and verification commissions).

From this perspective, the respondents' remuneration is analyzed below in Figure 5.
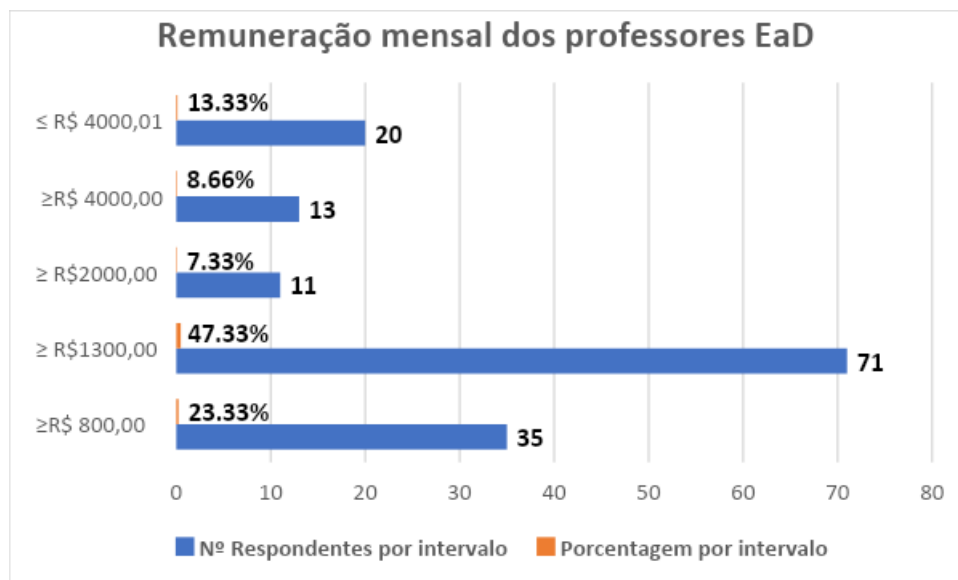


*Figure 5.* Institutions for which respondents work

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In the process, it was possible to realize that teachers are remunerated in different ways under the federal system, following CAPES Ordinance No. 15, dated January 23, 2017, remunerating professionals under scholarships, by positions held, such as tutors, formative teachers, and content teachers, in a minimum amount of R$ 765.00 for tutors and a maximum amount of R$ 1,300.00 for formative I teachers and content I teachers.

At the federal level, there is also the possibility for professors admitted as teachers to teach classes or hold management positions in Distance Education Centers to supplement their workload or perform extra activities (outside their working hours).

As for private institutions, it is observed that some institutions use their own face-to-face teaching professor to "monitor" the virtual learning environment - VLE, other institutions hire a professional, in the position of tutor or monitor to work in EaD, but with a face-to-face working day, from 30h to 40h per week. There are also work schedules with division of hours in face-to-face and distance.

Another relevant factor is in relation to the remuneration of teachers and the existence of contracts, as "service providers" in the form of individual micro-entrepreneurs - MEI.

For Veloso & Mill (2018, p. 120), this form of "contracting" is a fragmentation of teaching work, tending to an exploitation of workers with a large number of students, reinforcing the de-professionalization of the category and the lack of labor links with the institutions.

The same authors (2018, p.121), in a research on precarity of teaching work in EaD, with 677 teachers, found that 384 of them (56.72%) do not have any labor ties with the institutions. As shown in Figure 6 below.
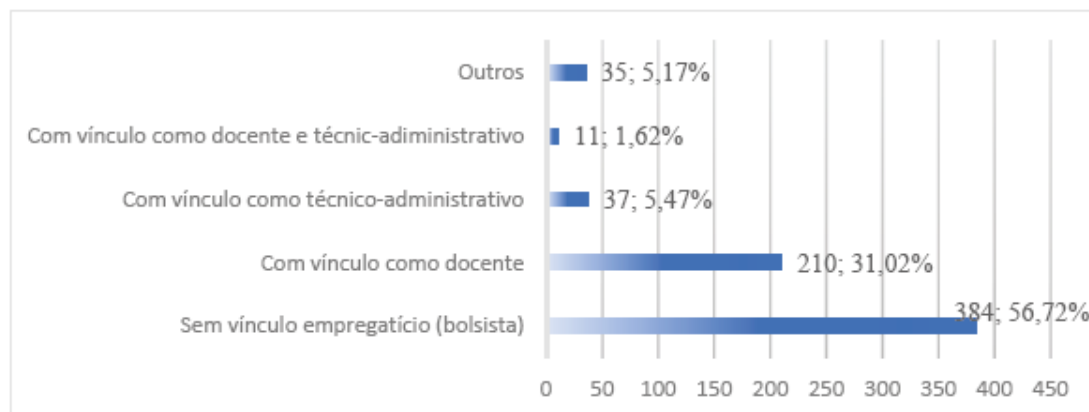


*Figure 6.* Types of links established between universities and faculty.
*Note:* Source: Veloso & Mill (2018, p.121).

In the process, Veloso & Mill (2018, p.122) state that tutor teachers only have contact with students and do not participate in the process of content construction and logistics of virtual environments. In addition, they analyze that 104 of the respondents

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(75.36%) fit into the profile of "no employment relationship (scholar)." As shown in Figure 7 below.



*Figure 7.* Types of links established between universities and respondents who only have experience as virtual teacher-tutors.

*Note:* Source: Veloso & Mill (2018, p.122).

The research continues with the types of links established between the universities and the respondents who only have experience as *face-to-face* teacher-tutors. And again it was found that 58 respondents (86.57%) fit into the "no employment relationship (fellow)" profile. As shown below in Figure 8.
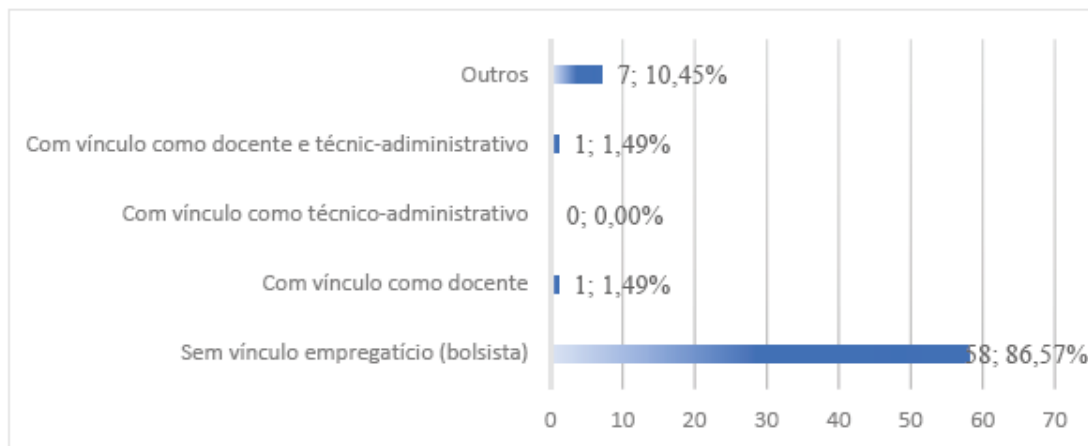


*Figure 8.* Types of links established between universities and respondents who only have experience as face-to-face teacher-tutors.

*Note:* Source: Veloso & Mill (2018, p.122).

In the process, the authors (2018, p.124) investigate about the types of links established between universities and respondents who have experience only as *teacher-authors/content writers*. Moreover, it was found that 07 respondents (28%) fit into the

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profile "no working relationship (scholar)" and 16 respondents (64%) have link as a teacher. As shown below in Figure 9.
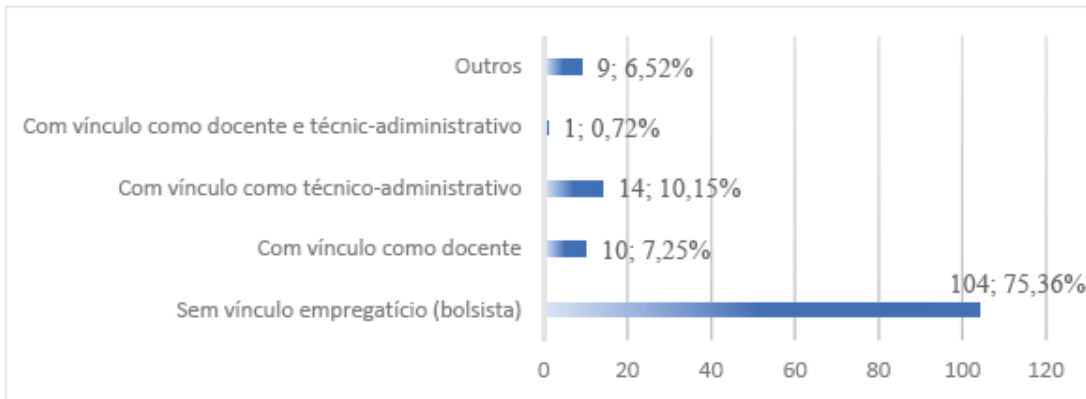


*Figure 9.* Types of links established between universities and respondents who only have experience as teacher-authors/content writers.

*Note:* Source: Veloso & Mill (2018, p.124).

Finally, Veloso & Mill (2018, p.124) sought to know the types of links established between universities and respondents who have experience only as teacher-trainer-trainer/applicators. Moreover, they found that 12 respondents (27.91%) fit the profile "no employment relationship (trainee)" and 27 respondents (62.79%) fit the profile "with link as a teacher." As shown below in Figure 10.



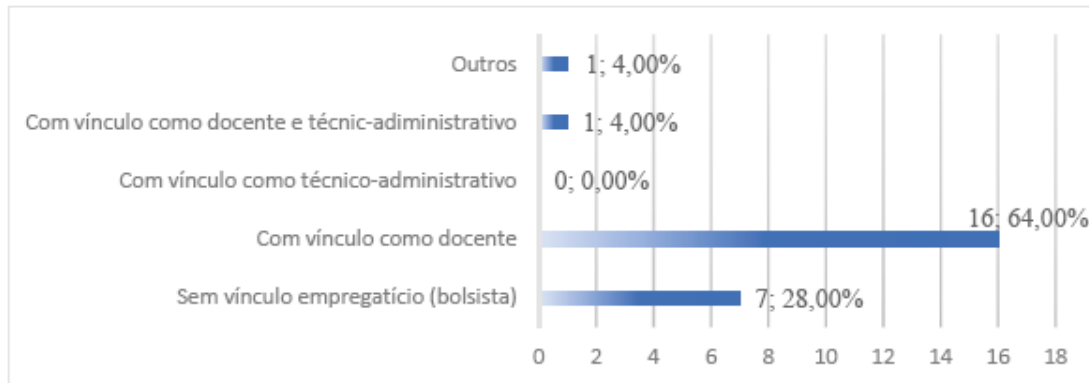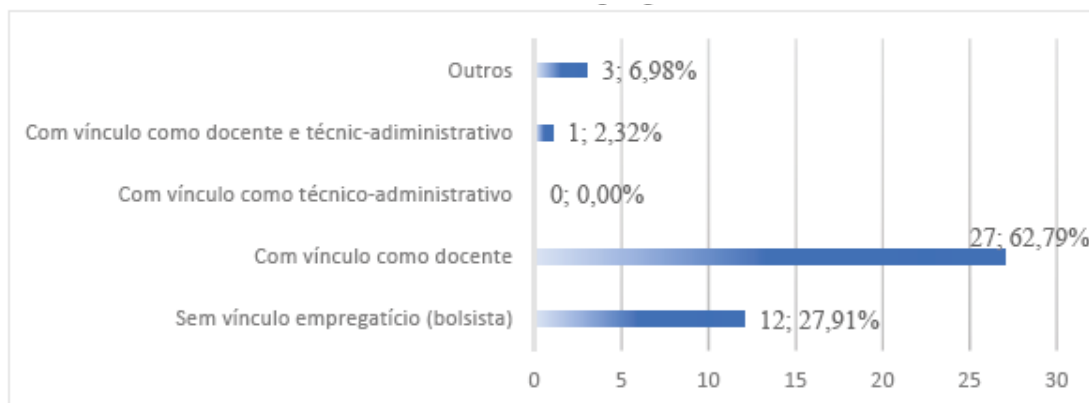*Figure 10.* Types of links established between universities and respondents who only have experience as teacher-educator/applicator trainers.

*Note:* Source: Veloso & Mill (2018, p.124).

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In the context, there are institutions that hire teachers by the format of "teleworking" that, according to the Consolidation of Labor Laws - CLT (2017, p. 29), in Chapter II, specifically in Article 75-B:

> Teleworking is considered the provision of services mainly outside the employer's premises, with the use of information and communication technologies that, by their nature, do not constitute outside work.

According to Mill (2006 p. 152), labor relations in EaD are precarious and affect several agencies, such as:

> (...) telecommuting makes explicit the problems of work organization: new systems of remuneration, new systems of work control, new occupational diseases or ailments, unilateral responsibility of employees, and even suppression of salaried positions in favor of independent workers. Moreover, teleworking does not contribute to job creation and may even act as a factor in the disappearance of available jobs.

However, when analyzing Article 75-B and the statements of Mill (2006. p.152), it is understood that there is a change of category between the "teacher" and the "teleworker." This means that the individual loses all his or her rights in terms of the career plan of an education professional, as well as other work organization issues.

### EaD teachers' working hours

Considering the data on EaD teachers' remuneration, this research also sought to know the working hours. As shown below in Figure 11.
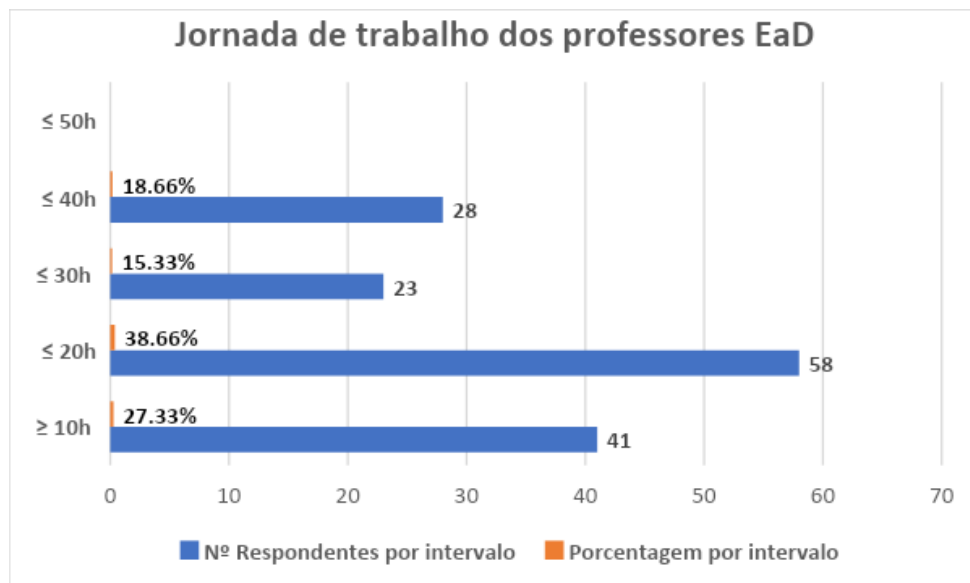


*Figure 11.* Institutions for which respondents work

*Note:* Source (the author)

As presented above, there is no standardization of how EaD teachers are paid, as well as their working hours. However, it can be observed that most of the responding teachers are in the ranges of ≤ 20 hours per week.

In the same perspective, Veloso & Mil (2018, p. 125), in their research "The precariousness of teaching work in distance education: elements to think about the valuation of virtual teaching" verified that "(...) the majority of respondents, i.e. 248, work between 16 and 20 hours per week. There is also a considerable number of teachers who dedicate up to 15 hours per week to EaD functions." As shown below in Figure 12.
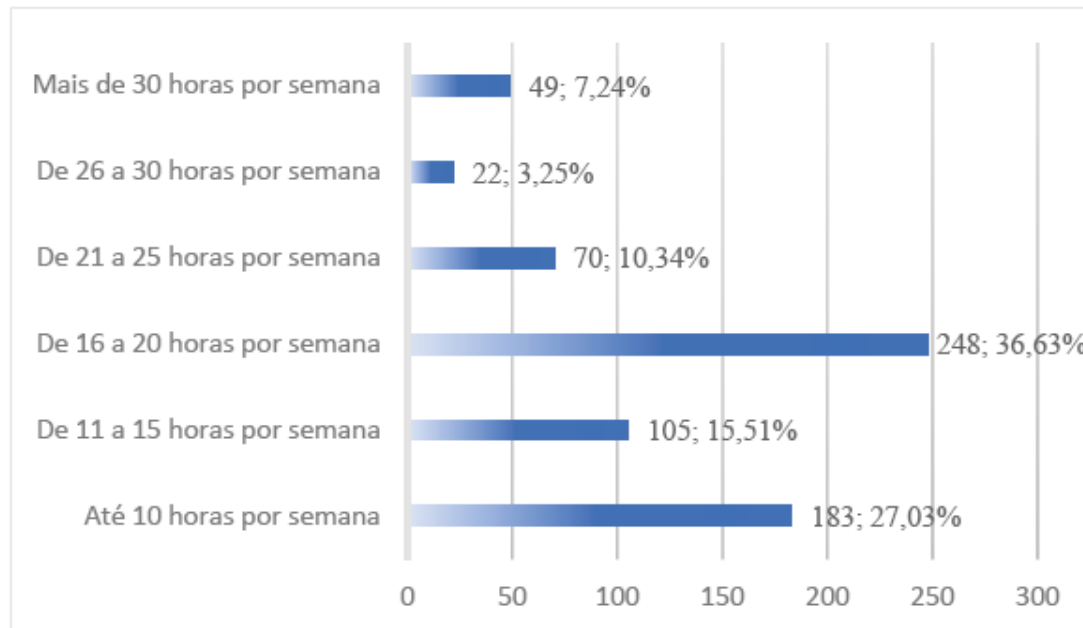


*Figure 12.* Weekly workload dedicated exclusively to EaD activities.
*Note:* Source: Veloso & Mill (2018, p.125).

Another relevant point in this research, highlighted by Siqueira (2014, p. 103), in his master's thesis, is the existence of a lack of demarcation between work time and rest time:

> The Occupation and Leisure Time dimension stood out, among the other dimensions, due to the importance and challenges of finding a balance point between the demands of work and the private life of the worker. During the focus group interviews, it became clear how difficult it is for distance education professionals to work with time management. It is noted that, in general, only 30% of respondents are able to set aside work hours to respond to emails and student questions and, when away from work, make time to spend with family and friends.

Mill (2006 p.96), in his doctoral thesis, exposes the perception of tutor teachers in the face of work overload:

> (...) observed that there are some unpleasant aspects of working in distance education, and most of them focus on work overload, either from the perspective of excessive activities, the amount of time paid to perform such

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activities, the high number of students or class size, the low value of the class-hour, or other splits of work overload.

In the process, the same author (2006, p.97) describes the development of activities and mastery of technologies, as well as the wide range of competencies of EaD teachers, from Figure 13 below.

| | | |
|---|---|---|
| 1. Aberto ao novo | 33. Desafiador | 65. Multidisciplinar |
| 2. Adaptável | 34. Determinado | 66. Objetivo |
| 3. Ágil | 35. Dinâmico | 67. Observador |
| 4. Argumentador | 36. Disciplinado | 68. Organizado |
| 5. Articulador | 37. Disponível | 69. Organizador |
| 6. Atento | 38. Disposto | 70. Paciente |
| 7. Ativo | 39. Elaborador | 71. Participativo |
| 8. Autogestor da formação | 40. Empático | 72. Pensador |
| 9. Bem-humorado | 41. Empreendedor | 73. Perseverante |
| 10. Carismático | 42. Escritor | 74. Persuasivo |
| 11. Cauteloso | 43. Estimulado | 75. Pesquisador |
| 12. Cientista | 44. Estimulador | 76. Planejador |
| 13. Claro | 45. Ético | 77. Polivalente |
| 14. Coerente | 46. Experiente | 78. Pontual |
| 15. Coeso | 47. Flexível | 79. Prático |
| 16. Colaborador | 48. Gentil | 80. Proativo |
| 17. Competente | 49. Gestor | 81. Professor, bom |
| 18. Compreensivo | 50. Gramático e ortográfico | 82. Profissional |
| 19. Comunicador | 51. Hábil | 83. Rápido |
| 20. Concentrado | 52. Humano | 84. Receptivo |
| 21. Conhecedor (alunos, conteúdos, colegas) | 53. Inovador | 85. Redator, bom |
| | 54. Interativo | 86. Reflexivo |
| 22. Conseqüente | 55. Interessado | 87. Relacionável |
| 23. Cooperativo | 56. Intuitivo | 88. Respeitado |
| 24. Cordial | 57. Leitor dinâmico | 89. Respeitador |
| 25. Corretivo | 58. Letrado em informática | 90. Respeitável |
| 26. Correto | 59. Letrado em tecnologias da EaD | 91. Responsável |
| 27. Cortez | | 92. Sábio ou sabedor |
| 28. Crente na EaD | 60. Letrado em telecomunicações | 93. Sensível |
| 29. Criativo | | 94. Sinérgico |
| 30. Crítico | 61. Líder | 95. Sociável |
| 31. Curioso | 62. Mediador | 96. Tolerante |
| 32. Debatedor | 63. Motivado | 97. Trabalhador |
| | 64. Motivador | |

*Figure 13.* List of desired competencies for teaching work.
*Note:* Source: Mill (2006, p.93)

Therefore, we highlight Mill's (2006, p. 214) considerations on the working conditions of EaD teachers:

- High workload and double workday (in the case of women, it is a third workday, since household chores already take the place of a second workday).
- High number of students per teacher, ranging from 15 to 200 students for an average workload of 10 to 20 hours per week.
- Teleworking tends to be done at night or during free time off, because it is considered "botched," "temporary" or a supplementary source of income for the family group.
- Employment contracts in EaD, when they exist, are vague, temporary, part-time, sometimes paid in the form of scholarships (which avoids the creation of an employment relationship and waives the obligation to benefits such as the 13th salary).

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The same author (2006, p. 214) highlights some of the vulnerabilities regarding the working conditions of EaD teachers:

- Wage income is, on average, low for a household's main source of income, in addition to the problems inherent in receiving wages in the form of scholarships, both for study and work.
- There is a lack of concern for the worker's expenses with equipment and services (electricity, Internet connection, etc.), which generates inadequate working conditions (e.g. inadequate furniture and spaces).
- The spaces and times dedicated to work are flexible according to responsibility, autonomy, and various needs: part-time work, work carried out in reproduction time, in the family space, in rest time, paid for an hourly workload lower than that negotiated in the contract.
- The teleworking teacher has difficulty managing his or her own time and workspace in the context of family and private life, which converts rest and leisure time and space into work time and place. The resulting dangers to personal and family health are ignored.
- There is a lack of information and support for guidance (from trade union associations, for example) regarding the rights and duties specific to teleworking. In addition, there is also a struggle for more appropriate legislation and guidance to empower teleworkers with respect to their rights.

However, the working conditions of teachers are precarious, which forces them to develop parallel activities. Which Veloso and Mill (2018, p. 126) analyzed in their research: "(...) 638 participants, which is equivalent to 94.24% of the respondents, said to exercise some other type of paid activity in parallel to the work with EaD". As shown below in Figure 14.
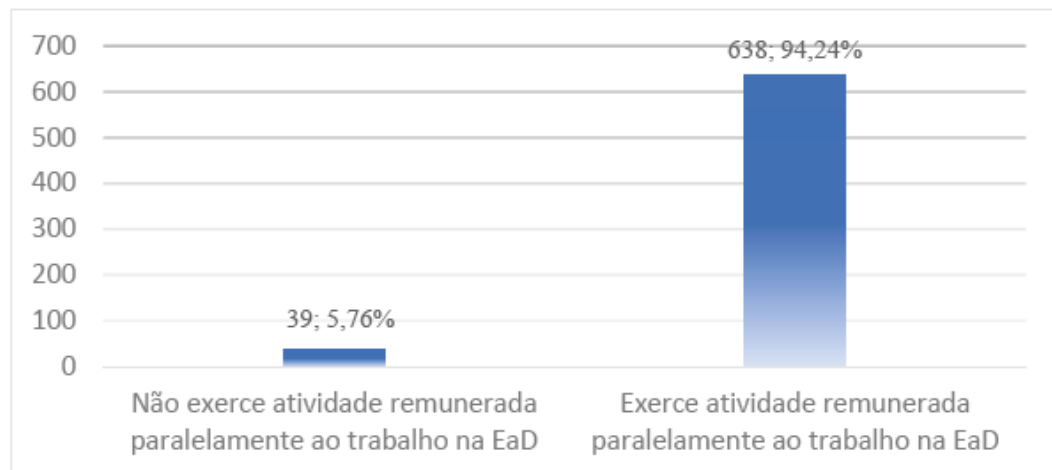


*Figure 14.* Weekly workload dedicated exclusively to EaD activities.

*Note:* Source: Veloso & Mill (2018, p.126).

Finally, this is one of the realities of EaD on teachers' working conditions: their remuneration, working hours (management of working time vs. demand vs. rest time), and the working relationship with educational institutions.

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### *Level of computer literacy*

Another factor investigated in this research is the level of computer literacy of EaD teachers. This is considered as one of the fundamental competencies for any professional working in this teaching modality and accompanying students through ICTs.

In this perspective, Belloni (2006, p. 58) presents the technological competence for the teaching work, starting from two fundamental concepts in EaD, such as interactivity and interaction as the basis of face-to-face and virtual practices; defining interaction as a reciprocal action between agents, directly or indirectly, through VLE, social networks, telephone contacts, e-mails, and other means of communication. While the concept of interactivity is understood as the action of man on machines, on technologies, and other objects.

In the context, when analyzing the data on the levels of knowledge of EaD teachers in computer science, it was found that the intermediate level is the highest percentage and reaches 40.66% of the respondents. Subsequently, 30% of the respondents are found with a basic level, which is important to highlight and revisit Figure 6 on the relationship between the desired competencies for teaching work in EaD.

In this regard, the data collected on the subject are presented below in Figure 15.
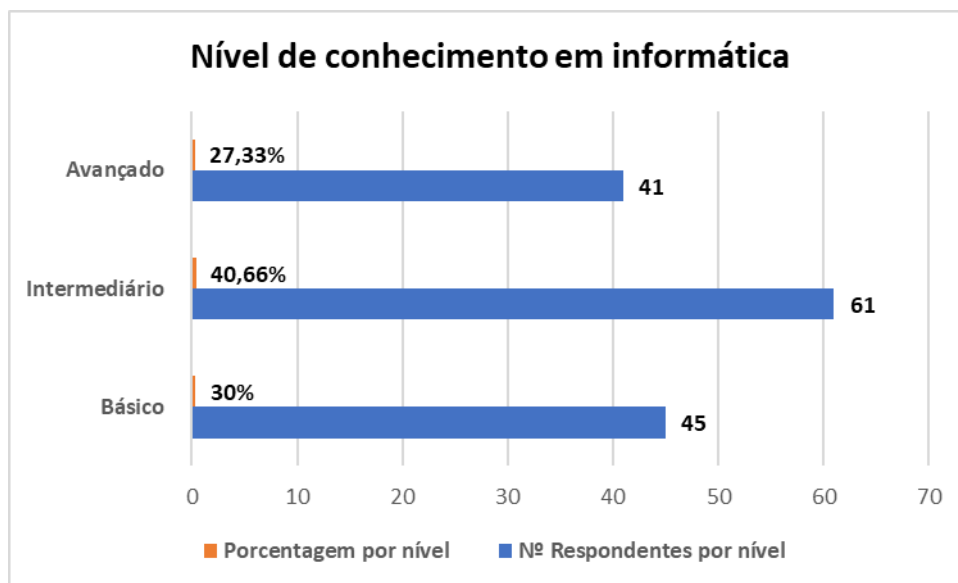


*Figure 15.* Institutions for which respondents work
*Note:* Source (the author)

The data analyzed show that there is a considerable group of basic level teachers in computer science. This is relevant when studying the concepts of "competence" under the different views and knowledge, based on the definition of competence in Perrenoud (1999, p. 30): "(...) is the ability to mobilize a set of cognitive resources (knowledge, skills, information, etc.). Solving a series of situations with relevance and effectiveness."

Paniago (2016, p. 383), states that EaD is a modality mediated by the new digital culture and that it reinforces flexibility, creation, collaboration, interaction, and

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asynchrony. In this sense, necessarily the teacher working in this modality must master the various technological resources that are within the attributions of EaD teachers.

### *Technological tools used by EaD teachers*

In this perspective, the tools most used by the guest lecturers were analyzed and it was found that all respondents and 78.66% use slides as one of the main tools use the office package. According to table 16 below.
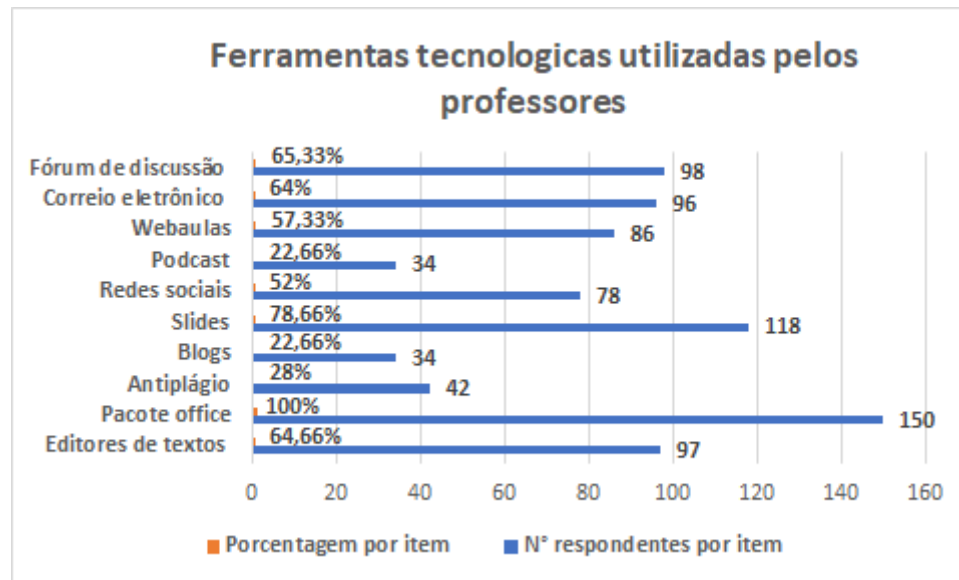


*Figure 16.* Institutions for which respondents work.
*Note:* Source (the author)

A relevant point is the "anti-plagiarism" tool, which only 42 of the invited professors use on a daily basis. Considering its importance for those working with research and especially in EaD. This is in line with Singh et al's (2020, p.208) assertions that anti-plagiarism programs are fundamental tools for the teacher to prevent unethical behavior and dishonest practices of students who transgress the property and intellectual production of others.

In this sense, this awareness practice should be a process of maintenance by teachers, as a need to teach students about the importance of giving full credit to the author, through proper citations.

Another relevant factor in this research is the technological tool most used by the respondents: 100% of them use the *office* package. This may be a mention for managers with respect to continuous training and the use of ICTs. This is in line with Libâneo's (2001, p.10) reflections that teacher training is necessary "to help them adjust their teaching to the new realities of society, of knowledge, of the student, of the diverse cultural universes."

In the process, the institutions that financially encourage teachers to acquire or update the technologies used in VLE practices, such as computers, educational applications, printers, furniture, mobile Internet access, and other tools necessary for virtual teaching are exceptional. This is close to the research of Faria & Silveira (2007, p.07) when they highlight the availability and encouragement of the use of ICTs as everyday tools, easily and quickly accessible.

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Therefore, it is understood that the presented information formed a portrait of the EaD teachers' scenario, based on the teachers' level of education, remuneration, working hours, level of knowledge, and mastery of computer and technological tools.

## Discussion and conclusions

This research considered that the EaD is an important device of social inclusion, the proximity of higher education to remote locations, with a more affordable tuition, flexibility with time and space, especially students with low income. This is in line with the statements of Ribeiro; Mendonça & Mendonça (2007, p. 2) about the modality and its different communication tools, which favors interaction between peers, in different spaces and times, between face-to-face and the online, classroom and VLE, facilitating access to basic and higher education and vocational training. As well as the need for methodological rigor, professional ethics, and social responsibility.

However, the reality of EaD teachers differs from the objectives of the modality and from the rights "traditionally" acquired by the category of classroom teachers, in terms of their recognition as teachers, labor rights, and improvements in public and educational policies. The remuneration and working hours, continuous training, and other aids that are relevant to the practices in EaD, in the blended and/or face-to-face poles, stand out.

In terms of remuneration and working hours, they are at a disadvantage because they lack regulation and are often not granted contact time with students in the VLE, feedback from discussion forums, chats, portfolios, production of materials, among other tasks. Without taking into account the high quota of students and their posts. Which goes hand in hand with the reflections of Veloso & Mill (2018, p.05) on the precariousness of the teacher in EaD and the new format of labor relations, with a bias of "flexibility," outsourcing, deregulation, destabilization, and prone to be named "teleworker."

However, this lack of regulation and job insecurity compromise the quality of teaching, as a portion of teachers see EaD as a "casual job" to supplement income or workload from classroom teaching, or as a gateway to teaching in higher education.

In this sense, EaD is considered a complementary labor activity, since its working conditions are precarious and its teachers are not adequately paid. Moreover, as described above, hiring at federal level is done through scholarships, i.e., with no labor link to the institution and no public competitions for EaD teachers.

As for universities and basic education institutions, the study shows that each institution has a hiring policy, highlighting the provision of service in the form of MEI and telework recognized by the CLT.

Another important factor in the context of EaD teachers for further research is the materials produced by them, which become "public" and are often not considered by the institutions as copyrightable. In addition, from this research, it was discovered that there are realities in which teachers were dismissed and their materials are still used by the institutions.

In this perspective, regarding the attributes of the EaD teachers in the different VLE interfaces, it is possible to realize through the data collected in this research that

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30% of the teachers have knowledge and mastery of computers at a "basic" level, which may compromise the quality of the courses, since they need several technological tools to intervene. On the other hand, it was found that only 28% of the teachers use anti-plagiarism applications; 22.66% use podcasts, 22.66% use blogs, 64% use e-mail, and 100% work with *office* packages. This fact is close to the reflections of Ribeiro; Mendonça & Mendonça (2007, p. 5) in the sense that "Virtual learning environments aggregate several technologies found on the Web to provide communication, provision of materials, and course management."

The same authors (2007 p.10) reinforce that the teachers of this modality are responsible for the configuration and orientation of the students, offering learning possibilities, through a set of characteristics that ICTs can subsidize in the process of interaction and success of the student in distance education.

However, the factors that make this category precarious are listed, requiring public policies, in terms of remuneration without labor relationship and not in accordance with the reality of teachers with master and doctoral degrees; working hours incompatible with the remuneration offered; lack of infrastructure (computers, internet access, software, printers, among others), lack of continuous training, and mastery of the competencies necessary for teaching in EaD.

According to the data collected in this survey, the educational level of the respondents is as follows: 35.33% of teachers with specialization and 14% of graduate teachers hold positions as tutors and teacher trainers. In addition, there are 20.66% of doctoral teachers and 30% of master teachers assigned in the positions of content teachers and teacher trainers. This is in line with Mill's (2006, p.96) statements about the precariousness of teaching work and the quality of teaching in EaD.

Therefore, this research made it possible to outline a "profile" of the EaD teacher, contributing with possible reformulations of the labor criteria adopted so far by educational institutions. To open a space for discussion, with future analyses, that will leverage a broader investigation by the researcher on the labor rights of these professionals and the equivalence between the face-to-face teaching teacher and the EaD teacher, being all of them graduates and/or postgraduates (lato sensu and/or stricto sensu).

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# TOWARDS THE FORMATION OF INTERCULTURAL CITIZEN-SHIP. A STUDY ABOUT THE RELATIONSHIP BETWEEN TEACHER'S CULTURAL INTELLIGENCE AND INTERCULTURAL COMPETENCIES

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**Abstract**. The purpose of this study is to analyze the relationship that exists between teacher's cultural intelligence and intercultural competencies in a High School located in the Northwest area of the United States. The compounded study —completed during 2019— hinges on a quantitive investigation through the application of the Cultural Intelligence Scale that measures four dimensions —cognitive, metacognitive, motivational and behavioral— of cultural intelligence. This scale was applied to the entire faculty of 75 teachers (43 women and 32 men) in the areas of Mathematics, Science, Social Science, English, Foreign Language and Physical Education. In the same manner, a qualitative investigation was completed to identify intercultural competencies. To effectively pinpoint the intercultural competencies of the faculty the development of 15 in depth interviews were used and completed based on the 3 principals of intercultural education proposed by UNESCO (2006, 2010). The results, warn that teachers have a high moderate level in metacognitive, motivational and behavioral dimensions, but low level in the cognitive dimension of cultural intelligence. Demographic variables contemplate, level of education: all teachers with a Bachelor's degree present a superior scale in all dimensions of cultural intelligence compared to teachers with a Master's degree. However, all teachers present low intercultural competencies.

**Keywords:** intercultural citizenship, cultural intelligence, intercultural competencies, intercultural education, teachers education, demographic variables.

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# HACIA LA FORMACIÓN DE UNA CIUDADANÍA INTERCULTURAL. ESTUDIO SOBRE LA RELACIÓN ENTRE LA INTELIGENCIA CULTURAL Y LAS COMPETENCIAS INTERCULTURALES DEL PROFESORADO

**Resumen**. Este estudio tiene como objetivo analizar la relación entre la inteligencia cultural y las competencias interculturales de profesores en una preparatoria localizada en el noreste de los Estados Unidos. El estudio mixto —realizado durante 2019— se sustenta en una investigación cuantitativa mediante la aplicación de la Escala de Inteligencia Cultural que mide las cuatro dimensiones — cognitiva, metacognitiva, motivacional y conductual—, de la Inteligencia Cultural.  Esta escala se aplicó a todo el equipo docente compuesto por 75 profesores (43 mujeres y 32 hombres) de las áreas de matemáticas, ciencias, ciencias sociales, inglés, lenguas extranjeras y deporte. Así mismo, se realizó una investigación cualitativa con el objetivo de identificar las competencias interculturales del profesorado, con el desarrollo de 15 entrevistas a profundidad.  En el diseño del instrumento se consideró los tres principios de educación intercultural propuestos por la UNESCO (2006, 2010). Los resultados advierten que los profesores presentan un nivel moderadamente alto en las dimensiones metacognitiva, motivacional y conductual, pero bajo en la dimensión cognitiva del nivel de inteligencia cultural. Así, se contempla como variable demográfica, el nivel de estudios: todos los profesores con Licenciatura presentan una escala superior en todas las dimensiones de la inteligencia cultural comparado con los profesores de maestría. No obstante, todos los profesores poseen bajas competencias interculturales en su desempeño profesional.

**Palabras clave:** ciudadanía intercultural, inteligencia cultural, competencias interculturales, educación intercultural, formación del docente, variables demográficas.

## Introduction

This research conceptualizes and systematizes the level of cultural intelligence, which is defined as the ability to function in cultural diversity. It reflects on the relationship between cultural intelligence and the intercultural competences of the teacher, since the latter integrate skills, resources-knowledge and attitudes to establish equitable terms in an environment of diversity, in order to resolve conflicts and interact in harmony. The standardized sample on which this research is drawn includes high school teachers in a school in Sumner, United States where the majority of the population is Caucasian (76.5 percent). In this regard, the survey conducted by the Center for Educational Effectiveness in 2017, generated these results:

Table 1

*Cultural diversity at the Sumner School*

| **Cultural diversity** | |
|---|---|
| Hispanics | 12.4% |
| Mix of two breeds | 7% |
| Asian | 2.2% |
| Native American | 1% |
| Afro-American | 0.6% |
| From the Pacific Islands | 0.3% |
| Total | 23.5% |

*Note*: Source: Based on survey conducted by the Center for Educational Effectiveness (2017)

The same survey identified the levels of assertiveness of teachers on the subject of diversity and communication with families. Thus, 83% of the teachers are aware of the cultural diversity of the student community, but only 27% would address, in their classes, issues such as diversity in religion, race and / or culture.

Cultural diversity in schools is a reality in the globalized world, it is a consequence of the migrations of social groups that seek new opportunities. In this sense, Afolayan (1994), in his article *The implication of cultural diversity in American schools*, analyzed the factors responsible for cultural diversity in the United States and how they determine the performance of teachers. The author highlights the need for educators who are sensitive to multicultural issues. He even highlights that the success of schools and educators depends on understanding differences in gender, race and culture.

Therefore, teachers can be intercultural assemblers, and develop skills and capacities in students that allow them to understand their cultural context and respect it (Gordon, 2007). Thus, this research prioritizes the need for teachers capable of addressing these issues, especially in the social and political circumstances of the United States between years 2015-2017 mainly according to the policies that have been developed in recent years in the matter of migratory flows (Costello, 2017; Uddin, 2018).

For its part, the Southern Poverty Law Center, dedicated to the fight against prejudice and hatred in Montgomery, Alabama, in its After Election Day study; *The impact of the 2016 Presidential Election* in our Nation's Schools surveyed more than 10,000 educators, counselors, and administrators in the US. The most relevant results are:

- 90% of educators considered a negative impact on the school climate.
- 80% described high levels of anxiety and worry about the future of families representing minorities.
- 50% of the teaching staff declared an increase in ethnic insults.

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- Although 65% of the teachers stated that the administration shows willingness to solve it, 40% affirm that they do not have action plans in the event of incidents.

- 25% of the teachers described the incidents as related to the political rhetoric of the president-elect.

As a consequence of the Southern Poverty Law Center research, Costello (2017) developed the work: *Teaching the 2016 Election: The Trump Effect*, which describes the emotional consequences of immigrant students in the classroom. Anxiety, fear, and discouragement were the most common. However, Costello points out that 43% of teachers and administrators think that it is a political situation that should not be discussed in class.

### Teacher characteristics

Although cultural identity is not represented only by ethnic-racial origin, it is one of the most outstanding cultural characteristics in the United States. As a starting point, we will consider the scenario in which the future teacher is trained. For example, in the universities where they study, they are optional subjects: cultural diversity in the classroom, social and racial justice in the classroom, cultural differences and other similar subjects. Another sample is the ethnic / racial profile of the teacher and students described in the following table.

Table 2

*On Ethnic Diversity Among Teachers and Students in the United States of America*

| Ethnic diversity | From teacher | From the student |
|---|---|---|
| Caucasian | 82% | 49% |
| Afro-American | 7% | 15% |
| Hispanic | 8% | 26% |
| Asian or Pacific Islander | 2% | 5% |
| More than one race | - | 4% |
| Native American or Alaskan | 1% | 1% |

*Note: Source*: Teacher Ethnic Diversity: The State of Racial Diversity in the Educator Work Force (2016); Student Ethnic Diversity: National Center for Education Statistics (2015)

### Regarding the academic training of the teacher

Irvine (2003, p. 79), in his work Diversity in Teacher Education, notes: "African Americans, Hispanics, Asians, Native Americans, poor white students and working class students often bring to school a distinctive set of cultural values, beliefs and norms that are not coherent with the cultural norms of the middle class, nor with the guidelines and behavior of the schools".

In addition to this proposal by Irvine, Gay (2000), in his research work Culturally Responsive Teaching: Theory, research and practice, establishes as a characteristic of

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culturally sensitive teachers. Because the academic performance of ethnically diverse students will improve when taught through diverse cultural and ethnic filters (Au and Kawakami, 1994; Gay, 2000).

Yuan (2018), in his study Preparing Teachers for Diversity, highlights the importance of a reform to traditional teacher training programs. It is recommended to cultivate collaboration and mutual responsibility for teaching-learning between students and teachers (Gay, 2010). Thus, as we have seen, the scientific literature in the last decade has focused on the need for cultural intelligence in teacher training.

### Cultural intelligence, essential in the classroom

Indeed, cultural intelligence does not imply knowledge of each culture but rather requires that teachers develop skills such as the ability to listen, reflect on the meaning of behavior, seek relevant information and advice that allow adaptation to the multicultural context.

Cultural intelligence promotes a learning model in which each student contributes their own culture and abilities. In this way, they develop more confidence in their abilities, no one is belittled for approaching the circumstances from different cultural paradigms and, even, learning improves (Elboj Saso et. Al., 2004).

People of different ethnic and cultural backgrounds enrich the learning process in different ways. Earley and Ang (2003) considered that intelligence goes beyond cognitive abilities; For this reason, inspired by the concepts of Sternberg and Letterman - developed in the eighties-, they formed the concept of cultural intelligence with four dimensions: metacognitive, cognitive, motivational and behavioral.

The metacognitive dimension refers to the level of cultural awareness that is formed during interactions with people from different cultures, it uses a consolidated level of knowledge to investigate interaction rules in multicultural environments. Thus, people with a high level in the cultural dimension can question their beliefs and adjust their behavior.

The cognitive dimension is based on a high cognitive process. As well as in the knowledge of norms, practices and interpretations of different cultures, acquired in personal and educational experiences. It should be noted that cultural norms and values are different, since you have to consider age, the relationship of power and influence, the relationships between individuals. The cognitive dimension influences people's thoughts and actions.

For its part, the motivational dimension is the resource that moves individuals to act or not at specific times. In the concept called: cultural intelligence, motivation is constituted by the product of values, personal goals and self-confidence.

However, all the knowledge acquired and developed by the metacognitive and cognitive dimensions does not guarantee the adaptation of the individual inserted in a different cultural context; however, all knowledge is useful if the person is motivated for integration. In this sense, the scientific literature takes into consideration that education for interculturality must expressly value students in their cultural environment in order to build their education towards interculturality from this point of view.

Finally, the behavioral dimension is the individual's verbal and non-verbal ability to interact with people from other cultures, especially when communication is face-to-face. It also includes the right flexibility in the dialogues.

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### *Interculturality and its impact on the classroom*

Interculturality is a permanent process of relationship, communication and learning between people and groups with different knowledge, values and traditions. It is aimed at generating, building and fostering mutual respect, for the full development of the capabilities of individuals, over and above their cultural and social differences.

It is clear that diverse cultures seek to defend and strengthen their identity, relationships, beliefs and worldview. However, his vision will not necessarily be shared by another group, in the face of that an education that helps conciliation and respect is required.

Leiva (2011) in her work *Intercultural education: An educational commitment to build a school without exclusions,* mentioned the constant increase in students of immigrant origin. She indicated the need for schools to face the challenge of intercultural coexistence. Leiva even considered that intercultural education promotes school inclusiveness. Let us remember that in 2002, among the conclusions offered by the monograph on Inclusive Education of the *Revista de Educación*, we specifically want to bring up the experience of the school mediator in Quebec (Llevot, 2002). As well as the observations that Xavier Besalú proposed to us, that same year, in *Cuadernos de Pedagogía* on the success and failure of different students when he insisted on the direct relationship between the school, social and personal failure of the "different" student and the necessary communication intercultural in the classroom (2002).

In recent years, Peñalva and López-Goñi (2014) considered in their study Citizen Competencies in teacher-students education, that initial teacher training should develop intercultural competence, taking into account a combination of capacities such as: a positive attitude towards cultural diversity, the communicative capacity to handle conflicts in intercultural situations, and how both the vision and the interpretation of reality influence to achieve intercultural citizen competence.

In this regard, in 2002 UNESCO specified in its normative instruments as a result of the events of September 11, 2001. This declaration reaffirmed the conviction that intercultural dialogue is the guarantee of peace. that culture is the center of social cohesion. Its conclusions are the result of the work: UNESCO Guidelines on Intercultural Education. Speaking of Competences (2006, 2017), these three principles were recurrent during the investigations, since they were considered in the development of the qualitative instrument.

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Table 3

*The Three Principles of UNESCO, considering intercultural strategies in the classroom as well as the professional profile of the teacher*

| Beginning | For the teacher to promote interculturality in the classroom, he/she needs strategies: | Necessary teacher profile: |
|---|---|---|
| Principle I Intercultural education respects the cultural identity of the learner. | • Based on the development of culturally appropriate pedagogical methods.<br>• That allow the development of practical, participatory and contextualized learning techniques in collaboration with cultural institutions, as well as study trips and other activities. | • Familiarization with the cultural heritage of your country.<br>• Aware of the educational and cultural needs of minority groups.<br>• Ability to adapt content, methods and materials to the needs of minority groups. |
| Principle II Intercultural education teaches each learner the knowledge, attitudes and cultural competencies necessary to participate fully and actively in society. | • Based on pedagogical study programs that impart knowledge to the majority groups about the history, traditions, language and culture of minorities.<br>• That allow to impart knowledge of society to minorities.<br>• That help to eliminate prejudices.<br>• That allow incorporating different cultural perspectives.<br>• That lead to a full range of reading, writing and speaking. | • Deep understanding of the intercultural paradigm in education.<br>• Critical awareness of the role of education in the fight against racism and discrimination.<br>• Rights-based pedagogical approach.<br>• Competences to design, apply and evaluate school programs at the local level.<br>• Necessary skills to incorporate students from "dominant" cultures in the pedagogical process.<br>• Ability to take into account the heterogeneity of learners. |

| Principle III Intercultural education teaches all students the knowledge, attitudes and cultural skills that allow them to contribute to respect, understanding and solidarity. . | • Treat the heritages, experiences and contributions of different ethnic groups with equal importance.. <br> • That they teach in an egalitarian context. <br> • That the actions are consistent with the values that are taught. <br> • That include interdisciplinary projects between academic areas and / or institutions to solve common problems. <br> • That they develop international networks of students, students and researchers. <br> • That they develop skills for mediation and conflict resolution. | • An openness to permanent professional training aimed at promoting awareness of the positive value of diversity and the right to be different. <br> • Have a critical awareness of the role of local communities for a learning process. <br> • Have knowledge of civilization and anthropology. <br> • Acquire social and political competencies that facilitate the formation of participation in the management of schools. <br> • Ability to develop an effective intercultural pedagogy. <br> • Promote intellectual openness and the ability to interest learners in learning and understanding others. <br> • Have empathetic observation techniques. |

*Note: Source:* Own elaboration, based on the UNESCO Guidelines on Intercultural Education (2006, 2017)

### *About this study*

It was from 2017 when the migration of people from other states - such as California and Florida - headed to the city of Sumner, in Washington. According to the Sumner Statistics (2015), the ethnic groups of this city located in the northwest of the country are made up of: 86% Caucasian, 9.7% Hispanic, 2.6% declare having more than two races, 1.1% Asian.

The guiding question for this research was:

What is the level of Cultural Intelligence of the teachers and the relationship with their intercultural competencies that allow addressing cultural diversity in the classroom?

Underlying the following questions:

1. What is the level of Cultural Intelligence of the teachers at Sumner High School?

2. What is the relationship between the teacher's demographic variables and the dimensions of the cultural intelligence scale?

3. What is the relationship between the level of Cultural Intelligence and the teacher's intercultural competencies?

4. What are the strategies that would help increase the level of Cultural intelligence of teachers to strengthen their intercultural competencies?

### Method

The opportunity offered by the development of this research is the characteristics of the teachers, since they work in a classroom with minimal cultural diversity. It is also essential for this research to understand the relationship between the dimensions that

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make up cultural intelligence with the intercultural competencies of teachers who work in contexts with little student cultural diversity.

The research used a mixed methodology, in the quantitative area it was a non-experimental cross-correlational design, with the measurement of the dimensions of Cultural Intelligence, and the relationship between each of the dimensions: metacognitive, cognitive, motivational, and behavioral. by applying the Scale of Cultural intelligence, which includes 31 items.

The scale was applied to 75 teachers who make up the entire teaching staff of the school and represent the areas of Mathematics, English, Science, Social Sciences, Foreign Languages, Leadership, Technical Subjects, Arts, Physical Education and Special Education for students with disabilities.

Regarding the demographic characteristics, the following were identified: years of experience as a teacher, gender, educational level and ethnicity. In the qualitative study, 15 in-depth interviews were conducted and a minimum interview time of 60 minutes and a maximum of 90 minutes was estimated. The interviews were recorded on audio and video.

The design of the qualitative study was based on the experiences of the teachers to address the issue of diversity in their classroom and their intercultural capacities. This made it possible to compare the reality in his classroom with the Guidelines on intercultural education proposed by UNESCO, which were considered for the design of the interview guide (See Table 3).

The in-depth interviews were conducted 12 weeks after the application of the quantitative instrument, in order not to vitiate the results and obtain data subject to the reality of the interviewee.

The categories were the reflection of the reality of the interviewee, since at all times a reflection was made on the pedagogical strategies developed in his class. The categories represent the maximum validity, since the meaning associated with the statement of the problem was captured through the review and complete transcription of the 15 interviews carried out.

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# Results

## *From the quantitative study*

Table 4
*Results Concentrate of the Cultural Intelligence Scale*

| Data | Math | English | Science | Social Sciences | Foreign languages | Lea-dership | Tech-nical Subje-cts | Arts | Physi-cal edu-cation | Educa-tion Special |
|---|---|---|---|---|---|---|---|---|---|---|
| *Metacognitive dimension* | | | | | | | | | | |
| Minimum | 22 | 26 | 27 | 26 | 30 | 20 | 21 | 32 | 28 | 29 |
| Maximum | 47 | 45 | 40 | 43 | 49 | 35 | 41 | 37 | 46 | 40 |
| Average | 36.45 | 37.69 | 33.45 | 36.38 | 37.17 | 27.5 | 33.9 | 35.33 | 35 | 35 |
| Typical Dev. | 6.440 | 5 | 4.824 | 5.317 | 6.616 | 10.607 | 6.1 | 2.887 | 9.644 | 5.148 |
| *Cognitive dimension* | | | | | | | | | | |
| Minimum | 17 | 10 | 16 | 14 | 28 | 13 | 11 | 14 | 19 | 18 |
| Maximum | 42 | 50 | 45 | 38 | 52 | 18 | 35 | 46 | 41 | 37 |
| Average | 25.55 | 31.63 | 27 | 29.88 | 39.5 | 15.5 | 22.2 | 29.67 | 26.67 | 28 |
| Typical Dev. | 8.129 | 10.204 | 9.176 | 7.918 | 9.935 | 3.536 | 8.039 | 16.01 | 12.423 | 8.216 |
| *Motivational dimension* | | | | | | | | | | |
| Minimum | 36 | 30 | 27 | 33 | 32 | 41 | 24 | 47 | 34 | 30 |
| Maximum | 50 | 56 | 56 | 53 | 55 | 43 | 51 | 56 | 56 | 48 |
| Average | 41.09 | 42.56 | 41 | 44 | 46 | 42 | 40 | 52.67 | 45.67 | 38.8 |
| Typical Dev. | 5.356 | 7.958 | 7.785 | 7.329 | 8.672 | 1.414 | 9.214 | 4.933 | 11.06 | 7.918 |
| *Behavioral Dimension* | | | | | | | | | | |
| Minimum | 28 | 17 | 30 | 30 | 26 | 16 | 20 | 31 | 29 | 30 |
| Maximum | 47 | 54 | 42 | 48 | 50 | 44 | 50 | 48 | 45 | 47 |
| Average | 37 | 38.19 | 34.82 | 39.25 | 40.67 | 30 | 36.2 | 41.33 | 37.33 | 37.2 |
| Typical Dev. | 6.017 | 8.191 | 4.070 | 7.265 | 9.501 | 19.799 | 8.917 | 9.074 | 8.021 | 6.907 |

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Considering the average scores of the four dimensions of the intelligence scale, the results are presented in Figure 1, where the lowest level in the cognitive dimension and the highest in the motivational dimension stand out.
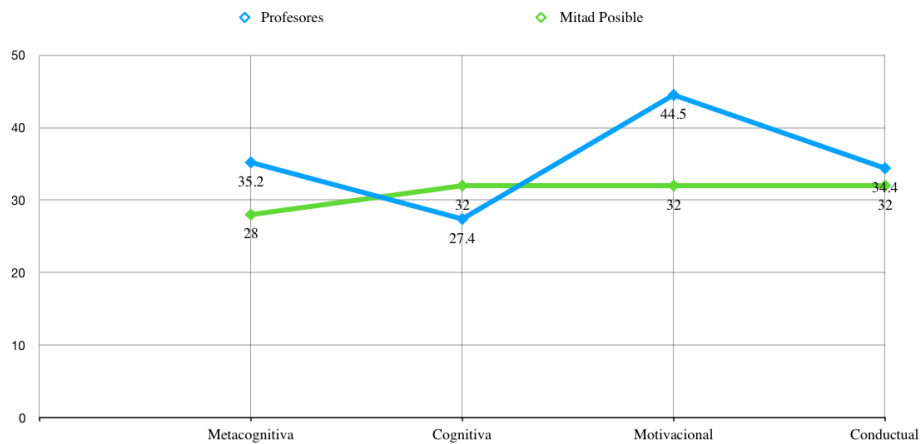


*Figure 1.* Average scores of the four Dimensions of the Teachers Cultural Intelligence Scale. (Own elaboration)

In Table 5, the results are concentrated considering the demographic variables, such as the level of studies, age, work experience, sex and ethnic group of the teacher.

Table 5
*Concentration of higher scores considering demographic variables and dimensions of cultural intelligence*

| | *Metacognitive* | *Cognitive* | *Motivational* | *Behavioral* |
|---|---|---|---|---|
| **Level of studies** | Degree significantly higher | Higher Bachelor's degree | Higher Degree | Higher Degree |
| **Age** | 23-34 years high level | 23-34 years high level | Ranges 23-34 years 45-54 years 55-64 years higher | 23-34 years high level |
| **Experience** | 6- 10 years | less than a year | 6-10 years | 2-5 years |
| | | Differences are not significant | | |
| **Sex** | Masculine | Masculine | Masculine | Feminine |
| | | Differences are not significant | | |
| **Ethnic group** | Afro-American | top Asian lower Caucasian | top Asian lower Caucasian | Other |

*Note:* Source: Own elaboration.

The most significant demographic data was the one referring to the level of studies. As can be seen in Table 5 and Figure 2, it is that teachers with a Bachelor's degree have better average scores than those with a Master's degree. With the exception of the cognitive dimension, it can be said that both groups have a slightly high metacognitive, motivational and behavioral ability and a slightly low cognitive ability.
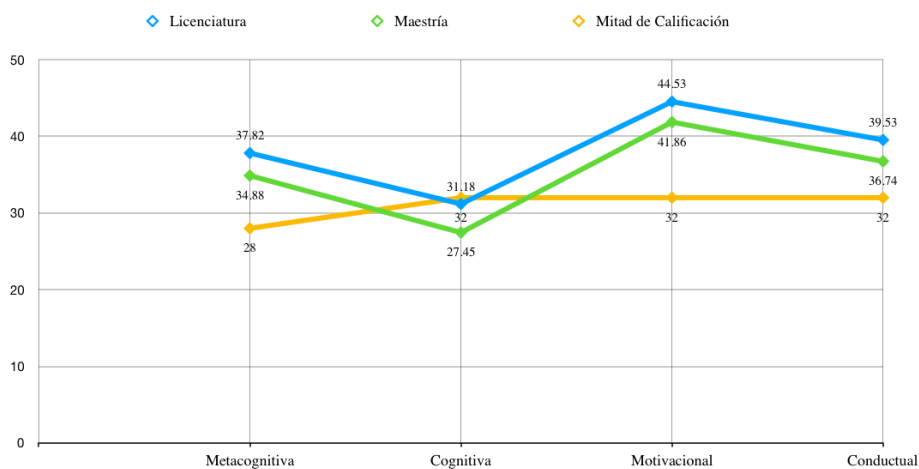


*Figure 2.* Average scores of the four Dimensions of the Teachers Cultural Intelligence Scale, and educational level.

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### *Analysis and discussion of the results of the qualitative study*

According to the UNESCO guidelines regarding Intercultural Education, which are broken down into three principles, the results of this research are:

*Principle I. Intercultural education respects the cultural identity of the learner. Therefore, education must be of quality, and adapted to their culture.*

Teaching and learning strategies will be developed to consolidate respect for cultural identities; involving languages and values other than those used. Therefore, the teachers expressed that they do develop at least one of them in the form of an interview and carry it out at the beginning of the school year. They indicate that they do not have enough training on the subject.

In addition, teachers who implement strategies of integration or intercultural openness when listening to music from another part of the world; or, by saying their students' names in their original language, they share that students feel intimidated or made fun of every time they use these strategies. This expresses a low level of cultural and emotional intelligence on the part of the students.

In terms of activities that promote collaboration with cultural institutions, most teachers do not carry them out unless the study program so determines. And when students do not speak English as their mother tongue, teachers do not work in the student's native language. This shows little flexibility and ability to adapt content to the needs of minority groups.

Regarding training related to the curriculum and with students representing a cultural minority, the majority of the teachers declared that they had not taken any teacher training course. Only teachers who hold representative positions, within the campus, are required to train to improve their skills in adapting methods, content and materials for minority groups (example: Native Americans) and special education students.

Against this background, most of the teachers expressed that they create an environment of respect in the classroom. It is important to note that two responses were aimed at emphasizing that they do not teach cultural diversity as a topic, due to its difficulty and, for them, it is better to avoid it. On the other hand, a teacher stated that by hearing "taunts" or inappropriate comments in the classroom, he/she avoids to continuing and evades situation. These cases make palpable a lack of social competences, a weakness of coexistence between students from diverse cultural contexts.

*Principle II. Intercultural education teaches each learner the knowledge, attitudes and cultural competencies necessary to participate fully and actively in society.*

Social and English teachers teach: minority history, traditions, language or culture only when they are included in their school program. On the other hand, the Photography teacher designs his own school program and integrates or not integrates cultural diversity in each unit.

The rest of the teachers, from seven different areas, emphasize that if it is not part of the program, there is no reason to include those topics. Teachers of English, Science and Mathematics as well as Sports do not believe intercultural education is necessary. On the other hand, the Social Sciences teachers do, except for one who considered that this is not necessary, which denotes a disparity in accordance with their team work.

The participants acknowledge their poor understanding of the intercultural paradigm and ask for more training on the subject. The only two teachers who express having

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extensive knowledge in the intercultural paradigm are from the English area, who have 21 years of experience as a teacher, and ten as a teacher and administrator. The other teacher is from the area of physical education, who has been a teacher for nine years and he/she mentions that being African-American is his strength.

There is the intention of the teacher to talk about these issues, but there is no formality or evidence of planning against racism and discrimination. On the other hand, five teachers representing four different areas stated that if it is not part of the curriculum they do not have to include it in their classes.

When defining intercultural competences, the UNESCO proposal (2006) was considered as a reference concept, which includes: respect for valuing others, self-awareness / identity, seeing the world from other perspectives, listening and participating in an authentic intercultural dialogue, as well as the capacity to adapt, the construction of lasting intercultural links and cultural humbleness.

In none of the responses did they include aspects such as: participating in an authentic intercultural dialogue, adaptability, building lasting intercultural links, and cultural humbleness.

On how to incorporate students from non-dominant cultures into the learning process, teachers say they do not apply strategies, but they speak of incorporating students - minorities - into the class by working with them individually, integrating them with groups of people to do them feel comfortable.

*Principle III Intercultural education teaches students cultural knowledge, attitudes and competencies, which allow them to contribute to respect, understanding and solidarity between individuals, between ethnic, social, cultural and / or religious groups and between nations.*

Regarding the autonomous development of study plans that contribute to the discovery of cultural diversity and respect for cultural heritage, only the area of Social Sciences does so. All other teachers in this area assumed that they do not modify the content of the program based on the needs of the students, but instead follow the program dictated by the School District. The areas of English, Science, Mathematics, Special Education, Technical Classes, Arts and Sports indicate that if the subjects are not included in the program, they do not have to teach it or allocate time to address it.

The same situation occurs in other responses to Principles I and II. The lack of time during the course or the non-existence of the topics in the study programs are sufficient justification for the teacher not to include them in their regular classes.

According to the development of study plans that address the fight against racism and discrimination, the Social Sciences area is the only one that addresses them because it is part of the study program. Some teachers of English, Science, Mathematics, Special Education, Technical Classes and Sports even declared that if it is not part of the program there would be no reason to include it. It is noteworthy that the teachers of Foreign Languages, Technical Classes and Art speak about the issues of racism and discrimination existing in other parts of the world but not that exercised by the United States.

In addition, the development of a curriculum that addresses the awareness of cultural values that underlies the interpretation of situations and problems, as well as the ability to reflect and review information enriched by the knowledge of different cultural perspectives; the area of Social Sciences does it, because it is related to its central themes. The area of English and Foreign Languages say they address it superficially, the rest of

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the areas interviewed affirm that if it is not part of the curriculum there is no reason or time to address it.

So how does the teaching of the diversity of other cultures integrate American culture; Virtually all Social Sciences teachers speak of different cultures, one in particular and the Foreign Languages teacher emphasized his personal criticism of the advantageous participation that the United States has had in other cultures and countries.

Answers about using the U.S. example as the "melting pot" they were mentioned only by a professor of Social Sciences and one of English. Even three of the fifteen teachers who defended the "American" culture as the most important because they are 100% American. The above denotes a low critical awareness about the role that local and social communities play in the learning process and in the construction of societies.

Most teachers develop study plans considering respect for different patterns of thought, they use different teaching-learning strategies, modifying them according to the class and the period of their classes.

Regarding the teaching methods taking into account the heritage, experience and contributions of different ethnic groups, only the Social Science and Foreign Languages teachers talk about the African American culture and the different political positions. More than half of the teachers interviewed consider only the study program and since it does not contemplate it, they also do not design methods that address different ethical groups.

Only four interviewees carry out interdisciplinary work, coordinating activities and projects with other areas, but they mention the lack of time and do not know how to do it well. The teachers' responses stand out when they comment that the topics are so different between the areas that there is nothing in common. They also mention the difficulty of coordinating activities in their own areas, but doing interdisciplinary work, they say, would increase the problems.

The results of qualitative research make sense when considering the degree of training that teachers have on issues related to cultural diversity, human rights, equity, and intercultural competencies. Thus, it is shown that only teachers who have a position or activity added to that of teacher have at least one of the trainings.

## Discussion and Conclusions

By way of conclusion, once the relationship between cultural intelligence and the intercultural competencies of teachers in a high school has been analyzed. According to the arguments extracted from the quantitative research of the Cultural Intelligence Scale from the dimensions that comprise it, these are: cognitive, metacognitive, motivational and behavioral. Based on the results obtained from the sample designed and described, standardized, on a total of 75 teachers, 43 women and 32 men, from the areas of mathematics, science, social sciences, English, foreign languages and sports, all active in a high school in the northeastern United States of America in 2019. Assessing the results of the 15 interviews answered by this teaching team. We can conclude that high school teachers in the northeastern United States of America show a cultural intelligence of a moderately high level in the metacognitive, motivational and behavioral dimensions, but low in the cognitive dimension. A second conclusion drawn from the demographic variable, educational level, observes that all teachers with a Bachelor's degree present a higher scale in

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the four dimensions of cultural intelligence. However, all teachers offer low intercultural competencies in their professional performance. Therefore, our research adds to the conclusions offered for the Spanish context by Peñalva and López-Goñi (2014), we propose for the case of high school teacher training in the United States of America that intercultural intelligence be integrated into training in professional, social and personal competencies of the high school teacher. The teacher training in competencies for the development of cultural intelligence has been offered, in accordance with the social and political context of the United States of America since the last five years, an improvement that will optimize social coexistence in the classroom (classroom) as in the social and citizen context. To substantiate the conclusions presented, the results obtained in this research are detailed, extracted from the four dimensions that categorize cultural intelligence: metacognitive, cognitive, motivational and behavioral.

The metacognitive dimension shows that between the different teaching areas there are no statistically significant differences in the level of consciousness, in cultural knowledge and interaction with different cultural origins. Nor in being aware of intercultural interactions, in developing action plans before interacting with people from different cultures.

The teachers in the leadership area presented a moderately low level; and the rest of the teaching areas presented a moderately high level, but it is not considered significant.

The second dimension, the properly cognitive one, indicates that the teachers of the different areas showed the same level in this dimension, which constitutes the ability to know the legal and economic system of other cultures, to know some vocabulary in other languages; distinguish diverse religious values and beliefs, as well as habits, practices and forms of leadership from other cultures. This dimension is moderately low overall.

Third, the motivational dimension allows us to affirm that all teachers stated that they had a moderately high level in the dimension that includes the taste for interacting with people from different cultures, they feel safe when interacting with people who belong to a culture that is not familiar; they also value the status they would obtain by living or working in a different culture.

Finally, the fourth dimension of cultural intelligence, the behavioral one, shows that all the teachers in the different areas state that they have a change in their behavior when the intercultural interaction requires it, that they adapt to intercultural situations; that their verbal and non-verbal communication change to improve the interaction between different cultural groups adjusting to the cultural environment at all times. In general, this dimension is moderately high.

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# ANALYSIS OF THE PERCEPTIONS OF 2ND YEAR STUDENTS OF FUNDAMENTAL EDUCATION ABOUT SCHOOL BULLYING

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**Abstract.** Cross-sectional study on school bullying. Objective: To identify and get to know the perceptions of children from the 2nd year of the 1st cycle of elementary school in a public school in the city of Niterói, about school bullying. Research tools: Interviews with students. Methodology: qualitative quantitative and descriptive method with content analysis and focus group technique. Sample: approximately 30 students from the 1st cycle of Elementary School. The data collected in questionnaires were treated statistically and the interviews with students were recorded, heard and transcribed and content analysis was addressed to the students' verbal records. Results: This study made it possible to observe that students brought a lot of information about bullying and violence, with clarity and objectivity, which also facilitated the approach to content analysis in the treatment of information. When conducting a study focused on childhood culture, based on the information brought by the students, as an instrument of methodological analysis, it is possible to obtain safe and practical ways to understand this children's universe. After all, they know, understand and help us understand how their thoughts and ideas work on many subjects. The understanding of bullying as a systematic intimidation, can often clarify that behavior of supposed implication of children in this age group and that some professionals and family members understand to be common. In these cases, a formative action for teachers and administrative staff would be pertinent in order to validate what children are bringing to adults in relation to their complaints about other people's behavior.

**Keywords:** Bullying, perceptions, children, elementary education, experiences.

# ANÁLISE DAS PERCEPÇÕES DOS ALUNOS DE 2º ANO DO ENSINO FUNDAMENTAL SOBRE O BULLYING ESCOLAR

**Resumo.** Estudo transversal sobre bullying escolar. Objetivo: Identificar e conhecer as percepções das crianças do 2º ano do 1º ciclo do ensino fundamental de uma escola pública no município de Niterói, sobre o bullying escolar. Instrumentos de pesquisa: Entrevistas a alunos. Metodologia: método quali quantitativo e descritivo com análise de conteúdo e técnica de grupo focal. Amostra: aproximadamente 30 alunos do 1 º ciclo do Ensino Fundamental. Os dados coletados em questionários foram tratados estatisticamente e as

entrevistas com alunos, gravadas, ouvidas e transcritas sendo abordada a análise de conteúdo, aos registros verbais dos alunos. Resultados: Este estudo possibilitou observar que os alunos trouxeram muitas informações a respeito do bullying e violência, com clareza e objetividade o que facilitou inclusive a abordagem da análise de conteúdo no tratamento das informações. Ao realizar do um estudo voltado a cultura da infância, com base nas informações trazidas pelos alunos, como um instrumento de análise metodológica, é possível a obtenção de caminhos seguros e práticos, para a compreensão deste universo infantil. Afinal eles sabem, compreendem e nos ajudam a entender como funcionam seus pensamentos e ideias sobre muitos assuntos. A compreensão do bullying como uma intimidação sistemática, pode esclarecer por muitas vezes aquele comportamento de suposta implicância de crianças nesta faixa etária e que alguns profissionais e familiares compreendem ser comum. Nestes casos seria pertinente uma ação formativa aos docentes e equipe administrativa a fim de validar o que as crianças estão trazendo para os adultos em relação às suas queixas quanto ao comportamento alheio.

**Palavras chaves:** Bullying, percepções, crianças, ensino fundamental, experiências.

# ANÁLISIS DE LAS PERCEPCIONES DE LOS ESTUDIANTES DEL 2º AÑO DE EDUCACIÓN FUNDAMENTAL SOBRE EL ACOSO ESCOLAR

**Resumen.** Estudio transversal sobre bullying escolar. Objetivo: identificar y conocer las percepciones de los niños del segundo año del primer ciclo de la escuela primaria en una escuela pública de la ciudad de Niteroi sobre el acoso escolar. Herramientas de investigación: entrevistas con estudiantes. Metodología: método cualitativo cuantitativo y descriptivo con análisis de contenido y técnica de grupos focales. Muestra: aproximadamente 30 estudiantes del primer ciclo de la escuela primaria. Los datos recopilados en los cuestionarios fueron tratados estadísticamente y las entrevistas con los estudiantes fueron grabadas, escuchadas y transcritas y el análisis de contenido se dirigió a los registros verbales de los estudiantes. Resultados: Este estudio permitió observar que los estudiantes aportaron mucha información sobre el acoso y la violencia, con claridad y objetividad, lo que también facilitó el enfoque del análisis de contenido en el tratamiento de la información. Al realizar un estudio dirigido a la cultura infantil, basado en la información aportada por los alumnos, como instrumento de análisis metodológico, es posible obtener formas seguras y prácticas de comprender el universo de este niño. Después de todo, ellos saben, entienden y nos ayudan a comprender cómo funcionan sus pensamientos e ideas en muchos temas. La comprensión del acoso como una intimidación sistemática a menudo puede aclarar ese comportamiento de supuesta implicación de los niños en este grupo de edad y que algunos profesionales y familiares entienden que es común. En estos casos, una acción formativa para los maestros y el personal administrativo sería pertinente para validar lo que los niños traen a los adultos en relación con sus quejas sobre el comportamiento de otras personas.

**Palabras clave:** Bullying, percepciones, niños, educación primaria, experiencias.

## Introduction

Society has long lived with bullying, but the lack of attention to the phenomenon has had disastrous consequences. In Brazil, it is in the late 1990s and early first decade of the 21st century that researchers such as Canfield (1997), Neto and Ferreira (2000/2001) and Fante (2000/2002), lead to the public recognition of bullying as a public health problem, considering the tragedies resulting from the phenomenon, such as: suicides, crimes, aggressions, among others (Fante and Prudente, 2015, p.135). It is a practice that occurs in all social segments, including school, emotionally destabilizing those who suffer it and strengthening those who practice it. The school, with its social function, has suffered with bullying actions in several sectors: culture, religion, race, gender, etc. Diversity has caused social unrest, which for some can be solved with this type of practices. It has

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become fundamental in the school context the constant ethical and moral orientation that aims to respect others in its essence.

This concern lived daily in the school space contributed significantly to this scientific research. With a pedagogical practice that values the children's discourse, recognizing in it their cultural and social potential and the knowledge acquired throughout their lives, this study aimed to identify and understand the perceptions of 2nd grade students of EMPELEV, about bullying, from their socio-educational experiences. By choosing the interview methodology as a research tool, we aimed to (re)learn about the phenomenon from the verbal records of the children, that is, from their knowledge and experiences in relation to this phenomenon. We have opted for a study prior to a doctoral research, in order to evaluate what Demartini et al (2005, p.2) wisely reveals:

> (...) the growing importance nowadays of learning to listen to children and young people also makes it clear that we, educators and social scientists, are not able to dialogue with children and young people and questions to what extent we are listening to their voices, often silenced?

During the research, it was also possible to recognize the overload of emotions brought by the students' reports. It was identified among the target audience of the research, ideas and behaviors sometimes contradictory both with the education received, as well as with the expectation or vision of the family in relation to their children. In addition, it was possible to verify the perception capacity of some students about themselves and towards others, requiring them a criterion of observation, criticism, and self-criticism.

According to Demartini et al. (2005, p. 2) it is necessary to listen to children's narratives in order to collectively address the serious problems of today's society.

Prior authorization for the research was based on the existing documentation in the school, because it is understood that the school space is a place of learning and research. The identity of the participants was preserved and protected, taking into account that the verbal records revealed their opinions and some information of a more intimate nature.

## Methodology

Cross-sectional study with qualitative, quantitative, and descriptive approach to identify and understand students' perceptions about bullying. The choice of the focus group technique allowed a greater proximity with the respondents who positioned themselves in a relaxed manner, despite the emotional tension brought by the topic, allowing a collective listening that gave the opportunity to know their ideas, concepts, and even their behavioral positions on the subject.

The sample included 30 second-year elementary school students from a public school in Niterói, who were divided into two groups. Regarding the identification of the groups, group 1 was considered to be 14 students from 2nd B and group 2 was considered to be 16 students from 2nd A.

Inclusion criteria for participants: students duly enrolled and attending the 2nd year of the 1st cycle of primary school in the school where the research was carried out; without physical or mental illnesses that interfere with the research. Exclusion criteria: students who do not meet the aforementioned requirements.

In order to systematize the verbal records, tables were prepared with the information related to each of the questions asked in the interview and then the content

analysis was performed. As for the statistical analysis of the students' responses, the Excel program was used to measure the results and create graphs.

At the beginning of the research, when I proposed to hear their perceptions about bullying, two students intervened with the following question: "Is it to say everything? " Thus, passing the concern for judgments and condemnation of their speeches. They were welcome to express their thoughts freely.

Both groups participated in a motivational activity prior to the application of the interview, which included a story whose content referred to the topic of bullying. After the reading, the interpretation of the story was made, based on the behavioral posture of the character. The students were placed in relation to the character and then asked if the character practiced bullying towards the other. Most of them acknowledged the practice.

They then received the information that from that moment on they would participate in an investigation on bullying and that their reports on the subject would be of great relevance to the investigation.

The research included the following data collection in relation to the topic: identification of the similarity or not between the concepts of bullying and violence and conceptualization of these terms based on the knowledge acquired by students in their social contexts; identification of students as victims or perpetrators of bullying; students' perception of who practices bullying and the influence of the family in relation to behavior in the context of violence.

The students' statements, in this research received the nomenclature of "verbal register," a term adopted by Silva (2010), in his research "Use of drawing as a tool for analyzing the perception of risk and fear in traffic." In this research, Silva (2010) used this term to characterize the contributions of children's discourses in drawings, referring to "Graphic register (drawings) X Verbal register (children's speech)". In this study, we will keep the understanding of the students' discourses with the nomenclature of verbal registers (Silva, 2010).

## Results

As the research began with the verification of the similarity or not between the concept of bullying and violence and the conceptualization of the term by students, it is important to clarify the concepts of these terms to understand the students' way of thinking and, consequently, to refer to them theoretically. Paviani (2016, p. 9) clarifies that "the origin of the term violence, comes from the Latin violentia, which expresses the act of violating another or violating oneself. In addition, the term seems to indicate something outside the natural state, something linked to force, impetus, deliberate behavior that produces physical damage such as: injuries, torture, death, or psychological damage that produces humiliations, threats, offenses."

The author also states that, philosophically, "the practice of violence expresses acts contrary to someone's freedom and will, and therein lies its moral and ethical dimension." He also stresses that "these general characteristics of the concept of violence vary in time and space, according to the cultural patterns of each group or time, and are illustrated by the semantic difficulties of the concept."

Regarding the concept of bullying, Silva (2010) clarifies that since it is an English word with no translation in Brazil, the term bullying is "used to qualify violent behavior in the school environment, both for boys and girls. Among the violent behaviors are aggression, harassment, and disrespectful actions carried out in a recurrent and intentional manner by the aggressors.

On the definition of bullying, Fante (2012, p.29) reveals it as "an intrinsically cruel behavior, where the stronger turn the weaker into objects of amusement and pleasure, through "pranks" that disguise the purpose of mistreatment and intimidation."

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In a recent law that went into effect in 2015, bullying is classified as:

> "any act of physical or psychological violence, intentional and repetitive that occurs without evident motivation, practiced by an individual or group, against one or several persons, with the purpose of intimidating or assaulting them, causing pain and anguish to the victim in a relationship of imbalance of power between the parties involved. Systematic bullying is characterized when there is physical or psychological violence in acts of intimidation, humiliation, or discrimination and, in addition: physical aggressions; personal insults; systematic comments and derogatory nicknames; threats by any means; derogatory graffiti; prejudicial expressions; conscious and premeditated social isolation; mockery." (Law No. 13.185/2015)

After providing the concepts and definitions related to the phenomenon, it was time for the students' verbal records. It should be noted that the knowledge provided by them was transcribed in its entirety, analyzed from the construction of their own thinking, taking into account their social experience, and related to the theoretical references on the subject. At no time was a subjective analysis of their ideas made, thus avoiding contaminating the research with the opinion of the adult (researcher), maintaining the focus on the children's perceptions.

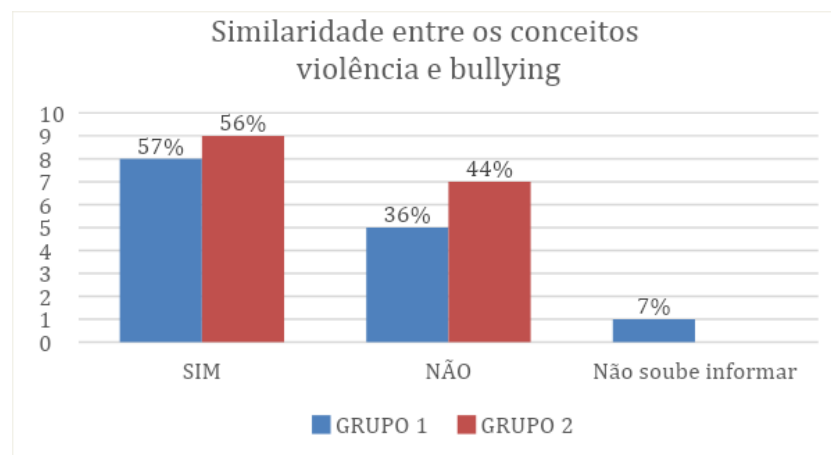### Step 1. Similarity between the concepts of harassment and violence



*Figure 1.* Similarity between the concepts of violence and bullying.
*Note:* Source: (own)

For this question, children should indicate affirmatively or negatively (by raising their hand) whether bullying and violence have the same meaning or not.
*Comment*
According to the results obtained, Figure 1 shows that for students there is a similarity between violence and bullying. When comparing the theoretical concepts between the terms, the relationship between them is noted, differing only in terms of intentionality, which in bullying can be only for pleasure; and continuity, because in bullying it is a repetitive aggression of violence.

Given this conceptual specificity with respect to bullying, and the fact that for the students there may not have been a conceptual orientation about the term, neither in their social life nor in their school life, most of them understand both concepts as similar.

Stage 1.1 and 1.2. Students' perceptions of the conceptualization of violence and bullying.

In order to understand effectively their perceptions of the terms, this question gives students the opportunity to expose the possible similarities and differences between the concepts, according to their knowledge.

Thus, it is important to highlight the theoretical references on the characterization of both concepts, understanding that this procedure will help in the analysis of the students' verbal registers.

Paviani (2016, p. 10-11) reveals that as the concept of violence is broad, it becomes difficult to typify and classify violence as he considers that everything depends on "the chosen criteria, the evidence of empirical reality, the ways of combating violence, and other modalities." But he understands that it is useful to typify it because it allows us to imagine its aspects. Thus, the author mentions the following types of violence: "provoked and gratuitous, real and symbolic, systematic and non-systematic, objective and subjective, legitimized and illegitimate, permanent and transitory violence." The author clarifies that these typifications are didactic with the aim of visualizing the phenomenon of violence, but then makes real violence pass:

> of war, revolution, terrorism, genocide, murder, organized crime, urban violence, violence against children, adolescents, women, rape, sexual harassment, *bullying,* vandalism. It also adds corruption and its derivatives, such as nepotism, bribery, extortion, influence peddling, and other modalities.

It is striking that the author cites the phenomenon of bullying as a specific type of violence, which further reinforces the students' understanding of the similarity between the aforementioned concepts.

Regarding bullying, Silva (2010, p 23-24) classifies it in its forms: verbal, where he considers the following actions: insulting, offending, swearing, mocking, putting pejorative nicknames, making offensive jokes, "teasing"; physical and material: hitting, kicking, punching, hitting, pushing, hurting, pinching, stealing, stealing, or destroying the victim's belongings, throwing objects at the victims; psychological and moral: irritating, humiliating and ridiculing, excluding, isolating and ignoring, belittling or ridiculing, discriminating, terrorizing and threatening, blackmailing and intimidating, tyrannizing, dominating, harassing, defaming, passing notes and drawings among peers of an offensive nature, scheming, gossiping, or rumoring (more common among girls), sexual: abusing, raping, harassing, and insinuating; and virtual: cyberbullying, spreading slander and malice overwhelmingly through communication devices (cell phone and internet).
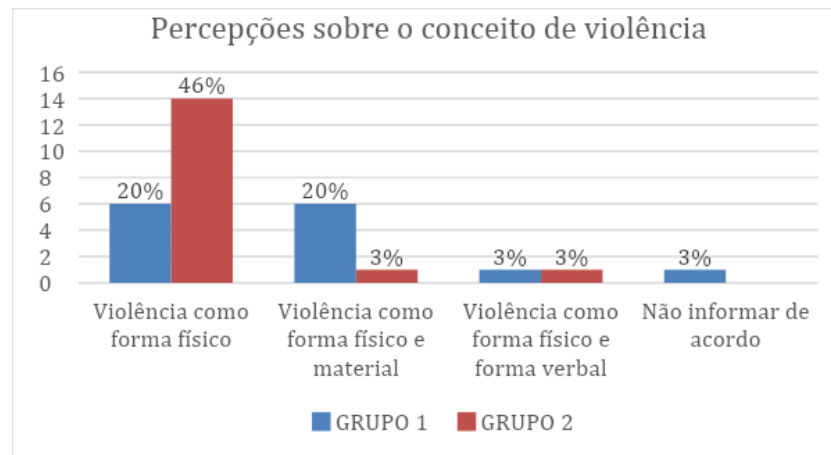
*Figure 2:* Perception of the concept of violence
*Note:* Source: (own)

*Comment*

In their narratives, the students were objective and clear, using language that was understandable and compatible with their sociocultural context.

The verbal records were transcribed and analyzed according to the content provided. To facilitate the analysis of the information provided by the students, the verbal records were classified into three forms of violence: violence as a physical form: characterized by aggressive and/or violent physical contact; violence as a physical and material form: characterized by aggressive and/or violent physical contact, with the use of objects, firearms, or bladed weapons; violence as a physical and verbal form: characterized by aggressive and/or violent physical contact, combined with verbal and/or psychological aggression.

*In* this way, it was possible to verify that most of the children perceive violence as a physical form, brought in their verbal records as: *Pushing, hitting; It is... violence is... something like if the person is hitting you, mistreating you, assaulting you, that is; It is... pulling hair, kicking someone in the face is... hitting them, many things! Hurting, it is.... Pushing others; Pushing, pulling hair; When a person is going to hit you and you don't like it; Hitting; It's when one person hits another; Hitting others; It's when one person wants to hit another; It's when you hit people and they don't like it; When people hit others they don't like it; When they hit you, they kick you, they hit you in the face; It's when one person hits another very hard; When the other hits.*

Although it appears in the survey with a lower percentage, children perceive violence as a physical and material form, characterized in the verbal records of the students as: *Ahhh, shot, hit and bomb and.... death is... shot in the middle of the face, stabbed and .... Hitting the woman (Student H), Wrong. _ Hurt, ... get slippers and hit ....; Shots ... and everything she said to Student H. Shooting, hitting and bombing. It's like flip-flops, extension cords, hitting, punching in the face; Violence is shooting, strafing, SKA, AK (referring to types of weapons), stabbing, machete; It would be you punching a person in the face, sticking the knife in other people's hearts, killing a person for no reason, murdering a person and erasing all the evidence, blaming a person and also shooting a person in the brain.*

With an even lower percentage than the other data provided, violence as a physical and verbal form is also addressed by the students, who refer to it as follows: *Hit, curse, call me fat, call me..., give me band, curse; Punch, hit, curse.*

The verbal records of these students characterized their perceptions of violence. As the aim of this article is to identify and get to know them, we could only stop here,

considering that their knowledge is in line with the theoretical references on the subject. Nevertheless, let us go a little further; let us bring the data on violence only against children and adolescents, although two children mentioned violence against women.

According to the Brazilian Pediatric Society, based on data from the National System of Aggressions and Notifications (SINAN) of the Ministry of Health, an average of 233 types of aggressions (physical, psychological, and torture) against children and adolescents up to 19 years of age are reported daily in our country. In 2017, the sum of these three types of records reached 85,293 notifications, occurring a large part of them in the domestic sphere, or by relatives and cohabitants of the victims. Of this total, 69.5% (59,293) were due to physical violence; 27.1% (23,110) to psychological violence, and 3.3% (2,890) to episodes of torture.

Regarding violence associated with the use of objects, firearms, or targets according to data from the ATLAS Violence 2019 survey, organized by the Institute of Economic and Applied Research and the Brazilian Forum for Public Security (Cerqueira et al, 2018, p. 81), "between the years 1980 and 2017, about 955,000 people were killed with the use of firearms." Furthermore, it is possible to observe in their narratives that the listed weapons are commonly visible in their daily lives in the peripheral communities of large cities. They are heavy weapons used by drug gangs.

From these data, we can verify and conclude that children have adequate knowledge on the subject, either by virtue of their social context, delimited by conflicts, intra and extra-family violence, or based on the information transmitted by the media - television or online (internet).
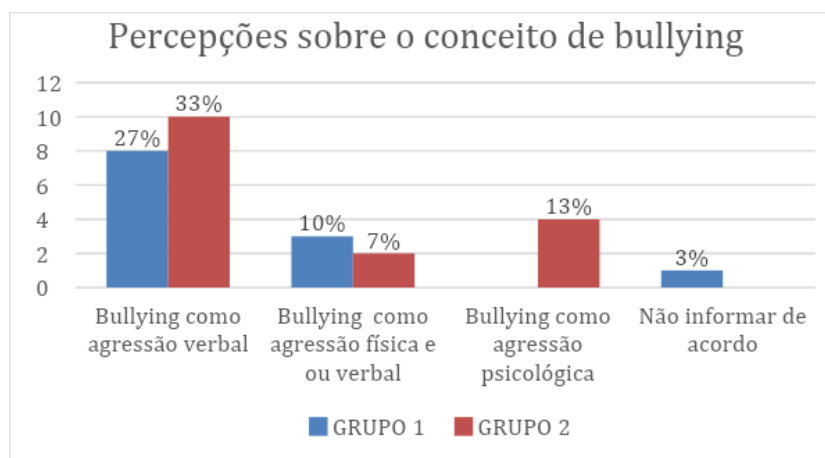


*Figure 3:* Perceptions of the concept of school bullying.
*Note:* Source: (own)

*Comment*

As for the procedure related to the categorization of the forms of bullying, the strategy was maintained in accordance with what was done with the concept related to violence. The proposal consisted of a better understanding of the verbal records of the students in relation to the concept of the phenomenon. As mentioned above, Silva (2010) categorized the forms of bullying by virtue of its varieties as: verbal, physical and material, psychological and moral, sexual and virtual.

For this research, the verbal records were categorized as bullying as verbal aggression: characterized by insults, derogatory nicknames; bullying as physical and verbal aggression: characterized by aggressive and violent physical contact and verbal aggression; and bullying as psychological aggression: characterized by emotional and

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moral harassment. It should be noted that this categorization at the time of data analysis had as its main proposal the separation of aggression: verbal, physical, and emotional.

As we can see in the graph, for the most part, students revealed that they understand the concept of bullying as related to verbal aggression, brought in their records as follows: *Offensive, ... like calling you a whale, fat..., shit; calling you a bore..., calling you fat....; calling you a cuckold, cuckold, asshole, shit, motherfucker, "Get down from there cuckold, get down from there!" (imitating the Northeastern accent); Bullying is an offense, like if the person is calling you fat, whale, ugly, that's an offense; It's calling you horn, ox, cow ... rsrsrsrs, .... dog and ... rsrsrsr no..., wait..., what do you call that thing? Rsrsrsrs stinky snake poop; It could be scaring the person or talking about fat, talking whale, talking giraffe and .... my sister is a giraffe, that's why I call it that... and I keep saying it's an animal, but .... it's a dog; bullying is calling my mom fat, calling you (referring to the teacher), calling... calling other things, calling everybody shit, calling everything boring, idiot; Well, it would be a.... I would be a kind of person who only knows how to talk... ah, you are ugly, you are shameless, heartless, then you hit others in the face for no reason, the teacher punishes you and then, then he does it all over again and then in a while you hit people, the person you don't like and then when you get blamed, then you.... because the teacher defends you so much, you decide to pretend that you are hurt and blame the person you don't like; to curse; to curse; It's like when a person tells you that you are fat, that you are boring; When a person mistreats another person; It's when this person is called fat, toothless; It's when other people insult you; It's when they call you fat, whale; For me it's when a person calls another person what they don't like; When a person keeps calling other people names; There is someone who is fat and the person says fat, whale; It's when a person calls another person something and when a person calls that person fat, thin, toothpick.*

Other children also brought bullying as physical aggression and/or verbal *hitting, calling stupid; Bullying to me is more specific, it's more thrown in the United States, because there the kids are more like, because bullying in the U.S. people put each other's face in the floor, lock in the closet, beat until bleeding these things there; Hitting and cursing; When you curse and hit.* A smaller group revealed that bullying is psychological aggression: *Bullying is picking on people and calling them fat, annoying, irritating; It's like when the person will say you're fat, you're annoying; It's like a person who won't stop picking on the other; It's when a person looks at the other person's ass. It's like him, he looks in the window and keeps seeing people doing number 1 and number 2; It's when one person is always picking on the other; Bullying is to keep picking on people and keep calling people fat, boring, annoying.*

In a recently published article, referring to a cross-sectional epidemiological study of an exploratory nature that consisted of analyzing the prevalence of bullying victimization and aggression and the typologies associated with sociodemographic factors and risk behaviors in students from 6th to 9th grade in the municipality of Campina Grande, Paraíba, Marcolino et al (2018, p.3), reveals the following statistics:

Among the types of bullying suffered by students, psychological bullying (spreading gossip, exclusion from activities, insults, threats, ridicule) predominated in the situations; 23.3% of students reported having suffered this type of school violence. While physical bullying (slapping, punching, kicking, pushing) and virtual bullying (sending messages by telephone or Internet of threats, insults, ridiculing, offenses) reached 15% and 5.5% of students, respectively.

It should be noted that the study considered swearing as psychological harassment.

Although the statistics have provided a group of students with an older age range than those surveyed for this article, a comparative analysis between this article and the data offered by the research of Marcolino et al (2018) is possible, because we are really

providing real data subject to projections. For if today primary school students report a higher incidence of verbal aggression (insults), considered in the research of Marcolino et al as psychological, (insults among others), it is possible that this type of aggression will be maintained in the future. Based on this assumption, we can observe how much children know about what they say.

When comparing the two conceptual tables of violence and bullying, it is clearer that the differentiation between the concepts may have been recognized by the form of aggression applied, in violence the students pointed out a greater incidence of physical and material form and for bullying the verbal form. This may be related to their own school experiences. The students know that there are occasional conflicts in which sometimes verbal and/or physical aggressions occur that have a context with a beginning, a middle, and an end. However, they also know that there are those conflicts without explanation, without meaning, in which the aggressor insinuates for the sake of insinuating, curses for the sake of cursing, attacks for the sake of attacking, and that only end up bringing harm to the one who is offended or attacked.

We can also understand that these children's narratives provide not only the students' interpretation of these concepts, but mainly their understanding of them due to their social experiences. Vygotsky (1992, 28) helps us to understand this by clarifying that:

> concepts are cultural constructs, internalized by individuals throughout their development process. The attributes necessary and sufficient to define a concept are established based on the characteristics of elements found in the real world, selected as relevant by different cultural groups.

Giving continuity to their knowledge from their verbal records, the research gives the student the possibility to talk about their social experience in relation to bullying, either as a victim or as a victimizer. For this purpose, it is important to clarify the characteristics referred to the protagonism of bullying: victims, aggressors, and spectators.

Regarding the characteristics of the victims, Silva (2010, p. 37) clarifies the existence of the typical victim, the provocative victim, and the aggressor victim.

With respect to

> the typical victim, the author reveals that they are students who have poor socialization skills. In general, they are shy or reserved, and are unable to react to provocative and aggressive behavior directed at them. They are often physically weaker or have some "mark" that makes them stand out from the majority of students (chubby, thin...); they are of different race, creed, socioeconomic status, or sexual orientation.

The provocative victim, on the other hand,

> are those capable of provoking aggressive reactions against themselves in their peers. They are usually hyperactive, impulsive, and/or immature children who create a tense atmosphere at school without any explicit intention. They are victims who end up camouflaging the real aggressor (Silva, 2010, p. 40).

The victims of bullying are the ones who reproduce the abuse suffered to other victims, thus causing a vicious circle of bullying (Silva, 2010, p. 41).

As for the aggressor

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is the one who victimizes the weakest. The aggressor, of both sexes, is usually an individual who shows little empathy. He is often a member of a broken family, in which there is little or no emotional relationship. (...) He feels a compelling need to dominate and subdue others, to impose himself through power and threat, and to get what he wants. May boast of real or imagined superiority over other students. Has a bad temper, is impulsive, is easily angered, and has little resistance to frustrations (Fante, 2012, p.73).

We also have in this context of the bullying phenomenon the spectator that Fante (2012, p. 73) explains as the student who witnesses bullying, but does not suffer or practice it. He represents the vast majority of students who live with the problem and adopt the law of silence for fear of becoming a new target of the bully.

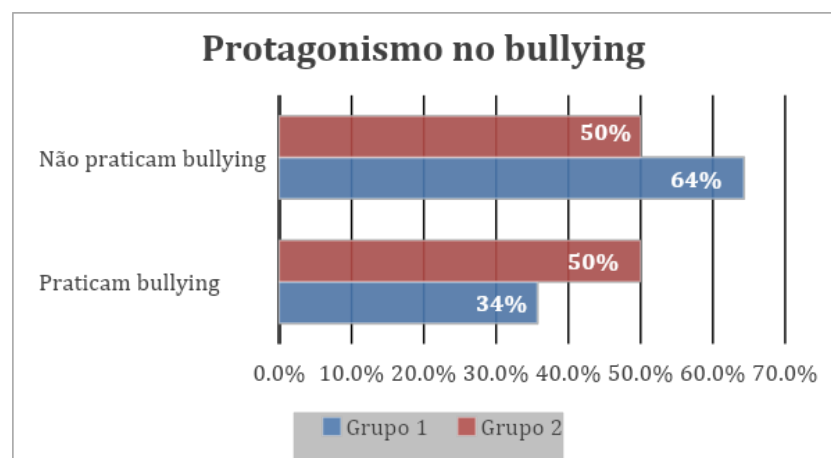### Stage 2: Bullying protagonism



*Figure 4:* Protagonism in school bullying
*Note:* Source: (own)

Throughout the research process, the students presented themselves in a very natural way. There was no judgment of the position of one student or another, not even criticism when one accused another. There were reports, but no conflicts. At this point in the research, when their role in relation to bullying was questioned, that is, what is their position in relation to the phenomenon, the students let their feelings about it show, they see themselves as victims, spectators, or even aggressors. It was a very interesting experience because they were able to recognize themselves in the context and assign them authorship or guilt, characterizing the capacity they have to perceive themselves.

The ability to perceive themselves and the other, the empathy perceived in the moments when they revealed their victims were situations that provided greater sensitivity at the time of the research, which allowed a glimpse of the students' competence and discernment in front of social issues of great relevance for the processes of human development. Gomes and Aquino, (2019, p. 5) reinforce the competence of the child as a social subject, stating that:

> childhood and children are important now, in the present era, because of the position and function they occupy in society as a whole, because of the active role they play in the generational division of labor and in the construction and determination of their lives, in cultural production and dissemination, in the reorganization and propagation of educational and cultural ideas, in politics (albeit latent), and in the

economic movement it generates. Children's lives are interconnected with those of other subjects - adults, youth, and the elderly - placing them in a constant position of action and participation in their spaces and times, which guarantees another understanding of the concept of childhood and the understanding that children are social agents.

It can be observed in the results shown in Figure 4 that most of the children exposed that they do not practice bullying (57%) and the others revealed the practice of the phenomenon (43%). According to statistics regarding the incidence of bullying in the school space, with students from 6th to 9th grade in the age range between 13 and 17 years, the PISA survey (2015) highlighted that 7.4% of students reported feeling humiliated by provocations and 19.8% had already practiced bullying. This is contrary to what has appeared in this research, but it may become a future reality if there is no ethical and moral work in the school context, taking into account that those who suffer bullying may also practice it considering their frustration and inability to overcome it.

Although Fante and Pedra (2008, p.61) clarify that bystanders are children from the whole school who witness bullying actions and do nothing to intervene. At the time of the interview with the groups, these bystanders appeared narrating facts seen. In their narratives it was clear the intention of repudiation and denunciation for those who practice bullying and solidarity for those who suffer the action. Fante and Pedra (2008, p. 61) explain this behavior because "bystanders who constantly witness the embarrassing situations experienced by the victims suffer the consequences. Many bystanders repudiate the aggressors' actions, but do nothing to intervene."

### Step 3: Characteristics of the bully

Seeking greater depth in their impressions for the research, step 3 brings the students' impressions of the bullying practitioners. Thus, the following results were obtained about the characteristics of the bully: *Bad (4); Impatient (2); Ugly (6); Beautiful (1); Bitter chocolate under the carpet (1); Bad without feelings; Heartless; No love, no affection; Represents for me a person involved; Abuser who gets involved every day with me; A person who has no heart for people; Threatening; Mistreats others, is annoying; Picks on me a lot and is also a bad person who has more things than you; Naughty; Is popular, is conceited; Has deficiencies; A person with no heart, no brain, and ridiculously boring; Boring, ridiculous, and ugly.* From group 2, two students did not know how to identify the bully.

It is striking that in their responses, the students identified the aggressor as a person who presents several behavioral demands, such as impatience, perversity (in the sense of viciously, unfeeling, heartless); neediness (without love, without affection); inconvenience (annoying, annoying, intrusive). As for the use of the words ugly, pretty, these are not related to physical appearance, but to the behavioral attitude adopted that in a social context is not well seen. We can clarify that this type of characteristic (ugly and pretty) is usually used by relatives when the child is young and presents certain behaviors socially, i.e., when he/she behaves correctly he/she is pretty and when not, ugly. As for the use of the expressions: *he has deficiencies; ... no brain...;* we can consider that the students understand the bully as a sick person (regarding the deficiencies) and that he does not think before doing something. Another interesting situation to highlight in the research is that two students created and used the term bullyist to identify the bully and behind this term brings as a characteristic the inconvenience (implies with everyone).

It is possible to understand children's verbal registers by their clarity and objectivity, and even when they express themselves using a single term, or from

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somewhat more subjective answers, it is possible to know their concepts. Vygotsky, quoted by La Taille (1992, p.30), explains about children's concept formation:

> the language of the cultural group in which the child develops directs the process of concept formation: the developmental trajectory of a concept is already predetermined by the meaning that the word designating it has in the adult language.

Regarding the metaphorical response of the student in group 1 "bitter chocolate under the carpet," he was asked to clarify the subjectivity of his answer and, as incredible as it may seem, his answer was clear and objective.

"Bitter chocolate represents the person. It's very boring, it's very bad. Now under the rug is that it is no good for anything, it is no good for anything.

I understand, so what is under the carpet is useless? Is it like a hidden dirt? Can it be? (teacher)

No, no... I just imagined that under the carpet is the floor."

With this explanation, the student is able to understand that the bully is an uncomfortable (boring) and perverse (bad) person with no social function.

Another situation that arose from a student refers to the following expression: "He gets *involved with me a lot and he is also a bad person who has more things than you."* Three situations can be highlighted in this expression: involvement, perversity, and ostentation. There are children who have the opportunity to have more toys, more school supplies, and other objects to which others do not have access. Moreover, in this way, they understand that they are superior to others because of that. Then they display their belongings as trophies in an attempt to humiliate others. Most likely, the child who made this revelation tried to expose this quote *"who has more stuff than you"* as one of the characteristics of a bully.

Vygotsky quoted by La Taille et al (1992, 28), clarifies that

> concepts are cultural constructs, internalized by individuals throughout their development process. The attributes necessary and sufficient to define a concept are established on the basis of the characteristics of the elements found in the real world, selected as relevant by the different cultural groups. It is the cultural group in which the individual develops that will provide him with the universe of meanings that organizes the real world into categories (concepts), denominated with words of the group language.

### Stage 4: Influence of the family on children's behavior in the face of violence

In step 4, the students exposed the occurrence or non-occurrence of family influence on their reactions to violence in the school context. The aim was to find out from the students whether their families guide them in relation to aggressive retaliatory attitudes towards bullying practices.

In group 1, 9 students said that their families told them not to retaliate, not to hit back. Within this group, three students explained that their families advise them to seek an adult at the time of the aggression, two others reported that although they are advised not to hit back, they do hit back and another (1) student revealed that the family does not advise them to hit, but advises them to defend themselves. Some students clarified that the family guided not to hit back and pointed out as family members favorable to non-aggression, the father, the sister, the mother, among others.

Regarding the encouragement of aggression, four students pointed to the father (1), the mother (2), and the sibling (1) as the instructors for the child to retaliate for the aggressive action. The student who reported receiving guidance from the father said that he tells the father that he needs to talk to solve the problems.

One (1) student was direct in saying that the mother is different, and that she directs to fight.

In group 2, eight (8) students revealed that their families do not encourage them to retaliate to the aggression suffered and of this group 1 student said that he receives guidance from his mother to talk to an adult (or teacher). Only one student was unable to respond, the others answered very naturally and authentically.

Regarding incitement to hit back, one (1) student said that he receives guidance from his family to hit back if he is assaulted.

Others clarified that the family does not advise them to retaliate against the aggression, but the father does (3), the brother (1), the grandmother (1). Two (2) students revealed that they react and counterattack on their own, but one of them said that the mother advises them to talk to the teacher, to the adult. Moreover, if he sees that he has not solved it, he reacts on his own and another said that the family does not teach, but gives it back to him right away.

It could be seen that there is an average between families advising not to fight back and those encouraging them to "defend" or fight back. There were a total of 15 families, but of this group, three students, even when told not to hit back, reported hitting back. Also of note were the two children who said they hit back on their own without family support, either positive or negative. What is striking about these responses is that the children reveal the person in the family who guides them to hit back and the one who advises them not to do so. Another interesting fact concerns the child who, although encouraged by the parent to fight back, reacts by not accepting such guidance and continues to guide the parent who is talking about resolving conflicts.

It can be seen that there is family influence, but also the understanding of some children in relation to the facts and the consequences of certain actions. Antunes (200, p. 13 and 14) explains that

> (...) each man is a unique creature, bound to certain natural laws but free to conceive others. This incredible mixture of possibilities makes the types of "personalities" that exist among human beings almost infinite. Your "personality" comprises the way in which the set of characteristics inherited from your parents and acquired in your relationship with the world is organized in you. (...) It is clear that your personality harbors things that have been born in you, whether you like them or not, and others that have been constructed in your relationship with the world. The things inherited by you, which may naturally be different from those inherited by your brother, as long as your parents are the same, characterize your "temperament," while the things you acquire characterize your "character."

The influence of the paternal personality on the children was clear in the questioning in relation to the family orientation in conflict management. Making it possible to observe how much of their personalities, temperaments, and character were exposed here.

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**Discussion and conclusions**

This study allowed us to observe that the students provided a lot of information about bullying and violence and were clear and objective in their answers allowing the understanding and knowledge of their ideas and thoughts. Thus, it was considered that approaching the culture of childhood, with the use of verbal records as a methodological tool of analysis, is a possible, safe, and practical way, after all children know, understand, and help us to understand how their thoughts and ideas on many topics work. Arroyo (2016) refers to the audience of students in the research because, in addition to valuing them, it allows greater knowledge and understanding about them and reveals:

> (...) by giving voice to those who have been silenced for so long, their self-image can destroy so many stereotypical images that weigh on them. Their discourses can be less prejudiced than many discourses of the media, politics, and even pedagogy. Nothing better to revise our vision of childhood, adolescence, and youth than to confront them with their own vision. (Arroyo, 2016, p.81).

Throughout the research process, the students proved to be comfortable with the questions and their answers. They expressed their thoughts without fear of judgment, cited examples, experiences, and much knowledge on the subject after all the topic brought up, besides being very serious, because of the serious consequences in terms of emotional health of our children and youth and today and it is within a space where they want to find safety and respect that is the school.

The students demonstrated in their verbal records that they know violence and bullying in its different forms, harassment, physical aggression with and without the use of different types of weapons or objects, offenses, insults. And that despite having provided similar characteristics in relation to the terms, they reveal that they are different concepts, having prevailed for violence the physical aggression (corporal aggression) and with respect to bullying, the verbal aggression (moral, psychological, and emotional aggression). They consider the bully as a person with emotional (needy, without feelings), behavioral (bad, ugly), and even pathological deficiencies (brainless, disabled). Students are aware and understand that violence is not the best option, but sometimes some opt for this type of attitude, either because of family orientation or because of protective instinct. Others understand that dialogue and help from adults (teachers or not) facilitate the conflict mitigation process. These are choices and a critical sense in relation to certain guidelines that they receive in their social contexts or that they define by personal choice.

As it is perceived, students have the capacity to expose their social experiences, to know and recognize important topics to be discussed in the school context, to the point of contributing effectively in their production of thought and knowledge. Thus, it can even be verified that from their knowledge and experiences it is even possible a psychosocial intervention for the improvement of socio-educational relationships.

An important point to highlight in this research refers to the importance of understanding bullying as systematic bullying, since in the school context, it can often clarify that behavior of alleged involvement of children in this age group and that some professionals and family members understand that it is common. In these cases, a training action to teachers and administrative staff would be pertinent to validate what children are bringing to adults regarding their complaints about the behavior of others.

It is important to think about interventions that seek to understand this action in a broader way, starting from a conversation with children, families, and education professionals, even with the aim of minimizing the actions of bullies or even creating a

practice so that this type of behavior is not postponed in other phases of development of these children.

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