ISSN:2603-5820

MLS EDUCATIONAL RESEARCH

January - June, 2021

VOL. 5 NUM. 2



http://mlsjournals.com/Educational-Research-Journal

MLS - EDUCATIONAL RESEARCH

Vol. 5 ● Núm. 2 ● December – Deciembre – Dezembro 2021

ISSN: 2603-5820

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MLSER is a scientific publication that is published twice a year, in June and December.

SUMMARY • SUMARIO • RESUMO

- Editorial 5
- Inclusión de las neurociencias en la formación del docente universitario..... 7
  Inclusion of neurosciences in the training of university teachers
  Lorena Mendoza Anaya, María Cristina Caramón Arana, Arwell Nathan Leyva Chavéz. Universidad Autónoma de Chihuahua (México) / Universidad Nacional Autónoma de México (México).

- La simulación de entrevistas familiares en la formación de maestros y orientadores..... 26
  The simulation of family interviews in the training of teachers and counsellors
  Camino Ferreira, María José Vieira. Universidad de León (España).

- Estado del arte sobre la relación del estrés académico y el rendimiento en estudiantes universitarios, con la mediación de dos variables. 39
  State of the art on the relation of academic stress and achievement in university students, with the mediation of two variables
  Nora Guadalupe Valenzulea Ramos, Abel Quiñones Urquijo. Universidad San Sebastián (México) / Universidad Internacional Iberoamericana (México).

- Percepción de competencias en las prácticas profesionalizantes e inserción laboral del Técnico en Redacción de Textos..... 59
  Perception of competences in professionalizing practices and labor insertion of the Technicians in Text Writing
  Lina Beatriz Mundet, Jesús Manuel Peña Muñoz. Universidad Internacional Iberoamericana (México).

- La necesidad como factor para aprender una segunda lengua..... 73
  Necessity as a factor to learn a second language
  Leandro Venier, Antxon Álvarez Baz. Escuela Internacional de Kuala Lumpur (Malasia) / Universidad de Granada (España).

- Aprendizaje basado en datos y combinaciones léxicas: una propuesta didáctica con cuasisinónimos 88
  Data-driven learning and lexical chunks: teaching Spanish near synonyms
  Magdalena Abad Castelló, Antxon Álvarez Baz. Instituto Cervantes de Mánchester (Reino Unido) / Universidad de Granada (España).

- El uso de herramientas tecnológicas en entornos virtuales para el desarrollo de la producción oral en Inglés en el Departamento de Lenguas de la Universidad Nacional Autónoma de Hondura..... 105
  Use of technological tools in virtual environments to develop English oral production in the foreign languages Department of the National Autonomous University of Honduras
  Bessy Valeska Mendoza Navas, Fermín Martos Eliche. Universidad Internacional Iberoamericana (Honduras) / Universidad de Granada (España)

- La confianza como empoderamiento del desarrollo humano en la policía federal de México (Guardia Nacional México). 120
  Trust as the empowerment of human development en the federal mexican police (Mexican National Guard)
  Sandra Bárbara Oriak Ortega, Martín Eliseo Tamayo Ancona. Universidad Internacional Iberoamericana (México).



Editorial

The number 2 of volume 5 that closes the year 2021 presents, as usual, an amalgam of research that responds to different realities and enriches the international panorama. The first block includes studies related to students and teachers, beginning with the one on neurosciences in university teacher training in the context of the Autonomous University of Chihuahua (UACH). It consists of a mixed type study with exploratory and correlational pre-test, intervention course, and post-test. The findings showed that the previous knowledge that teachers have allows them a greater appropriation of the thematic contents. The most relevant result found is that they accept and consider important to include neuroscience topics in their training.

In a similar vein, the training of teachers and counselors analyzed from their competencies in oral communication is registered. The research, developed in the Faculty of Education of the University of León, carried out a training action in the Degree in Primary Education and in the Master's Degree in Educational Guidance in order to develop and evaluate the mastery of oral communication through the simulation of interviews with family members.

Similarly, the relationship between academic stress and performance in university students is analyzed. In this case, it is a review of primary sources (articles and doctoral theses) from a positivist position of inquiry and measurement of scientific production. Five traces are identified that verify the binding relationship between stress and academic performance at the university mediated by academic goals and learning strategies.

A second block of articles is structured around language and texts. The first one is linked to the previous perspective, dealing with the perception of competences in the professional practices and labor insertion of the Text Writing Technician. The existence of few differences is confirmed, and a proposal is made for a program of continuous training of competences adjusted to the changes detected at work and indispensable for the labor insertion of the graduate text writer.

Need as a factor in learning a second language is the study that examines the need to learn English as a second language and its impact on motivation and performance of students at the Kuala Lumpur International School in Malaysia. The findings found in this study are relevant and have implications not only for a student body similar to these characteristics but for all second language classes as well.

In another line, the article on data-based learning and lexical combinations is structured. This is about a didactic proposal with near synonyms that aims to show how certain activities with linguistic corpora integrated in a didactic unit can help to deepen the lexical-semantic knowledge of lexical units. The results show, after the implementation of the didactic unit, satisfactory perceptions of the different activities carried out and a positive attitude of the students towards the designed tool at the same time.

Likewise, the development of oral production and the use of technological tools in English language virtual environments in the Department of Languages of the National Autonomous University of Honduras is analyzed. The study verifies how digital resources and tools are being used to work on oral production in the virtual teaching of English. It is concluded that although the teachers were not prepared for virtual teaching and had no experience, they had a generative pedagogical resilience in the face of the crisis that the global emergency generated by the pandemic of the COVID-19 virus has necessitated.

The last article of the issue focuses on trust as empowerment of human development in the Mexican federal police. Its objective was to determine the confidence as empowerment of human development of the Mexican National Guard, knowing their personal and professional needs and concerns. For this, surveys and casual talks were conducted, reaching the conclusion of the need for a comprehensive human development that generates confidence within the institution and an integral curriculum with the capacity to respect job profiles and functions.

Antonio Pantoja Vallejo
Editor Jefe / Editor in Chief / Editor Chefe

MLS - EDUCATIONAL RESEARCH

http://mlsjournals.com/Educational-Research-Journal

ISSN: 2603-5820



How to cite this article:

Mendoza Anaya, L., Camarón Arana, M. C. & Leyva Chavéz, A. N. (2021). Inclusion of neurosciences in the training of university teachers. *MLS Educational Research, 5*(2), 7-25. doi: 10.29314/mlser.v5i2.554.

INCLUSION OF NEUROSCIENCES IN THE TRAINING OF UNIVERSITY TEACHERS

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Abstract. The objective of the research was to determine the relationship between the acquisition of knowledge about neurosciences in education in a sample of teachers belonging to the Autonomous University of Chihuahua and the acceptance by teachers to receive training on the disciplines that make up neuroscience. The study design was mixed, experimental with pre-test, intervention course and post-test, exploratory and correlational. An exclusive Ad hoc intervention course was designed for this research divided into five thematic areas with face-to-face classes and activities on the academic platform, the duration was one month. To measure the degree of initial knowledge about neurosciences, a survey adapted from what was published by Im (2015) to measure the gain in knowledge after having participated in the intervention course, the survey adapted from what was published by Herculan- Houzel (2002). A structured interview adapted from what was published by Howard-Jones, Pickering and Diack (2007) to measure the degree of acceptance of including neuroscience topics in their teacher training. The findings show that the previous knowledge possessed by the teachers allowed them a greater appropriation of the thematic contents, women obtained a greater gain in knowledge than men and the academic degree of master's or doctorate does not influence the gain of knowledge obtained by teachers. The most relevant result found is that teachers accept and consider it important to include neuroscience topics in their training.

Keywords: Neuroscience, brain, learning, teaching, university.

INCLUSIÓN DE LAS NEUROCIENCIAS EN LA FORMACIÓN DEL DOCENTE UNIVERSITARIO

Resumen. La investigación tuvo como objetivo determinar la relación entre la adquisición de conocimientos sobre neurociencias en la educación en una muestra de docentes pertenecientes a la Universidad Autónoma de Chihuahua (UACH) y la aceptación por parte de los docentes a recibir formación sobre las disciplinas que integran la neurociencia. El diseño del estudio fue mixto, experimental con pre-prueba, curso de intervención y post-prueba, exploratorio y correlacional. Se diseñó un curso de intervención Ad hoc, exclusivo para esta investigación, dividido en cinco rubros temáticos con clases presenciales y actividades en plataforma académica, la duración fue de un mes. Para medir el grado de conocimiento inicial sobre neurociencias se aplicó una encuesta adaptada de lo publicado por Im (2015), para medir la ganancia de conocimiento después de haber participado en el curso de intervención se aplicó la encuesta adaptada de lo publicado por Herculano Houzel (2002). Se aplicó una entrevista estucturada adaptada de lo publicado por Howard Jones, Pickering y Diack (2007) para medir el grado de aceptación de incluir temas de la neurociencia en su formación docente. Los hallazgos muestran que los conocimientos previos que poseen los docentes les permitió una mayor apropiación de los contenidos tematicos, las mujeres obtuvieron una mayor ganancia en conocimiento que los hombres y el grado académico de maestria o doctorado no influye sobre la ganancia de conocimiento obtenido por los docentes. El resultado más relevante encontrado es que los docentes aceptan y consideran importante incluir temas de la neurociencia en su formacion.

Palabras clave: Neurociencias, cerebro, aprendizaje, enseñanza, universidad.

Introduction

With the passing of time many paradigms have appeared in the field of education, recently ambitious studies have emerged as neurosciences that have given a new perspective of teaching-learning that comes to support and facilitate the work of teachers.

Neurosciences are a set of disciplines that arise from the need to know and understand the development and cognitive processes carried out in the brain, an organ that is considered the most complex of all the organs that make up the human body.

Until a few years ago, neuroscience and education had little or no rapprochement. The contributions that neurosciences have made to the field of education mark a watershed between traditional education and education based on discoveries about the functioning of the brain and cognitive processes. Nowadays, it is necessary for all those involved in education to know about how the brain works, especially teachers, since they are responsible for teaching their students.

Domínguez-Márquez (2019) highlights that in order to improve education systems it is first necessary to know how the brain works, what are its structures, areas, and main functions; and once you have this knowledge, you must understand how the learning process is; and when teachers have this knowledge, they will implement the contributions of neuroeducation in their teaching practices, promoting improvements in learning.

According to the world Educational, Scientific and Cultural Organization (UNESCO, 2015), recent developments in the various disciplines of neuroscience are increasingly arousing the interest of the different education communities that seek to better understand the interactions between biological processes and learning.

Barrios-Tao (2016) explains that educational actors, scenarios, and processes should not only be aware of the link between education and learning with the neural and biological bases of these processes but should also know and consider strategies to strengthen the aspects of the environment that influence brain development.

For its part, the Organization for Economic Co-operation and Development (OECD, 2009) indicates that neuroscience should illuminate the role of the teacher, helping them to identify the methods that have the most profound impact on learning, and to recognize the key contribution of neuroscience to the educational purposes of students.

Literature review

The dizzying changes taking place in modern societies force education systems to reflect and provide answers to the following questions formulated by UNESCO (2015), "What education do we need for the 21st century? What is the purpose of education in the current context of social transformation? How should learning be organized?"

Thirty years ago, good teaching was defined as lectures, content classes, and quiet students sitting at their desks, the question that must be asked by the different stakeholders in education is the following, "Is this how students learn best?" Current education proposes that educators must combine the findings of brain research to improve their teaching strategies (Bonomo, 2017).

Stafford-Brizard, Cantor, and Rose (2017) explain that the transformation of teaching through science will come from deeper access and reciprocal connections between the fields of science devoted to human development and educational practice, and that scientists will have greater access to the complexity of learning environments and the many factors at play in these environments.

The emergence of brain research projects around the world highlights the importance of neuroscience research. Neurosciences are the set of disciplines whose research focus is the nervous system, with an emphasis on brain activity (Gago-Galvagno and Elgier, 2018).

Several authors have been given the task of structuring a definition of what neuroscience is, among them are Falco and Kuz (2016), who define neuroscience as a branch of knowledge in which several subdisciplines converge, which have in common the study of the nervous system and everything related to the factors that influence it.

UNESCO (1995, p. 1) states that neuroscience is "a new discipline that encompasses the biology of the nervous system, the human sciences, the social sciences, and the exact sciences."

The field of mind, brain, and education was established to connect multiple disciplines for the purpose of deepening and accelerating the impact of research and its translation into educational practice (Stafford et al., 2017).

The knowledge and understanding of what neurosciences are and the contributions they make to the field of education are of great importance for educators. Segovia-Baus (2016) explains that the new disciplines that have a powerful impact on the knowledge and understanding of the functioning of the brain bring together classical disciplines and novel interdisciplinary fields, with purposes oriented to the search for answers about the structure and functioning of the brain that allow the actors of education to improve the teaching and learning processes.

In the same vein, Stafford et al. (2017) note that multiple strands and fields of research must intersect to make connections and develop with each other, jointly contributing to a deep understanding of child and adolescent development and learning in the context of educational practice, as these interdisciplinary connections develop in the service of improving educational practice and collaborations emerge, it will be possible for scientists to employ and establish multiple lexicons and definitions to provide greater consistency and coherence between the fields of science and education.

The results of neuroscience research have contributed to the understanding of human learning from different perspectives, this knowledge should be taken up by teachers to support the teaching-learning process, as they serve as a basis for the curriculum (Calzadila-Pérez, 2017).

In the ongoing quest for better education at all levels, authors Immordino-Yang and Gotlieb (2017) assert that neuroscience aids educational research by elucidating the neural mechanisms underlying cognition, social and affective processing, and cultural learning. Specific benefits for education could include constraining and supporting existing educational theories by testing their biological plausibility and leveraging knowledge about brain mechanisms to inform the development of new educational theories and research questions.

The interdisciplinary area of educational neuroscience is made up of all the scientific disciplines of research that can contribute to education, including developmental psychology, cognitive neuroscience, genetics, and technology, together these disciplines carry out a valuable search with real potential to improve learning (Brookman-Byrne, 2016).

When a collaboration is established between the field of education and the disciplines of neuroscience, the figure of the educator emerges as a key to achieving progress towards an education that is based on scientific contributions. The researcher, Paniagua (2013), explains that since learning is a process that modifies the brain, the role of the educator is paramount in this new approach to education, and that through the acquisition of this knowledge all educators revalue their role and are committed to updating their knowledge in the area of neuroscience.

The authors, Campos, Lira, and Sabogal (2014), point out that the educational system has the possibility of transforming and strengthening itself based on the studies and contributions made by the disciplines that integrate neuroscience.

Neuropsychology is one of the disciplines that integrate neuroscience. Delgado (2017) mentions that neuroscience has influenced and transformed psychology in two aspects:

a) The theoretical in the way of conceptualizing the different psychological processes and phenomena that are studied by this science.
b) The modification of practice by changing the way of understanding the causes of normal and abnormal behavioral disturbances.

Another discipline of great relevance is Cognitive Neuroscience. According to Postle (2015), the tools and methods used to study the neural basis of human behavior is what distinguishes cognitive neuroscience from other disciplines, it has the methods and traditions of neuroscience and the primacy given by the understanding of the biological basis of mental phenomena.

The National University of Distance Education (UNED, 2016) publishes that Cognitive Neuroscience focuses on the study of the functioning of the neural mechanisms involved in the psychological processes that characterize human cognition, understanding that this discipline covers not only the strictly cognitive processes (attention, memory, language, etc.) but also the emotional processes that powerfully influence cognition.

Neurodidactics as a discipline of neuroscience has among its research topics according to Falconi-Tapia, Alajo-Anchatuña, Cueva, Mendoza-Poma, Ramírez-Jiménez, and Palma (2017):

- The study of brain bases,
- Teaching and learning processes,
- Methodologies used by educators in school contexts.

The authors also mention that all of these study factors are key to promoting learning.

Paniagua (2013) who explains that neurodidactics is a branch of pedagogy that is based on neuroscience, which aims to design more efficient didactic and methodological strategies that allow the promotion of greater learning in terms that educators can interpret.

Educational institutions should be aware that today's students learn differently, that they appropriate knowledge under different schemes, and that the teaching methods used should take into account that we all have the same set of systems and brain organization; however, we are all different. The factors that make us similar are the same factors that make us different, giving rise to diversity (Saavedra, 2001).

Paniagua (2013) emphasizes that all people have the same brain structure, but no two people think, decide, or act in the same way. Yhis new understanding of diversity based on knowledge of brain function should lead to a paradigm shift in the educational field, influencing all aspects of education, including curricula, for it is essential that the educator assumes a new role and prepares to exercise his profession from this new position.

To address the diversity of students referred to, educational institutions at all levels need to innovate and optimize the teaching process as well as strengthen the learning process, and to achieve this the authors Falconi-Tapia et al. (2017) point out that the following aspects should be taken into account:

- Know in greater depth the functioning of the human brain.
- Motivate students' attention and curiosity when explaining the topics studied.
- Understand that motivation is a decisive mental factor for students to generate meaningful learning.
- Diversify teaching strategies and promote positive and balanced emotional states.
- Recognize, in a timely manner, learning disabilities to support students.
- Value the different types of skills and abilities of students.

Therefore, it is necessary that the educator, as a fundamental factor in the educational process, puts into practice operational, methodological, and socio-emotional neurodidactic strategies that promote a creative, cooperative, and flexible learning environment for the construction of knowledge (Falconi-Tapia et al., 2017).

One of the most significant contributions made by neuroscience to education is the discovery that the brain constructs patterns from experiences acquired in everyday life, and that emotions, understanding, and ideas are recognized by the brain as patterns. Likewise, it was revealed that the stability or confidence of these patterns is accepted or challenged by an associative memory system that quickly retrieves memories to judge the accuracy and usefulness of those patterns in new contexts and environments (Schwartz, 2018).

Another important contribution to the construction of learning contexts is related to creativity. In this regard, Benedek and Fink (2019) highlight in their research that it is through cognitive and neuroscience research that several characteristic mechanisms of cognition have been revealed, including constructive memory processes to build novel representations and support active imagination.

While neuroscience has clarified the mechanisms that underpin learning, accurate dissemination of this knowledge to educators has been limited (Dubinsky, Guzey, Scwartz, Roehring, MacNabb, Schmied, Hinesley, Hoelscher, Michlin, Schmitt, ellingson, Cang, & Cooper, 2019).

Teachers' limited knowledge of adolescent development and the application of scientific research beyond the academic domain is one of the most obvious demonstrations of the gulf between science and educational practice; for teachers, grounding the work of education in developmental science involves understanding not only how development occurs but exactly what needs to be taught to contribute to students' holistic development (Stafford -Brizard et al., 2017).

In this regard, researcher Coch (2018) makes an important point:

Most teacher preparation programs do not address neuroscience in their curricula; this is curious since learning occurs in the brain and teachers encourage and facilitate learning; knowledge of neuroscience should be merged with teacher training programs, which will arise remarkable benefits such as:

- Deepen the knowledge of pedagogical content from multiple perspectives; understanding neuroplasticity and its educational implications;
- Recognize the power of context as a factor impacting neurobiology, learning, and development;
- A reflective and committed practice.

Therefore, the development of teacher education and training programs should include neuroscience in education, allowing them to have "holistic approaches that take into account the close interdependence of physical and intellectual well-being as well as the interactions of the emotional and cognitive, analytical and creative brain" (UNESCO, 2015, p. 28).

Despite all the obstacles that may present themselves for teacher training in neuroscience topics, Brookman-Byrne (2016) found that there is a growing expectation among educators for brain-based findings to guide their work in the classroom, and that 91% of teachers who already have this neuroscience knowledge have applied it to at least one aspect of teaching and learning; Brookman-Byrne explains that helping teachers understand neuroscience-learning-teaching issues is happening because of the emergence of the interdisciplinary field of educational neuroscience.

Educators have great optimism in the benefits that neuroscience can bring to education, this represents one more reason to continue research in these disciplines and improve the evidence base obtained in educational interventions based on neuroscience; with this, educators can be supported in the development and understanding of neuroscience and any educational intervention (Simmonds, 2014).

For Brookman-Byrne (2016) it is clear that teachers have an interest in neuroscience and want to use it to underpin their practices.

Dubinsky et al. (2019) assert that neuroscience courses for in-service teachers, offered as collaborations between scientists and teacher educators, can improve science education, pedagogy, and understanding of neuroscience.

Levitt, Carey, Ramirez, Dizrasa, and Di Luca (2016) go further by asserting that if students are trained to think deeply and creatively and encouraged to be a little more fearless, they will have what they need to succeed in an ever-changing scientific world, and that these skills are essential not only in academia but in many careers.

Globally, several countries have realized the importance of making a change in education if they are to train people with the right skills to meet the challenges of today's complex societies while recognizing the importance of neuroscience in bringing about this change. In response, they have created research centers that offer postgraduate courses that combine knowledge of neuroscience and education (Howard-Jones, 2014).

Method

Research Question

Will the understanding and acquisition of knowledge about neurosciences in education allow UACH teachers to give a favorable response to include topics from these disciplines in their training as teachers?

Target

Determine the feasibility of including in the pedagogical training of teachers at the Autonomous University of Chihuahua the knowledge inherent in the disciplines of neuroscience in education through the provision of diplomas, courses, or workshops.

Hypothesis

H_i The acquisition of knowledge of neurosciences in education will allow teachers to give a favorable opinion in order to include the topics inherent to these disciplines in their pedagogical teacher training.

Design

The research had a mixed approach, it was experimental with pre-test and post-test, exploratory and correlational. An intervention course was given and two structured surveys were applied. A structured interview was conducted to close the research.

Participants

For the selection of participants, a simple stratified random sampling was carried out. The research consisted of three study groups, one control group and two experimental groups, each group consisted of 15 teachers of the UACH, men and women, who had a postgraduate academic degree: doctorate or master's degree.

Intervention course

An Ad hoc intervention course was designed on the topic Neurobiology of learning. The course was given to two experimental groups and a control group that did not receive the course. The virtual part of the course was conducted through one of the academic platforms of the UACH and the face-to-face part in the classrooms of that institution.

Instruments and data collection procedure

An instrument adapted from the one published by Im (2015) was used to measure the level of initial knowledge about neuroscience of the teachers of the Autonomous University of Chihuahua, which was applied at the beginning of the intervention course to both the control group and the intervention groups. At the end of the course, a second instrument consisting of a selection of items taken from Herculano-Houzel (2002) was applied to the three participating groups to measure the degree of appropriation of the topics studied in the intervention course.

A structured survey adapted from Howard-Jones et al. (2007) was conducted to measure the acceptance and importance, on the part of teachers, of receiving training in neuroscience topics in education. From the two groups with intervention, the five teachers with the highest scores were selected from each group on the premise that the greater the understanding of the topics, the greater the probability of acceptance of including neuroscience topics in their training. The interviews were conducted individually at the end of the intervention course.

Data analysis

Quantitative

In the first study, the variables that were included are acquisition of knowledge inherent to neuroscience in education by teachers (independent) and acceptance of receiving training in neuroscience in education for teaching practice. The covariate used was the initial knowledge, i.e. the first qualification obtained with the application of the initial questionnaire and the knowledge achieved.

The statistical analysis was performed using general linear mixed models in the software R Version 1.3.959. The model was tested with all variables and one covariate, it was found that the academic postgraduate variable was not significant ($p= 0.7166$) as well as its interaction ($p=0.2144$), so they were eliminated from the model.

The model complied with the assumptions of independence, homogeneity of variance, and normality, thus proving that the conclusions obtained with the model used in this research are true.

The LMM statistical model was formulated as follows:

$$y_{ij} = \mu + S_i + \beta x_{ij} + e_{ij}$$

Where:

- y_{ij} = corresponds to the jth observation of the response variable taken under the ith treatment of the single factor (gain in teacher knowledge).
- μ= overall average.
- S_i = effect of the ith treatment (teacher's sex, i=F, M.)
- β= is the linear regression coefficient indicating the dependence of y_{ij} on x_{ij} (linear relationship between initial knowledge and final gain in teacher knowledge).
- x_{ij} = is the measurement made of the covariate corresponding to y_{ij} (the ijth run, teacher's knowledge of the topic at the beginning of the course).
- e_{ij} = random error component.

Qualitative

A thematic analysis was carried out using Atlas.ti software for the analysis of qualitative data. A Hermeneutic Unit (HU) was created to store the primary documents that were used to generate the quotes, codes, and memos (see Figure 1). For analysis, the interview data were organized into two categories: a) Importance attributed by teachers to the understanding of the cognitive functions of learning and the factors that promote or inhibit it, and b) Teachers' agreement to receive training in neuroscience. For the first data reduction, quotations were formulated with the answers given by teachers to each item in each category. For the second level of data reduction, codes were generated with concepts considered useful for the analysis. Annotations considered relevant for consultation were stored in the memos. For the creation of the thematic network, a code-code link was established in order to determine the relationship between them, as well as to identify the levels in which they are related.

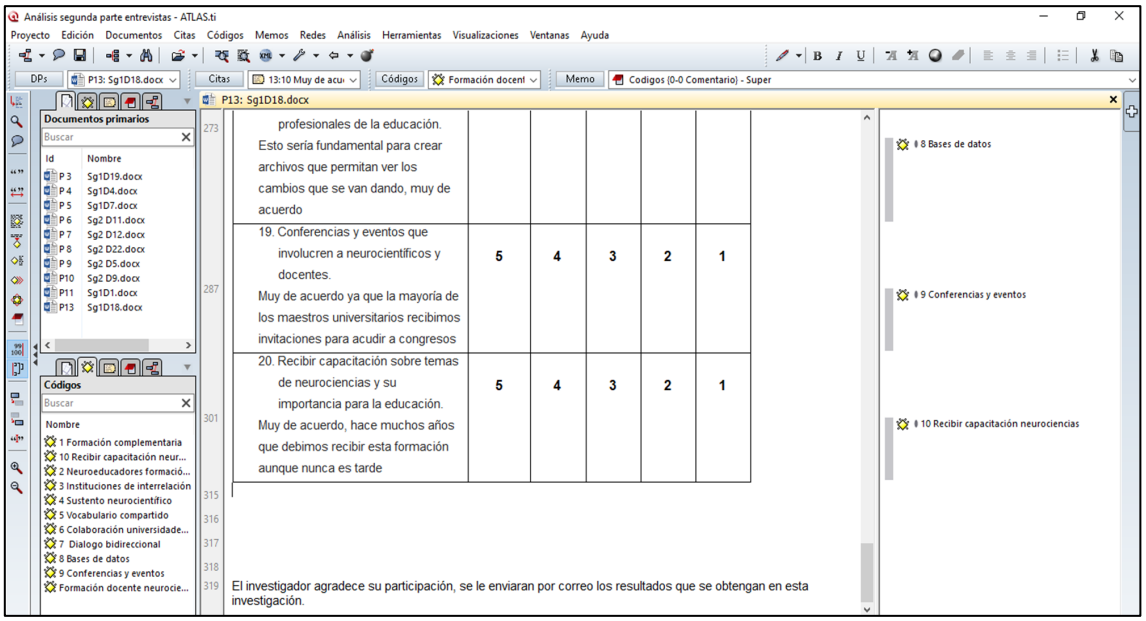


Figure 1. Data coding process in Atlas. ti

According to Braun and Clarke (2006), thematic analysis facilitates the identification, organization, and analysis of patterns and themes based on a reading, allowing inferences to be made as well as understanding and interpreting the phenomenon under study.

Results

The quantitative results of this research were obtained through the analysis of 90 surveys, the qualitative results were obtained through 10 interviews answered by teachers from various faculties of the Autonomous University of Chihuahua in order to answer the research questions and test the hypothesis.

On the other hand, within the exploratory part of the research, it was found that the Autonomous University of Chihuahua has not included courses, diplomas or workshops on neuroscience topics, being established that the intervention course taught by the author of this research is the first in this subject (see table 1).

Table 1
Courses, diplomas, and workshops given by the University Center for the Development of Teachers (CUDD) of the UACH.

Name of course, workshop, or diploma course
Training Projects
Training in Lean Startup Methodology
Moodle Basics for Teachers
Learning Communities
Portfolio of Evidence
Healthy Stress Management
Workshop on Publications and Digital Tools for Higher Education and Research
Burnout in the University Teacher
Diploma in Tutoring with a Focus on Inclusion
Design of Analytical Programs by Competences
Technology Transfer
Management for School Administration
Information Resources and Anti-Plagiarism Tools
Social Responsibility
Virtual Modality. Moodle Platform
Workshop for the Filling out of the PRODEP Teacher Improvement Program
Use and Management of Oral History Techniques
Ethics
Basic Statistics with Excel
UACH Educational Model
Data and Document Protection
Search for Journals in Digital Media for Publication in the Social Sciences, Arts, and Humanities
Training of Social Service Advisors
The Intellectual Property of Educational Materials
Workshop on Multiculturalism in the Classroom
Document Organization Systems
Name of course, workshop, or diploma course
Basic Mexican Sign Language Course
Strategic Planning
Relevance of Mentoring, Commitments, and Challenges of its Stakeholders
Instructional and Graphic Design for Online Courses
Using Google + (G+) and Slack as a Platform for One-on-One Online Collaborative Projects
Public Sources of Information
Instructional Design for Virtual Learning Environments
Podcast Creation, a Powerful Tool for Digital Marketing Applied to Teaching
Fundraising
Diploma in Human Rights and Gender Equality
Curriculum Design by Competencies from Socio-training (part 1)

Curriculum Design by Competences from Socio-training (part 2)
Human Rights and University Social Responsibility
Technological Updating Tools. Management of Smart Boards, Proyectors, and Computers.
Design for All: Use of Free Platforms for Graphic Design of Didactic Material
Tools to Support the Use of Online Courses, Using Assessments from Mobile Devices
Great Teachers. UNAM. Language, Culture, and World Vision. The Identity of the Spanish of Mexico, Human Rights. Inter-American System of Protection
Multimedia Material Production
One-Factor Anova and Non-Parametric Tests
Designing an App to Support my Classroom
Creating Blogs as Teaching Opinion Forums and Using Online Project Management Platforms
Competency Assessment through the Objective Structured Clinical Examination
Live Coding
Cloud Tools for Teaching Management

Note: Adapted from the catalog of 2019 courses, diplomas, workshops, and projects provided by the CUDD through its academic liaison, Ms. María de Lourdes Parada Olivas.

Adjustments to the statistical model

The value found for the Akaike Information Criterion (AIC), in the different models run in the R software, yielded 475.99 as the final result of the research with the selected model having the lowest value and best fit to the data (see table 2).

Table 2
Fit to the statistical model

N	AIC	BIC	logLik	Sigma	R2 0	R2 1
225	475.99	493.01	-233	0.66	0.49	0.54

Note. Lower AIC and BIC implies better results.

Analysis of variance

Marginal hypothesis testing

Table 4 shows that the covariate initial knowledge and the knowledge achieved, that is, the survey applied at the beginning of the intervention course was significant ($p<0.0001$), so it is important to highlight in this study that the gain in knowledge regarding the topics is due to the previous knowledge that teachers have about the topic at the beginning of the research. This same result was obtained and corroborated with the analysis of separate groups. The gender variable was significant ($p=0.0320$), so the difference in knowledge gain between men and women is different (see table 4).

Table 3
Marginal hypothesis testing (SC Type III)

	numDF	denDF	F-value	p-value
(Intercept)	1	220	241.70	<0.0001 0.0320
Sex	1	220	4.66	
Initial	1	220	251.05	<0.0001

Interview results

The analysis of the thematic network of the first category shows that the application of neuroscience in education is due to the importance that neuroscience has gained for teaching practice (see figure 2).

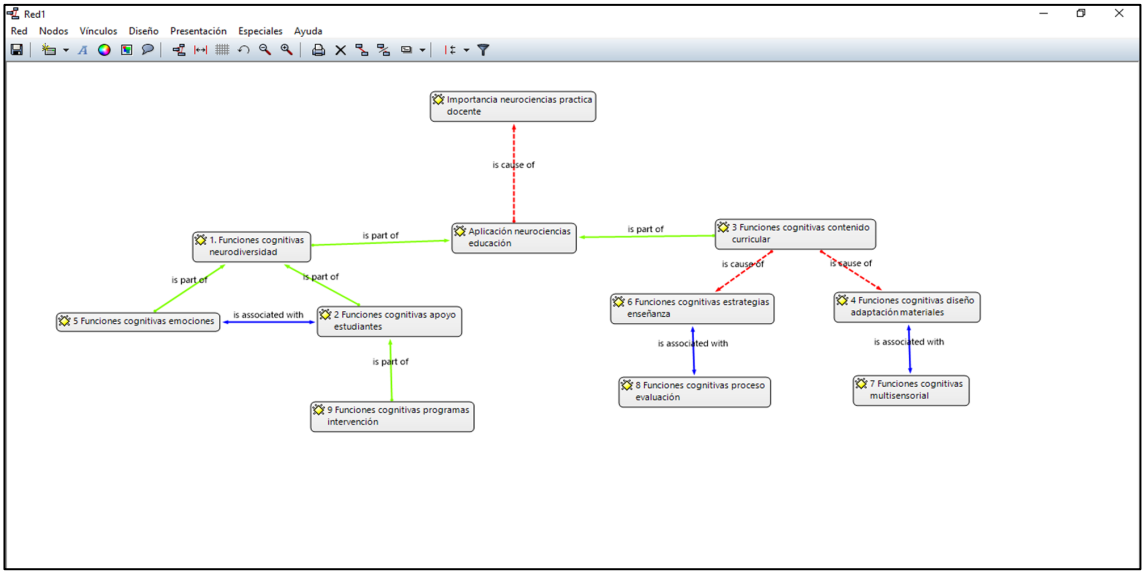


Figure 2. Thematic network of the category importance of neurosciences in teaching practice

In this same category, it was found that all teachers considered that neuroscience is very important to understand the neurodiversity of their students' learning (see figure 3).

> "Please indicate the importance that attributes.... Very important, international organizations are asking us to provide inclusive education for all..."[Sg2D11]

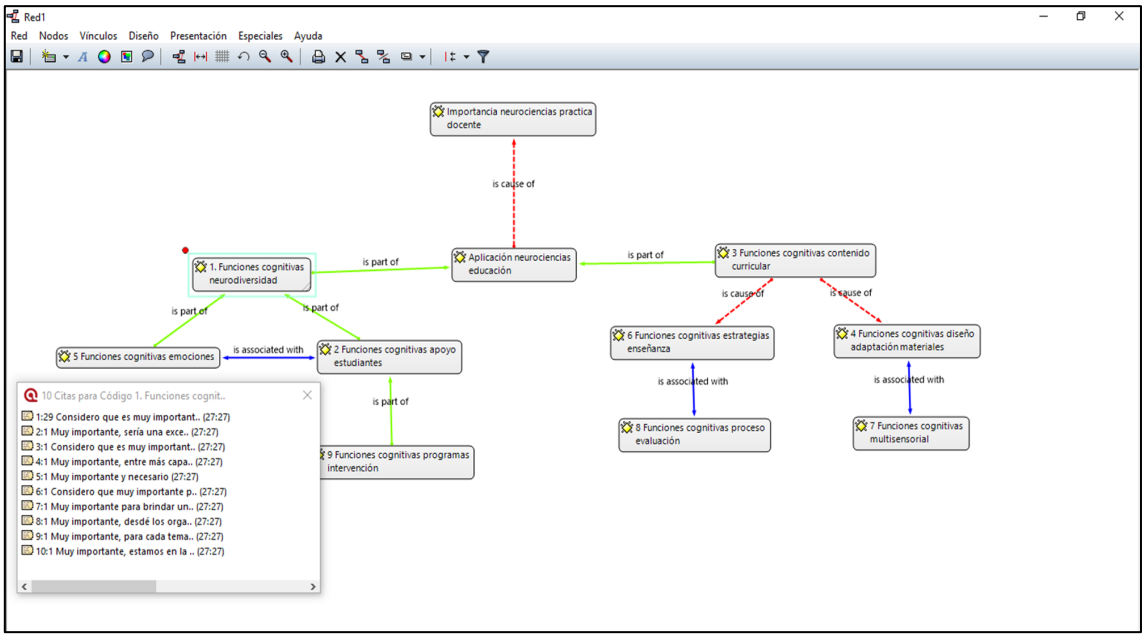


Figure 3. Importance of understanding neurodiversity in learning

In the second category referring to teachers' agreement to receive training in neuroscience, the thematic analysis yielded the following results: for the complementary training code, all teachers expressed strong agreement (see Figure 4), and the same result was obtained for the code to receive training in neuroscience since all teachers expressed strong agreement (see Figure 5).

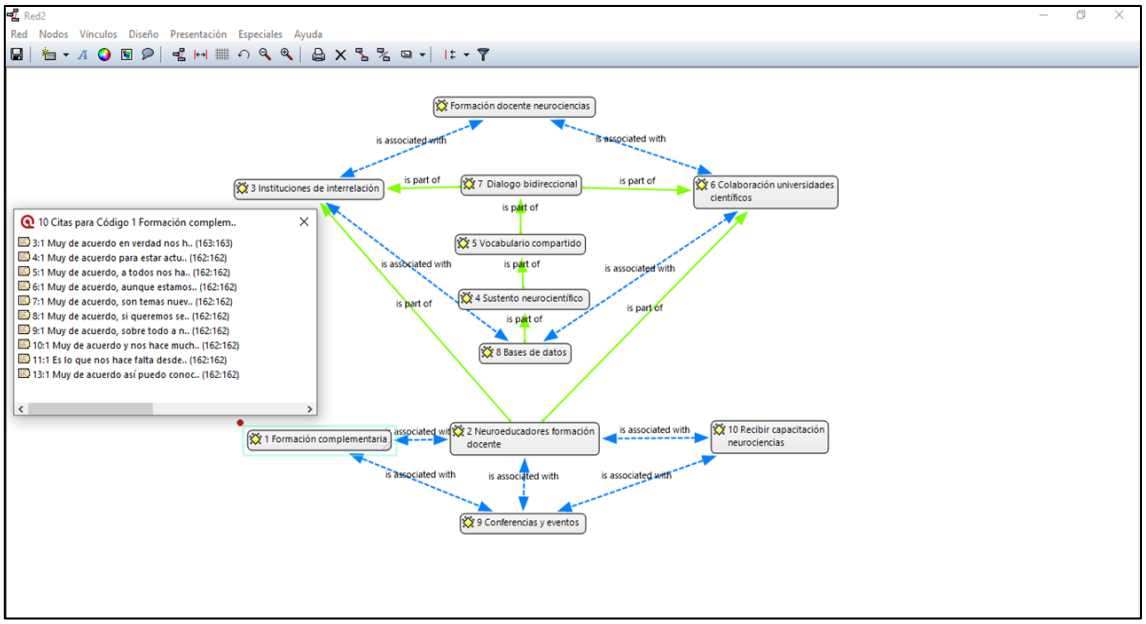


Figure 4. Agreement to receive further training in neurosciences

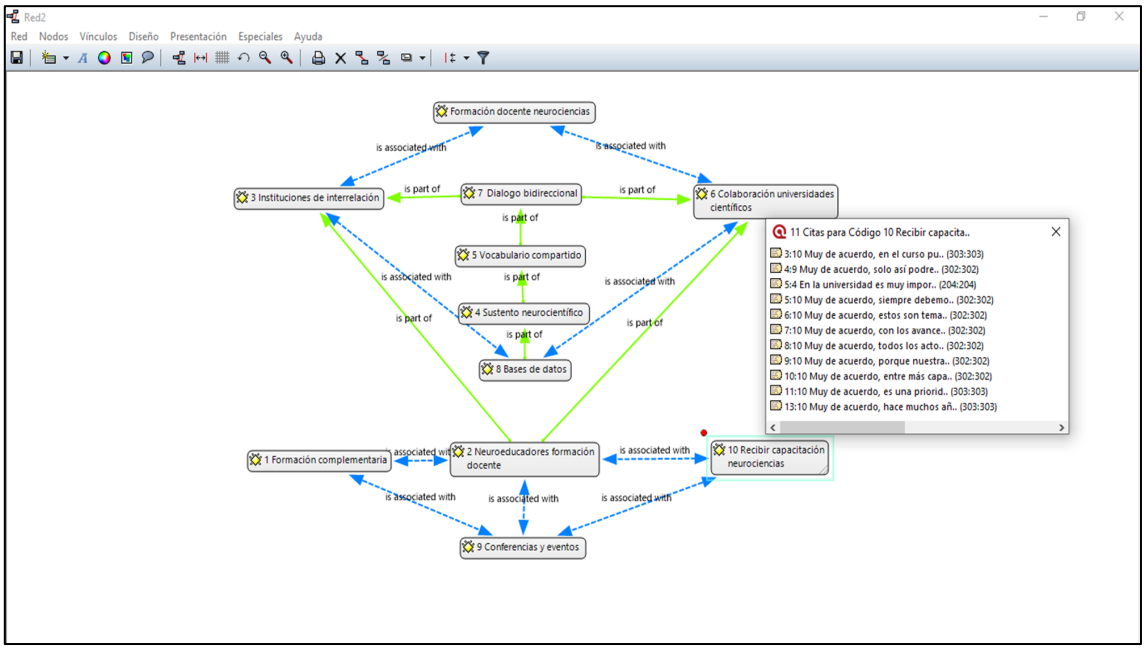


Figure 5. Agreement to receive neuroscience training

The analysis of the thematic network allowed to establish a detailed relationship between codes, highlighting that teacher training in neuroscience is directly associated with networking institutions and collaboration between universities and scientists. It was identified that the bidirectional dialogue is part of the collaboration between universities and scientists as well as with institutions of interrelation, and it also shows that the neuroeducator is associated with complementary education and teacher training. Another important relationship that was found is that teachers associate scientific conferences and events with their training in neuroscience topics (see Figure 6).

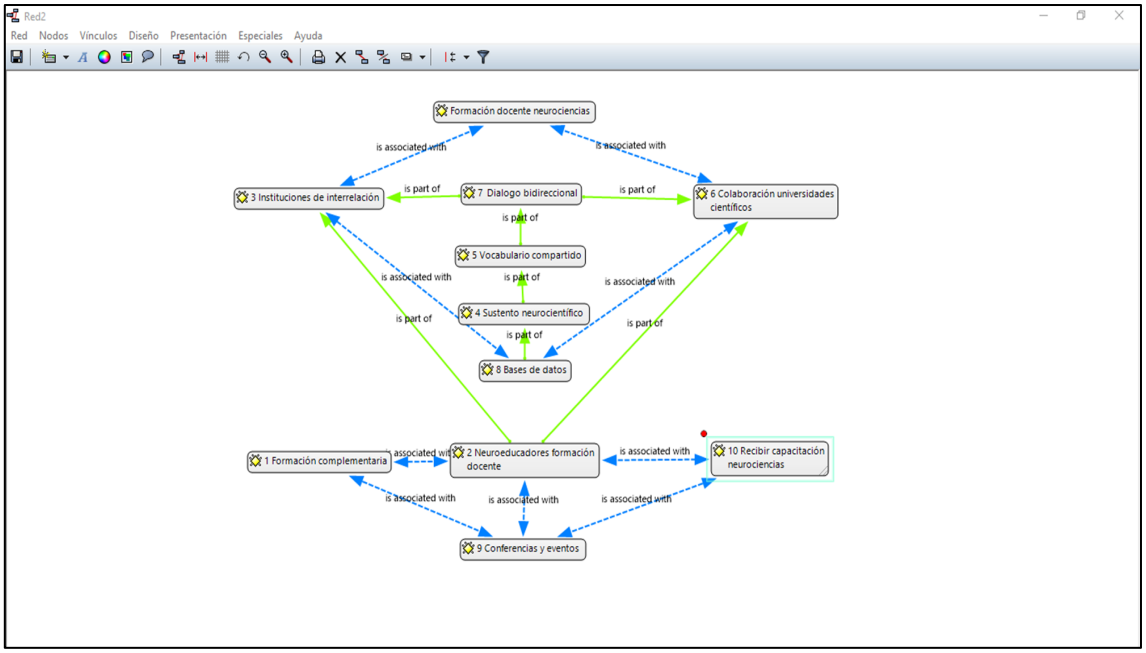


Figure 6. Thematic map showing the relationship between the different codes analyzed

Discussion and conclusions

Great progress has been made by neuroscience in understanding the processes involved in the neurobiology of learning. These discoveries and contributions of neuroscience aroused a deep and exponential interest in the educational community at the international level. The results obtained in the present research show that teachers do not receive training by the Autonomous University of Chihuahua in neuroscience topics. This finding agrees with what was published by Román and Poentis (2018) who explain that in the training of teachers neurosciences have not been contemplated as generators of knowledge about their practice. It was also found that teachers who had previous knowledge to the intervention course about neuroscience obtained a gain in knowledge greater than teachers who had no previous knowledge. This gain in knowledge was reflected in the score obtained in the questionnaire applied at the end of the intervention course. This result agrees with that published by Martínez-González, Manzano-Patiño, García-Minjares, Herrera-Penilla, Buzo-Casanova and Sánchez-Mendiola (2018) who found that prior knowledge acquired facilitates learning since a platform is created composed of a system of interconnected knowledge, patterns, images, and ideas that were acquired which makes it possible to understand new information and integrate it with existing ideas to achieve meaningful learning. Likewise, the University of Valencia (2017) publishes that the information that is obtained "fits" in relation schemes and, in addition, the new knowledge is "linked" with what is already known resulting in deep learning. The results also showed that women acquired greater knowledge about the topics taught in the intervention course which was reflected in the results obtained in the final questionnaire. This finding is consistent with the results obtained by Martinez et al. (2018) who found that in the evaluation exams women obtained a marked increase in the number of correct answers obtained than in the case of men; they also found that women have a higher academic performance than men.

The first category of the interviews gave as a result that the total of teachers considered very important neurosciences to understand the neurodiversity of learning of their students; these results agree with what was published by Yavorosky and Santos-e Campos (2019) who found that in the institutions investigated there are students with specific learning difficulties, and that teachers seek to know new methodologies that help their students during the teaching and learning processes.

Another significant result is the relationship between the application of neuroscience in education and teaching practice. This finding is consistent with that published by Basurto-Vélez and Zambrano-Mendoza (2020) whose result indicates that neuroscience influences the teaching-learning process; likewise, Acta-Caraballo (2019) found that all of the teachers evaluated consider that knowledge about how the brain works can help them improve their academic practice.

The analysis of the second category showed that all of the teachers expressed that they strongly agree with receiving complementary training in neuroscience, and the same result was obtained for the code receiving training in neuroscience since all of the teachers interviewed expressed that they strongly agree. These results are consistent with those obtained by the Wellcome Trust (Simmonds, 2014) where they show that most teachers are interested in knowing and understanding how the brain works. Similar results were obtained by Luque-Rojas and García-Ortigosa (2018) who indicate that a significant number of the educators surveyed expressed the need to incorporate and add neuroscience to their training.

It is concluded that the objective of the research was achieved since the data analysis showed that teachers have a great willingness to be trained in neuroscience topics to improve their teaching practice and to understand the neurodiversity of learning, educational institutions must take responsibility to train, educate, and update their teachers in neuroscience topics to be able to change the traditional way of teaching and move to a teaching based on the neurobiological principles of learning. The hypothesis formulated is verified since the greater the acquisition and understanding of neuroscience topics in education, the greater the interest and willingness of teachers to receive education and training in these disciplines. Finally, the answer to the research question posed is positive since the topics addressed in the intervention course allowed teachers to dimension the importance of acquiring and understanding the topics of neuroscience in education and thus issue a favorable response to include these topics in their training as teachers.

For future research, it is recommended that undergraduate and postgraduate students be included in order to broaden the dissemination of neuroscience topics.

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Receipt date: 10/24/2020
Revision date: 05/31/2021
Acceptance date: 06/13/2021

MLS - EDUCATIONAL RESEARCH

http://mlsjournals.com/Educational-Research-Journal

ISSN: 2603-5820

How to cite this article:

Ferreira, C. & Vieira, M. J. (2021). The simulation of family interviews in the training of teachers and counsellors. *MLS Educational Research, 5*(2), 26-38. doi: 10.29314/mlser.v5i2.553.

THE SIMULATION OF FAMILY INTERVIEWS IN THE TRAINING OF TEACHERS AND COUNSELLORS

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Abstract. Competence in oral communication is essential to carry out the functions of teacher-tutors and counsellors, especially for counselling and information for audiences with diverse educational profiles. In this line, the Faculty of Education of the University of León has carried out a training action in the Degree in Primary Education and in the University Master's Degree in Educational Guidance with the aim of developing and evaluating the mastery of oral communication through the simulation of family interviews. In this study, a survey was carried out among the students of the two selected degrees with the aim of analysing the most developed competences through the simulation of interviews, and identifying the strengths and weaknesses in the development of the same in order to establish proposals for improvement. The main conclusions of the study are that the guidance interview simulation is a very satisfactory activity for the students because it allows them to place themselves in a real professional context as teacher-tutors and counsellors. In addition to increasing their competence in oral communication, students have improved their interpersonal relationship skills, their empathy and their ability to make decisions in new situations.

Keywords: teacher training, oral communication, simulation, guidance interview.

LA SIMULACIÓN DE ENTREVISTAS FAMILIARES EN LA FORMACIÓN DE MAESTROS Y ORIENTADORES

Resumen. La competencia en comunicación oral es fundamental para ejercer las funciones de los maestros-tutores y orientadores, especialmente, para el asesoramiento y la información a destinatarios con perfiles diversos educativos. En esta línea, en la Facultad de Educación de la Universidad de León se ha realizado una acción formativa en el Grado en Educación Primaria y en el Máster Universitario en Orientación Educativa con el fin de desarrollar y evaluar el domino de la comunicación oral a través de la simulación de entrevistas a familiares. En este estudio se ha realizado una encuesta a los estudiantes de los dos títulos seleccionados con el objetivo de analizar las competencias más desarrolladas a través de la simulación de

entrevistas, e identificar las fortalezas y las debilidades en el desarrollo de la misma con el fin de establecer propuestas de mejora. Las principales conclusiones del estudio se concretan en que la simulación de entrevista tutorial es una actividad muy satisfactoria para los estudiantes porque les permite situarse en un contexto profesional real como maestros-tutores y orientadores. Además de incrementar su competencia en comunicación oral, los estudiantes han mejorado sus habilidades de relación interpersonales, su empatía y su capacidad de tomar decisiones ante nuevas situaciones.

Palabras clave: formación del profesorado, comunicación oral, simulación, entrevista tutorial.

Introduction

The importance of oral communication in education professionals

The figures of the teacher-tutor and the counsellor are two of the professionals who have a great impact on the educational system. Both professional profiles must attend to an inclusive education and take responsibility for the students, serving as a guide and reference for them, as well as a coordinator between the main agents involved in the educational action: families, students, and teachers. Among the functions performed by these professionals are to guide, advise, and inform the agents involved of everything that concerns them in relation to personal development, the relationship in the group, teaching activities, and the academic performance of each student (Berzosa Grande et al., 2009; Grañeras Pastrana, and Parras Laguna, 2009; Sobrado Fernández et al, 2012; Cano González, 2013). This function of communication and transmission of individualized information is carried out through interviews, both in the case of individualized tutorials conducted by the teacher-tutor, as well as in the diagnostic, feedback, and follow-up interviews conducted by the counsellors. These interviews involve, in addition to the transmission of information, active listening, empathy, and decision making. Therefore, the interview is key when gathering information about a particular student to provide a solution to a problematic behaviour or to help in any process that requires decision-making. Moreover, it is one of the usual strategies of these professionals to communicate, negotiate, participate, collaborate, reflect, evaluate, etc. (Hernández Rivero & Mederos Santana, 2018; Vieira & Ferreira, 2018). There is no doubt, therefore, that within teacher training and the exercise of their work, oral expression, communication, as well as the transmission of ideas are key aspects that should be contemplated in their initial and ongoing formative development (González-Moreira et al. , 2018).

One way of working on this type of interview in the classroom is through simulation. This is a teaching-learning technique used for different disciplines, health, law, economics, education, etc., which requires the active and group participation of students in which each of them has to assume a different role in a given situation (Rao & Stupans, 2012; Rodríguez-Miñambres et al., 2019; Tabak & Lebron, 2017). Simulation places students in situations in which, depending on their role, they must act differently and be aware of how other people feel obtaining very positive results (Castillo-Arcos & Maas-Góngora, 2017; Castro Vásquez, 2017; Acharya et al., 2018; Font Ribas & Caballol Angelats, 2018; González Losada & Triviño García, 2018). The simulation methodology through immersion in real scenarios facilitates the acquisition of specialized knowledge in a given discipline while allowing the development of professional skills, mainly, interacting, communicating, leading, negotiating, or working in teams (García-Carbonell et al., 2012; Angelini et al., 2015; Salminen-Tuomaala & Koskela, 2020).

In the context of adaptation to the European Higher Education Area (EHEA), universities have had to assume the responsibility of training their students in competences with the aim of efficiently developing their future professional activity (Rodríguez-Esteban and Vieira, 2009; Bolívar Cruz et al., 2013; Higuera Aguirre et al., 2018). To this end, the design of the curricula leading to university degrees has revolved around the acquisition of competences by students as established by Royal Decree 1393/2007 regulating the Organisation of Official University Education in Spain (Ministry of Education and Science, 2007). This regulation states that the report for the verification of official degrees must specify the generic and specific competences that students must acquire during their studies and which are required to award the degree, bearing in mind that these competences must be assessable.

One of the great achievements of this reform has been the concern for quality and innovation in university teaching. Thus, most universities have carried out actions in order to encourage the introduction of innovative educational strategies linked to the training of university students in generic or transversal competences, such as teamwork, oral communication, creativity, among others, which go beyond the specific to each area (Cazcarro Castellano and Martínez Caraballo, 2011; Eizagirre et al., 2017; Gramaglia et al., 2018). Spanish universities have had freedom in the design of curricula, which means that in the training of education degrees (teaching degrees, master's degrees in teacher training, etc.) there are differences in the importance given both in subjects and in dedication to training in generic or cross-cutting competences. For example, in the case of oral communication, in the study carried out by Santamarina Sancho and Núñez Delgado (2018) for the Bachelor's Degree in Early Childhood Education, it is found that there are significant differences in the content of the subjects and in the time devoted to working on this competence among Spanish universities.

On the other hand, recent studies question the "discourse" of competency training that is decontextualized in concrete situations. Specifically, in relation to oral communication in competence training, Hora et al. (2019) confirm that it depends on cultural, political, and situational factors that are differentiated for different professions. Therefore, for example, in teacher training, oral communication must be linked to real situations that determine the roles and cultural models in its use.

In this scenario, on the one hand, of the autonomy of universities in the design of degrees and, on the other hand, of the necessary contextualization of generic or transversal competences to specific situations typical of different professions, the results of an experience of teaching innovation through the simulation of interviews in the Faculty of Education of the Universidad de León are presented below with the aim of promoting oral communication in future teachers and counsellors.

Contextualisation of the training action for improving oral communication

The Universidad de León has defined a series of priority competences common to all university degrees. Among these competences is oral expression, understood as *knowing how to express oneself clearly in conversations or debates, adapting the style of language to the interlocutor and using specific and relevant vocabulary*. As discussed in the previous section, this competence is closely related to the functions that teachers-tutors and counsellors must carry out in their professional practice (Ceballos, 2006; López-Mayor and Cascales-Martínez, 2019; Martín and Solé, 2011; Sáinz Gutiérrez et al., 2011). This is also reflected in the teaching guides of the subjects involved in this study of the Bachelor's Degrees in Primary Education and the Master's Degree in Educational Guidance, as well as other related subjects; for example, interpersonal

relationship skills: ability to relate adequately with others, and that students can transmit information, ideas, problems, and solutions to both specialized and non-specialized audiences.

However, this competence is worked on in a very specific way and there is little evidence of whether or not students are achieving mastery of it (Álvarez Teruel et al., 2011; Balaguer Fàbregas et al., 2015).

In the Faculty of Education of this university, a teaching innovation project was launched with the aim of incorporating specific training actions to develop oral expression in future teachers and counsellors (knowing how to express oneself clearly in conversations or debates, adapting the style of language to the interlocutor, and using specific and relevant vocabulary). In this study, the results of the training action based on the simulation of interviews with families are presented. Specifically, it has been carried out in two subjects: Tutoring and Guidance of the Degree in Primary Education (second year, first semester) and Guidance to Families of Students with Specific Educational Support Needs of the Master's Degree in Educational Guidance (second semester).

The procedure to introduce this training action is composed of different phases: 1) Needs analysis through *brainstorming* and discussion groups; 2) Design of the action; 3) Implementation (including the selection of simulation cases); 4) Evaluation of the achievement of results; 5) Improvement proposals; and 6) Redefinition of materials.

In the first phase, in the two subjects involved, an analysis of the training needs of the students on the importance of oral expression as future tutors or counsellors was carried out using the *brainstorming* technique and discussion groups. Information gathered in previous courses has been collected and a report on the training needs in oral expression has been made. The main conclusions of the *brainstorming* and discussion groups have reflected the need to train teachers and counsellors in four dimensions. Specifically, in the attitude that the interviewer must show (empathy, patience, understanding, assertiveness, leadership, positivity, etc.), in the planning of the family interview process (previous necessary information, approach of the objectives, and purpose of the interview), the available instruments and their use and, finally, the coordination with different educational agents, including the students, their families, and the teaching staff.

This information has been used for the second phase in which the design of the action has been carried out:

(1) Selection of cases. Orientations for the SWOT analysis for the assessment of family orientation needs. As examples of the cases presented to the students, there are diverse situations that involve communication with the families with which both tutors (problems of attention, acquisition of study habits at home, behaviour, delivery of grades, etc.) and counsellors (interview for requesting a psycho-pedagogical evaluation, return of results of the psycho-pedagogical evaluation, problems of absenteeism, etc.) are encountered.

(2) Guidelines for the elaboration of the interview script adapted to a possible real case (preparation, opening, development, termination, and commitment phases) and for the recording and interpretation of the results.

(3) Elaboration of a rubric for the evaluation of the achievement of the learning outcomes linked to the performance of the interview adapted to each subject, as well as the record sheets of the observers of the simulation.

Subsequently, the training action was implemented with the students by means of simulated interviews with the students adopting the role of counsellor/teacher/tutor and family/student respectively. The rest of the students have adopted the role of observers and have evaluated the development of the interview. The simulations have been carried out in the Psychopedagogical Office of the Faculty of Education (it has a spy mirror) and have been recorded on video with their consent with the aim that students receive adequate *feedback* from the interview and serve as material for future students of these subjects.

The main objective of this study is to evaluate and improve the training action aimed at future teachers and counsellors based on the simulation of interviews with family members. This general objective is specified in two specific objectives that correspond to the last three phases of the training process described (evaluation of the achievement of results, proposals for improvement, and redefinition of materials):

(1) Know the opinion of the students about which have been the most developed competences with the simulation activity carried out, and the strengths and weaknesses in the development of this activity in order to make proposals for improvement.

(2) Propose improvements that allow to redefine the design, implementation, and evaluation of the training actions and the associated materials.

Method

A survey methodology has been followed in order to evaluate the simulation activity by the students and to obtain information that allows the teaching staff to adjust processes and materials. The data collection technique has been a questionnaire developed using Google Forms, consisting of fifteen closed questions of estimation to assess each of the fifteen competencies common to all degrees specified and prioritized by the Universidad de León. These competences are:

C1. Written expression: knowing how to express oneself clearly in writing, adapting the style of language to the interlocutor, and using specific and relevant vocabulary.

C2. Oral expression: knowing how to express oneself clearly in conversations or debates, adapting the style of language to the interlocutor, and using specific and relevant vocabulary.

C3. Interpersonal relationship skills: ability to relate appropriately with others.

C4. Teamwork: Ability to commit to a team, habit of collaboration, and work solving conflicts that may arise.

C5. Leadership: ability to lead work groups, meetings, supervise people, etc.

C6. Decision making and problem solving: problem localization, identifying causes and alternative solutions, selection and evaluation of the most suitable one.

C7. Critical thinking: ability to analyze, synthesize, and draw conclusions from an article (whether opinion or scientific).

C8. Everyday reasoning: ability to look for counter-arguments to one's own opinion (theoretical framework, ideology, values, social conflicts, etc.).

C9. Creativity: capacity for innovation, initiative, promotion of ideas, and inventiveness.

C10. Ability to reflect on their own work.

C11. Documentation skills: consultation of relevant databases in the professional field, consultation of specific journals, "expert" Internet browsing, etc.

C12. Analysis and synthesis skills: breaking down complex situations into parts for analysis and bringing together disaggregated information to analyse it as a whole.

C13. Management: ability to manage time and resources: develop plans, prioritize activities, identify critical ones, set deadlines, and meet them.

C14. Adaptation to new situations.

C15. Ability to learn.

Respondents were asked to indicate which competencies they had improved with the activity of simulating a family interview, choosing a maximum of five competencies. Therefore, the level of measurement in the questionnaire of the 15 variables corresponding to the competencies is nominal (dichotomous) in which the presence or absence (1-0) of each competency among the five most valued in the development of the simulation is recorded. The content validity of this questionnaire is based on the fact that the selection of competences comes from the previous work of experts who at the Universidad de León agreed to include these fifteen transversal competences in all degrees and were subsequently endorsed in the respective governing bodies and commissions responsible for the development of the curricula (Universidad de León, 2017). An open question on proposals for improvement of the simulation activity was added, in which respondents pointed out those weak aspects of it, as well as alternatives for improvement. A content analysis has been carried out considering the process of the activity: previous, realization, and subsequent phase.

After the analysis of the data extracted from the questionnaire by means of frequencies and content analysis, the following materials have been reviewed and adapted: Evaluation rubric for the interview simulation and Observation sheet for the interview simulation.

The invited sample consisted of 117 students from the subjects of Tutoring and Guidance (Degree in Primary Education) and Guidance for Families of Students with Specific Educational Support Needs (Master's Degree in Educational Guidance). The final sample consisted of 69 students who participated voluntarily by completing the evaluation questionnaire (n=59, 55% of those enrolled in the Degree course and n=10, 91% of those enrolled in the Master's course).

Results

Competencies developed with the family interview simulation

Based on the objective of training students of the Degree in Primary Education and the Master's Degree in Educational Guidance in oral expression, the following results have been obtained once the simulation of the interview with families as a key action in the training development of teachers-tutors and counsellors has been carried out.

Figure 1 shows in percentages the competences most developed with this activity according to the Bachelor's and Master's degree students participating in the sample. The

students of both degrees consider that they mainly develop the competence of oral expression (C2), the main objective of the proposal presented, as well as interpersonal relationship skills (C3), decision making and problem solving (C6), adaptation to new situations (C14), and critical thinking (C7). In the case of the Master's students, these last two competences have been worked on more according to the students due to the fact that the subject matter of the cases presented for the counsellors and the number of participants in the activity (two students per interview) entails the development of skills closely related to the communication of delicate situations for the families and, therefore, of attitudes of closeness, empathy, and understanding on behalf of the counselling professional in a more outstanding way than in the case of the situations presented for the tutors.

On the other hand, the Bachelor's Degree students point out, compared to the Master's Degree students, the promotion of the teamwork competence (C4). However, this data can be influenced by the number of people who participated in each interview. While in the Bachelor's Degree the groups were made up of three and four people, in the Master's Degree, the interviews were carried out in pairs. At an intermediate level are competences related to creativity (C9), everyday reasoning (C8), and the ability to reflect on one's own work (C10).

Among the competences that, according to the students, are less developed with the family interview simulation activity are documentation skills (C11), written expression (C1), and leadership competence (C5). In the case of Master's degree students, none of these competences has been valued, although leadership has been pointed out in 6.8% of undergraduate students.

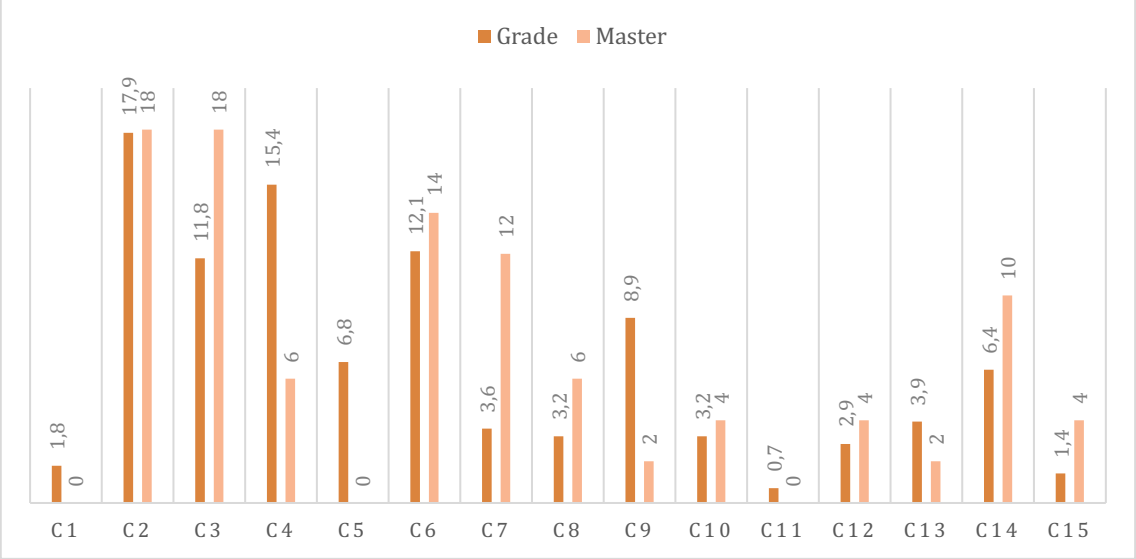


Figure 1. Competences developed with the simulation of interviews with families by future tutors and counsellors. Own elaboration.

Strengths of the Family Interview Simulation

Within the evaluation of the training action, the students pointed out the main strengths of the interview. In general, they considered that the activity has a good approach, as well as being a good method of meaningful learning, as it has allowed them to approach the reality of the future professional in a simulated context but very close to

reality, especially for the cases raised and the place of realization in the Psychopedagogical Office. They point out that it is *a very helpful activity for the students as it allows them to represent, in a certain way, the role they will have to develop in the future as professionals*, reducing the feeling of uncertainty and embarrassment when facing these situations.

The variety of cases, the variety of situation,s and the definition of roles, which made it possible to vary the subject matter of each simulation, the different participating agents, as well as the problems and the decision making process of the simulation, are also noteworthy: *doing it in groups is interesting since it is possible to see different models.*

Both Bachelor's and Master's degree students value very positively the practical content in the development of the subjects and even highlight that it is with this type of content (and not theoretical) that they learn more to develop competences. From their perspective, simulation is a methodology that is different from what is usual in the degrees and that provides practical experience. Descriptively, the respondents described this activity as *original, fun, complete, entertaining, educational, useful, necessary, enriching, and interesting*.

In summary, the students consider that it *has been a good way to visualize how we are going to face our role as tutors in the future* and that it has been a first adaptation and contact with the situations of collaboration between family-school.

Proposals for improvement of the training action

Within the evaluation, proposals for improvement were also included with the aim of redefining the design of these training actions. In total, eighteen proposals for improvement were identified. The rest of the respondents considered that the simulation is adequate in its approach and would not change any aspect (*adequate as it is, no need to improve and modify it, suitable, we liked the experience, everything has been done correctly, recommendable, well designed*). These proposals for improvement (n=18) were classified according to the time of the activity: before it was carried out, during its development, and afterwards (Figure 2).



Figure 2. Proposals for improving the simulation of the family interview. Own elaboration.

In relation to the moment prior to conducting the interview, the students highlighted the need to improve a) the script, b) the cases, and c) the time dedicated both to conducting the interview and to explaining the evaluation rubric. In this sense, it was suggested a greater specification of some elements of the rubric that have been adapted following the suggestions of the students. In this sense, the rubric addresses both the preparation phase of the script (identification data and content organized according to the phases of the interview), and the phase of carrying out the simulation (attitude, verbal communication, and non-verbal communication). In the preparation phase, they point out as important aspects to have more time for planning and preparation, as well as to visualize interviews as examples. In this sense, as it was the first year of implementation of the action, there was no visual material available to show examples of them. In subsequent years, it is intended that the material recorded in this course can be shown to future students. In relation to the cases raised, the improvement is aimed at making them more concrete and providing behavioural guidelines to those students who develop the role of parents*, since, in the future, surely, some parents will not accept so easily the recommendations and guidelines of action of the tutors as it happened in the role-playing*.

In the phase of carrying out the simulation, some of the proposals are again related to the time and duration of the simulation. In some cases, the students exceeded the established time, so they had to adjust to the time of realization due to the possible distraction of the rest of the students. Another proposal was to *divide the interviews into several sessions (less than an hour each) to avoid repetition and to promote attention and listening*. The students also propose alternatives in the development of the simulation, specifically they propose to assign situations and roles at the time of the simulation in such a *way that it is necessary to improvise and look for solutions without previous preparation* and to exchange the roles of each person in the simulation. Both aspects entail not having a previous script for the interview and possible biases due to having observed the behaviour and decision making of the previous participants. Regarding the role of the observers, it has also been suggested that more time should be devoted to explaining the observation, as well as clarifications in the observation sheet, breaking

down several items in the phases of the interview (opening, development, and closing) that have been included in the new adapted version. Other aspects that could be improved include more dramatization and analyzing a greater variety of real cases.

Finally, the following suggestions were made in the post-interview phase:

(1) Carry out a greater number of simulation activities during the course and in other subjects of the degree.

(2) Sharing videos in moodle among peers (not only among group members). This aspect is limited by the refusal of authorization by some students to share the material for teaching purposes.

(3) Visualize the simulation later in class so that students get *feedback* and a debate is held between the proposed cases: *it would have been nice to be able to see them in class and correct the mistakes, to make a kind of debate with the work to be improved.*

Discussion and conclusions

Simulation through *role-playing*, specifically a family interview, is an instrument in the training of future teachers that directly promotes the generic competence of oral expression and that obtains good results in degrees related to the field of education. In addition to this competence, the results obtained show that this activity also promotes other competences such as interpersonal relationship skills, decision making, and problem solving. This is confirmed by the importance given to the competencies that teachers should have in their initial training for their work in the ANECA White Paper (National Agency for Quality Assessment and Accreditation, 2004).

It should be noted that the interview simulation is a proposal rarely used in the university environment in education degrees and that it has been received by the students with very positive attitudes. This is reflected in their comments, as they indicate that this activity allows them to *put themselves in the shoes* of teachers-tutors and counsellors when faced with a variety of situations that usually occur in schools. Likewise, by acting as observers, students have the opportunity to see different real situations and how they can react and respond in the right way by learning in a cooperative way.

As aspects of improvement to be taken into account in the application of this methodology, students point out that the preparation of this activity requires more time and the need to share the videos among peers, since this visualization can allow self-evaluation, co-evaluation, and hetero-evaluation, i.e. the student's own evaluation, that of peers among themselves, and that of teachers on students (Cazcarro Castellano & Martínez Caraballo, 2011).

Likewise, it has been observed that the application of simulation techniques in contexts close to the reality of work, as is the case of the simulation of an interview to assess learning outcomes achieved by students, leads to an improvement in the degree and the training of future graduates. Moreover, as reflected in the introduction to this study, it is an activity with great potential for transferability to other degrees, especially because oral expression is considered one of the priority skills to be developed in university students.

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Receipt date: 10/19/2020
Revision date: 12/08/2020
Acceptance date: 12/28/2020

MLS - EDUCATIONAL RESEARCH

http://mlsjournals.com/Educational-Research-Journal

ISSN: 2603-5820

How to cite this article:

Valenzuela Ramos, N.G. & Quiñones Urquillo, A. (2021). State of the art on the relation of academic stress and achievement in university students, with the mediation of two variables. *MLS Educational Research, 5*(2), 39-58. doi: 10.29314/mlser.v5i2.495.

STATE OF THE ART ON THE RELATION OF ACADEMIC STRESS AND ACHIEVEMENT IN UNIVERSITY STUDENTS, WITH THE MEDIATION OF TWO VARIABLES

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Abstract. Meaning is attributed to the review of the antecedents to identify trends in the generation of knowledge from an epistemic and methodological position, which allows to direct the research in process. In this case, a review of primary sources (articles and doctoral thesis) was carried out from a positivist position of inquiry and measurement of scientific production. Of the 46 studies reviewed, 37 are international and nine are national, published from 1999 to 2019, which talk about stress in academic contexts, achievement, academic goals, and learning strategies. Depending on the type and design, theoretical-conceptual studies were reviewed, correlational-causal with pre and quasi-experimental design, descriptive-correlational-causal with non-experimental and cross-sectional design; and others that confirm the structure and reliability of measurement instruments. This review implied a critical reading as an hermeneutical exercise to approach the understanding of the texts in the context of research, most in Spain and some in Latin America, which appears to identify five vestiges that guide the theoretical-methodological position of the doctoral thesis in process. The object of study is the binding relationship between stress and academic performance at university, mediated by two variables, academic goals and learning strategies with the intention of testing this relationship in a context located in Mexico.

Keywords: Academic Stress, achievement, academic goals, learning strategies, university students.

ESTADO DEL ARTE SOBRE LA RELACIÓN DEL ESTRÉS ACADÉMICO Y EL RENDIMIENTO EN ESTUDIANTES UNIVERSITARIOS, CON LA MEDIACIÓN DE DOS VARIABLES

Resumen. Se atribuye sentido a la revisión de los antecedentes para identificar las tendencias en la generación del conocimiento desde una postura epistémica y metodológica que permita direccionar la investigación en proceso. En este caso, se llevó a cabo una revisión de fuentes primarias (artículos y tesis doctorales) desde una postura positivista de indagación y medición de la producción científica. De los 46

estudios revisados, 37 son internacionales y nueve nacionales, publicados de 1999 a 2019, que versan sobre estrés en contextos académicos, rendimiento, metas académicas y estrategias de aprendizaje. En función del tipo y diseño, se revisaron estudios teórico-conceptuales, correlacionales-causales con diseño pre y cuasiexperimental, descriptivos-correlacionales-causales con diseño no experimental y transversal; y otros que confirman la estructura y fiabilidad de instrumentos de medición. Esta revisión implicó una lectura crítica como ejercicio hermenéutico para aproximarnos a la comprensión de los textos en el contexto de investigación, la mayoría en España y algunos en Latinoamérica, lo cual permitió identificar cinco vestigios que orientan la postura teórico-metodológica de la tesis doctoral en proceso. El objeto de estudio es la relación vinculante entre el estrés y el rendimiento académico en la universidad, mediado por dos variables, las metas académicas y las estrategias de aprendizaje con la intención de poner a prueba esta relación en un contexto situado en México.

Palabras clave: Estrés académico, rendimiento, metas académicas, estrategias de aprendizaje, estudiantes universitarios.

Introduction

From the conception of the student in higher education able to adapt and self-regulate in the university environment with high demands and requirements, educational research provides evidence in relation to their ability to cope with stress, the choice of multiple academic goals, and the use of learning strategies, as well as their association with academic performance. This article summarizes the state of the art of a doctoral thesis in progress, which addresses the study of the relationship between stress (independent variable) and academic performance (dependent variable), mediated by two variables, academic goals and learning strategies. It is known that a mediating variable is an integral part of a cause and effect relationship because it helps to explain how the independent variable is influencing the dependent variable (Rodríguez & Pueyo, 2010).

Within the framework of a constructivist conception of the teaching and learning process at university (Coll, 1999; Díaz Barriga, 2006; Hernández, 2012) and in view of the requirements of the competence-based educational approach (Pimienta, 2008; Pozo and Pérez, 2009; Tobón, 2010; Villa and Poblete, 2010; Zabalza, 2013), the student is given a central role as an active, critical, and reflective subject, capable of adapting, choosing, and using the necessary learning strategies, with the mediation of the teacher. This conception shapes the spirit of the reform of teaching and learning processes in universities in the 21st century, within the framework of the European Higher Education Area (EHEA), starting with the *Tuning* project (2004) and in the university context in Latin American countries, the *Alfatuning* project (2007).

In this sense, the concern of universities to study the variables involved in student self-regulation is current. The schooling process summons them to comply with institutional academic norms for the accreditation of learning and their permanence in the system and also demands evidence of their participation in the teaching and learning processes of each subject. In this sense, the student moves between different scenarios in regard to what he/she wants, can, and decides in order to accredit, learn, and remain in the system.

The university student carries out a process of assessment to self-regulate and cope with the stress perceived from the demands of the university environment. They constantly make decisions in the face of the demands and can achieve self-regulation progressively, although they require help in the course of their education (Valle et al., 1999; Rosário et al., 2007). Self-regulation mobilizes their cognitive processes and also activates their emotional nature because it implies that they carry out an assessment to decide how to interact in the environment, according to their resources, to confront stress, to choose goals and strategies for learning (Cabanach et al., 2007). Goals constitute the reasons or motives that move him to action according to the demands of the school system (Dweck, 1986, cited by Porcar, 2010; Valle et al., 2009); when he chooses, he assumes a position according to the value he attributes to the required activities and his expectation of achievement. On the other hand, learning strategies constitute conscious and intentional activities that guide their action towards the achievement of goals (Roces et al., 1995; Valle et al., 1999; Beltrán, 2003; Porcar, 2010).

Method

According to George (2019), although there is no methodological consensus that distinguishes the strategies to develop a state of the art, the literature on the subject shows a coincidence in relation to the purpose of doing it. The aim is to identify trends in the generation of knowledge with its epistemic and methodological alternatives in order to direct the research. To do so, it suggests establishing an epistemic-methodological stance to approach the object of study, delimit the temporal space and articulate the axes of analysis based on the types of research. In this case, a review of primary sources was carried out from a positivist stance for the investigation and measurement of the scientific production of articles and theses in relation to the variables under study from 1999 to date, distinguishing the type of research and its methodological design, as shown in Table 1.

Table 1
Studies reviewed by type and methodological design according to the main variable

Type of study and methodological design	Quantity	Percentage
Theoretical-conceptual E (3), R (1), MA (1), EA (2)	7	15.2%
Correlational / Causal, with pre-experimental / quasi-experimental, pretest-posttest design (includes a doctoral thesis). E (1), MA (1), EA (2)	4	8.7%
Descriptive / Correlational-causal, with non-experimental, cross-sectional design (includes three doctoral theses). E (12), R (6), MA (9)	27	58.7%
To confirm the structure and reliability of a measuring instrument E (5), MA (2), EA (1)	8	17.4%
Total	**46**	**100%**

Note. Acronyms of the variables: E (Stress), R (Performance), MA (Academic Goals), EA (Learning Strategies). The number of studies reviewed by variable is indicated in parentheses.

Of the 46 studies reviewed, 37 are international and nine are national. Twenty-one were reviewed on stress in academic contexts (eight in Mexico), seven on performance, 12 on academic goals (one in Mexico), and five on learning strategies. This review was carried out based on a critical reading as a hermeneutic exercise to approach the understanding of the texts in the research context, most in Spain and some in Latin America, which allowed us to identify five vestiges that guide the theoretical-methodological position in the doctoral thesis in process to test the relationship of variables in the national context. In this sense, a line in time was elaborated with the support of a graphic representation that facilitates to locate the temporal and spatial limits in the reviewed scientific production (see Figure 1).

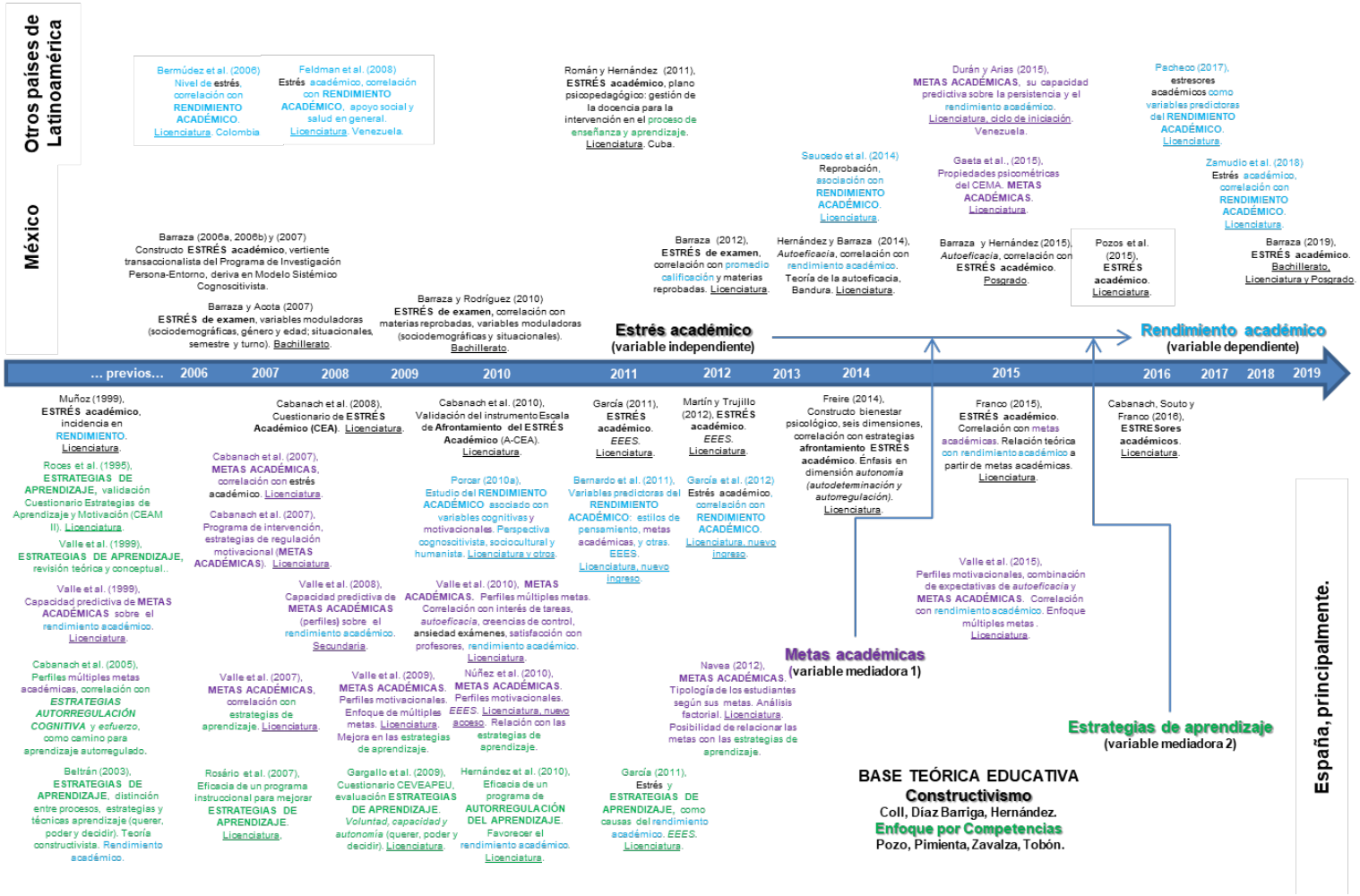


Figure 1. Timeline of the study of the variables

Results

The studies reviewed coincide in the proposition that the teaching model in the university context of the EHEA, as well as in Latin American countries, represents high demands and requirements for students, confirming its influence on their well-being during their time at university. They indicate that they may perceive, even temporarily, a lack of control over the new environment, particularly in the initial cycle, providing evidence that the context is a potential generator of stress and mobilizer of their cognitive and motivational self-regulation, with an impact on their performance. The synthesis of the review has been organized distinguishing the findings at the international and national levels and indicating five vestiges.

Findings that shape the timeline at the international level. First vestige

Several researches consulted provide evidence of the relationship between stress and academic performance. According to the doctoral thesis of Muñoz (1999), a double design study, pre-experimental pretest-posttest of a single group, and quasi-experimental control group with posttest only in which 249 Psychology students from the University of Seville participated. The author confirms that students presented a greater deterioration of their health and emotional state during final exams (potent stressor). Although the difference in the pretest-posttest measurement is not significant, it is confirmed that the teaching methodology applied in the experimental group (less role ambiguity of the teacher and greater control of the subjects over their academic environment) did have positive effects on the organizational behavior of the students and, therefore, on their possibility of obtaining better results. It suggests including in the study of stress in the academic context the incidence of modulating variables of a psycho-pedagogical nature.

Bermúdez et al. (2006) conducted a study on stress involving 64 medical students from the University of Manizales, Colombia, measured on the basis of the Stress Questionnaire of the Ministry of Labor and Social Security. Academic performance was measured based on grade point average. They conducted a regression analysis, whose model includes the variables of stress level, depression, family dysfunction, and alcohol consumption; this model was able to explain only 4.7% of the variance of academic performance ($R^2 = 0.497$). The results confirm a significant correlation between stress level and depression, family dysfunction, and alcohol consumption. The relationship between performance and the rest of the variables is differential among the eleven semesters, the stress level is oscillating, it increases and decreases, registering its highest value in the seventh semester while performance registers the highest value in the eleventh semester. It is likely that the high academic demands of the medical curriculum may be perceived as more stressful in some semesters depending on the learning environments generated by teachers.

Another study is that of Feldman et al. (2008), conducted at the Universidad Simón Bolívar, Venezuela, with 442 students enrolled in exact sciences to whom the Academic Stress Questionnaire was applied before the end of the current term when students must make the decision to continue or withdraw in order to avoid failing the

corresponding subject(s) (De Pablo et al., 2002). To explain academic performance (grade point average), they included in the regression model the level of stress, current trimester, age, and perception of social support; the model explains 13% of the variance of performance ($F= 4.41$, $p< 0.001$); a significant positive correlation is reported: the higher the intensity of stress, the higher the performance; and an inverse correlation, the higher the stress, the younger the student's age and the lower the perception of support. Three stressors stand out in the analysis: exams, time distribution, and amount of material to study.

In this same line, García et al. (2012), in a research with 199 new students entering the University of Valencia, carried out the measurement of stress through the application of the Academic Stress Questionnaire at the University and its relationship with academic performance (number of credits passed). They report that academic stressors explain only 5% of their variance ($F= 2.71$, $p< .05$). Of the stressors analyzed, lack of time to complete activities, academic overload, and the exposure of class work stand out, with significant correlations; those who perceive more stress manage to pass a greater number of credits.

For their part, Cabanach et al. (2016), carried out an investigation to confirm the structure and reliability of the Academic Stress Questionnaire Stress Scale (E-CEA), in the context of the EHEA in which 1,196 students from various universities in Spain participated, configured on the basis of the transactional model of coping of Lazarus and Folkman (1986). The CEA had been previously validated in university contexts (Cabanach et al., 2008). The results confirm the structure of eight factors, three of which are the most potent stressors: Teacher methodological deficiencies, exams, and public speaking. For their part, Martín and Trujillo (2012) had applied the CEA Questionnaire to 492 students of the Polytechnic School of the University of Malaga and confirm that the teaching model affects high levels of stress, with significant correlation in the comparison by sex (higher in women). For their part, (Cabanach et al., 2010), conducted a confirmatory study of the structure and reliability of the CEA Questionnaire Coping Scale, with 835 students of the University of La Coruña of health sciences and education; the structure and reliability of three factors are confirmed: Positive reappraisal, Search for support, and Planning.

Also on the relationship of stress with academic performance, the doctoral thesis of Pacheco (2017) was reviewed in which 229 students from a University of Puerto Rico participated. The CEA questionnaire was applied to measure stress and reports that the subscales of stressors and stress responses correlate inversely and significantly with academic performance (attempted-passed credit rate and GPA). This implies that the higher the perception of stress and the more symptoms affecting students' well-being, the lower their academic performance. The regression analysis indicates that stressors explain 27% of the variance in performance ($F= 9.14$, $p< .001$); specifically, poor social relationships in the academic context, lack of control over one's own performance and exams.

Given the diversity of instruments for measuring stress, both in the Spanish context and in Latin American countries, the *first vestige* is identified, studying the

relationship of stress and performance in university students in Mexico, having a validated instrument for this context: Inventory SISCO-SV-21 (Barraza, 2018).

Second vestige

In relation to research on academic stress and its relationship with academic goals, the doctoral thesis of Franco (2015) was consulted. The CEA questionnaire was applied to 458 students at the University of La Coruña, as well as Skaalvik's Goal Orientation Scale (1997). It reports as the most powerful stressors the methodological deficiencies of the teaching staff, academic overload, and exams. Two aspects of the discussion presented are noteworthy: one is the author's affirmation of the strength of exams as a stressor and its incidence on performance; the second aspect is that motivational orientations to academic goals can act as a modulating factor of the influence of stress on students.

In this vein, another research by Cabanach et al. (2007), addresses the assessment of academic goals and vulnerability to stress with the participation of 258 students enrolled in degrees in the area of health at the University of La Coruña. The CEA questionnaire and Skaalvik's Goal Orientation Scale (1997) were applied. The authors affirm that academic goals model the student's sensitivity in the perception of the demands of the university context; when he/she clarifies his/her commitments, he/she can discern with greater probability which are the interactions that violate his/her well-being (he/she perceives them as a challenge or threat) and can discern how to face them. The conceptualization of academic goals in the study is broken down into: Type 1, mastery or task approximation goals, which refer to interest in learning and developing skills; Type 2, work or task avoidance goals, referring to avoiding effort; Type 3, performance approximation or self improvement goals, whose interest is to demonstrate superior ability and performance to others; Type 4, performance avoidance or self defense goals, aimed at avoiding appearing less than competent and avoiding negative judgments. It is concluded that students with Type 1 goals who did not register symptoms of distress, seek to use problem-focused active coping strategies. In contrast, students with type 4 goals, with manifestation of perceived stress and with feelings of physical and psychological discomfort, resort more to emotion-focused strategies.

In the same line of research, the doctoral thesis of Freire (2014) on the psychological well-being of 1,072 students of the University of La Coruña, of various degrees, was consulted. The Coping Scale of the CEA Questionnaire was applied. The results confirm a significant causal relationship between students' psychological well-being (independent variable) and coping strategies (dependent variable). This relationship was found in the six dimensions of well-being: self-acceptance, positive relationships with other people, autonomy, mastery of the environment, purpose in life, and personal growth. In particular, the higher the value of self-acceptance, the greater the use of the three coping strategies (Positive reappraisal, Seeking support, and Planning). The author affirms that self-efficacy becomes relevant in the study of students' self-regulation.

In this respect, the findings of the research by Valle et al. (1999) shed light on the determinant variables of academic performance of 614 students of different degrees at the

University of La Coruña. They propose a model constituted by the following independent variables (exogenous): Previous performance, Incremental conception of intelligence, Perceived ability, Perception of evaluation criteria, Analysis of task characteristics, Perception of teaching style, Perception of the type of subject; and dependent variables (endogenous) are: Causal attributions, Academic self-concept, Academic goals, Learning strategies, Academic performance. Based on a structural equation analysis, it is reported that the set of causal relationships in the model explain about 50% of the variance of achievement; in the specific relationship with each dependent variable, the model explains 15.9% of the variance of causal attributions, 26.1% of the variance of self-concept, 22.1% in the case of learning goals, 8.7% in relation to achievement goals, only 15.8% of the variance of learning strategies, and 40% of academic achievement. In summary, the model indicates that student performance is influenced by the way in which they self-perceive and regulate themselves in motivational terms and if they use strategies that favor their cognitive self-regulation and meaningful learning. This research set the standard for incorporating variables of a motivational and self-regulatory nature in the study of how students learn and what results they achieve.

In this regard, Valle et al. (2007) publish the results of a study on the relationship between academic goals and learning strategies with 632 students from different degrees at a Spanish university. They use the Questionnaire for the Evaluation of Academic Goals (CEMA-II), by Núñez et al. (1997). They consider five learning strategies: repetition, organization, elaboration, critical thinking, and metacognitive self-regulation. The results show a significant correlation between higher levels of learning goals and a greater use of the five learning strategies. On the other hand, there is a significant and inverse correlation between higher levels of academic work avoidance goals and a lower use of strategies, particularly the last two. A correlation is also confirmed between performance approach goals and the use of the last two learning strategies. This diversity allows us to affirm that when the student shows a clear tendency in his or her purpose of learning and accreditation, it is more frequent that he or she uses all the strategies to achieve it. This research set a guideline for assessing learning strategies from the perspective of multiple goals.

Following the footprint of the study of academic goals and learning strategies, we consulted the research of Núñez et al. (2010) in which 559 new students of the University of Oviedo participated. They applied the CEMA-II questionnaire. The authors state that goals set the tone for the learning strategies used by students, as they determine their effort, persistence, and self-regulation. The findings emphasize that students more frequently choose learning-oriented goals, a choice associated with greater time and effort for academic activities, as well as with the use of strategies for self-regulation of learning with a positive effect on performance. The results confirm a significant difference between learning-oriented goals and the rest of the goals. Students are "sometimes" motivated to engage in activities by pursuing reward-oriented goals (obtaining a worthy future job) and social valuation. In contrast, incoming students "rarely" choose goals that are "self" oriented, related to defending their image or trying to stand out from others. The authors propose to increase studies from the multiple goals approach.

In the same sense, Valle et al. (2009), carried out a theoretical-conceptual review, a historical analysis of the theory of achievement goals, whose starting point is the two-dimensional approach, which distinguishes between learning and performance goals, passing through the three-dimensional approach, which distinguishes in performance goals the tendencies of approximation and avoidance to the two by two model, differentiating these tendencies in both performance and learning goals. They conclude with the affirmation that this approach marks a line of research that is closer to and more representative of the functioning of the emotional nature that mobilizes the university student in the choice of goals. From this perspective, Valle et al. (2010) conducted a study involving 1,925 students from 16 degrees from five universities representative of the Spanish territory; they applied the Academic Goals Questionnaire proposed by Skaalvik (1997) and assessed its relationship with motivational variables for learning: interest in tasks, perceived self-efficacy, control beliefs, test anxiety, satisfaction with teachers, performance (current performance, performance expectations, and perceived level of knowledge). They provide evidence on the existence of six motivational profiles or groups, based on a cluster analysis: low generalized motivation, with a predominance of performance avoidance goals; with a predominance of learning goals; with a predominance of learning and performance avoidance goals; with a predominance of learning and performance approach goals; and high generalized motivation.

Among the main findings, the sixth group stands out with the highest scores in perceived achievement and level of knowledge, as well as high scores in the rest of the variables analyzed, except for satisfaction with teachers. On the other hand, the first group presents low scores in all variables, except in test anxiety. In between, the third group had the highest scores on task value, control beliefs, and satisfaction with teachers; high scores on perceived academic performance, knowledge level, and self-efficacy beliefs; and low scores on test anxiety. The authors suggest that, given the importance of the motivational component for cognitive work, teachers should have information about the motivational profile of their students, so that they can make the required curricular adaptation according to the motivational needs of the students; in this sense, they propose the notion of the zone of motivational proximal development.

The findings, provided by the research led by Valle and Cabanach, allow us to outline the relationship between the variables under study in the doctoral thesis: the motivational profile of the student as a modulating factor in the causal relationship between stress and academic performance. This is the *second vestige*, the intention to study this relationship of variables in a context of higher education in Mexico.

Third and fourth vestige

Continuing with the review of research, Valle et al. (2008) conducted a study in which 447 high school adolescents participated. The authors state that the predictive capacity of academic goals on achievement is scarce, giving it a more indirect than direct role and of great value in explaining student achievement. They applied the CEMA-II Questionnaire. Based on the findings, they suggest expanding the number of variables in the regression model for future research on the prediction of achievement, including

learning strategies as self-regulatory. They also make a distinction in relation to performance goals, stating that they could be more effective when they are assessed in a more competitive context such as in higher education, a scenario that could move more strongly their intentionality for higher grades (Valle et al., 2009).

This is the *third vestige*, the relationship of learning strategies as a mediating variable between stress and academic performance linked to academic goals. In this order of ideas, Rosário et al. (2007) conducted a study with a pretest-posttest quasi-experimental design with a control group. They applied an instructional program to improve the learning processes and strategies of 66 students at the University of Oviedo, the experimental group, and 42 more formed the control group. They used the Questionnaire of Knowledge of Learning Strategies (CEA), Inventory of Study Processes for Undergraduates (IPE, Rosário et al., 2006), Inventory of Self-Regulation of Learning Processes (Rosário et al., 2006; Zimmerman, 2000; 2002), and Questionnaire of Perceived Instrumentality to Self-Regulate Learning. The results show evidence of the effectiveness of the program with the experimental group; a relevant result is in relation to the knowledge of learning strategies. The experimental group recorded significant pretest-posttest differences ($M_{dif.}$= -.545; t65= -3.717; p=.000), while the control group did not record significant differences. It can be said that students in the experimental group improved significantly in the domain of declarative knowledge about learning strategies, decreased the use of a superficial study approach, and improved in the application of these skills in different and new tasks for them (transfer).

Coinciding with this intervention, Cabanach et al. (2007) also carried out a study to assess the effectiveness of a program for the management of motivational resources in which 258 students from various degrees at the University of La Coruña participated. The aim was to improve their awareness of how they manage their academic goals according to the demands of the context. A single-group pretest-posttest pre-experimental design was applied. The Learning Strategies and Motivation Questionnaire was applied. The results show evidence of the effectiveness of the program in relation to the use of cognitive self-regulation strategies (F= 8.177, p< .000) and in the regulation of effort (F= 2.808, p< .040) and register a significant difference in the comparison of means of the four groups of academic goals. The authors emphasize the relevance of self-efficacy beliefs that affect the student's self-regulation; it is important that the student perceives him/herself as capable of getting involved in the tasks, managing techniques and skills and overcoming obstacles in his/her interactions in the context.

The doctoral thesis of García (2011) on learning strategies and their relationship with stress and performance of 209 incoming students at the University of Málaga was consulted. The Cognitive Learning and Study Strategies Questionnaire (Valle et al., 2006) was used, which includes four strategies: selection, organization, memorization, and elaboration. To measure performance, a rate was constructed based on the number of credits passed in relation to the number of credits enrolled and the average grade. It affirms that performance is an indicator of efficiency and quality within the framework of the demands and requirements of the EHEA. He conceptualizes learning strategies

from the contributions of Beltrán (2003) and others, associating cognitive strategies with information processing; and warns that he did not include in the study those of an affective-motivational and supportive nature, nor metacognitive ones. Among the main results, it stands out that new students use the four cognitive strategies intensively, without registering a significant correlation with performance; in turn, the memorization strategy maintains a significant correlation with stress; and stress correlates inversely with performance: the higher the stress, the lower the performance.

In the Latin American context, the research of Durán and Arias (2015) on academic goal orientation, persistence, and performance of 205 new students entering the initial cycle of higher education at the Universidad Simón Bolívar, Venezuela was consulted. The results of the multiple regression analysis show that goals manage to explain 23% of the variance of academic performance (r= .153); a positive correlation is also confirmed between extrinsic goals (results), persistence, and performance, a possible scenario given the institutional regulations that condition permanence according to a minimum grade point average, which places academic performance as an indicator of efficiency and quality within the framework of the demands of the university system.

The research by Gargallo et al. (2009) was also consulted on the use of learning strategies. In our opinion, it is a fundamental reference because it presents a theoretical and methodological review of previous measurement instruments to validate the structure and reliability of their proposal: the Questionnaire for the Evaluation of Learning Strategies in University Students (CEVEAPEU); 1,127 students from two public institutions in Valencia participated. It assesses two scales, six subscales and 25 strategies. The scales and subscales are the following: Affective, support, and control or self-management strategies (motivational, affective components, metacognitive, context control, social interaction, and resource management), and strategies related to information processing (information search and selection, information processing and use).

Some antecedents cited by Gargallo et al. (2009) were reviewed to confirm their theoretical and empirical basis (Beltrán, 2003; Cabanach et al., 2005; Pozo & Pérez, 2009; Gargallo & Suárez, 2014). In this review, we were able to identify the psycho-pedagogical principles that support another instrument of our interest for the evaluation of goals (CEMA-II), which has already been validated in its Mexican version (Gaeta et al., 2015). Both instruments allow us to evaluate academic and social situations from an interactionist perspective of educational psychology, congruent with the constructivist postulates that place the student at the center as an active subject in his or her learning, capable of self-regulation, with the mediation of the teacher.

This is the ***fourth vestige***, to verify if the instrument is available to measure the two mediating variables in the relationship between stress and performance. It is found that the CEMA-II has already been validated for the university context in Mexico but not for the CEVEAPEU.

Findings that shape the timeline at the national level. Fifth vestige

In relation to the review of antecedents at the national level, it was carried out to complete the vestiges identified at the international level, particularly the instrument for measuring stress. Of the scientific production in Mexico, eight researches on academic stress were consulted, four of them assess its relationship with performance. Barraza's research was consulted for the conceptualization of academic stress (2006a), understood as a systemic process of an adaptive and essentially psychological nature, which is presented in a descriptive manner in three moments: 1) the student is subjected, in university contexts, to a series of demands that can be valued as stressors; 2) those stressors provoke a systemic imbalance when the situation is perceived as stressful, which the student manifests in a series of symptoms or indicators of imbalance; 3) that imbalance forces the student to perform coping actions to restore the systemic balance. In two more of his investigations, Barraza (2006b; 2007) describes the theoretical support of such conceptualization based on the transactional model of stress coping (Lazarus and Folkman, 1986), affirming that it is ascribed to the research program from which it is assumed that stress is the result of a dynamic relationship between the person and the environment. The author suggests enriching the analysis of academic stress by including modulating variables for a better understanding of the vulnerability and resilience of students to stress.

In 2007, the author publishes the instrument for measuring academic stress; a decade later he publishes the second version, the SISCO SV-21 Inventory, confirming its structure and reliability, with three resulting factors or dimensions: stressors, symptoms, coping strategies (Barraza, 2018).

Two more of the studies consulted studied exam stress in upper secondary education (Barraza and Acosta, 2007; Barraza and Hernández, 2010), with the participation of 1,875 students from a public high school and 343 from a private high school. The results in both studies coincide in that more than 80 percent of the students perceive a medium-high level of stress during the exam period. The most frequent stressors are: grade that could be obtained, type of questions, exercises or problems that are included. Regarding the variable of failed subjects, a self-reported indicator of academic performance, Barraza and Hernández (2010) report that it correlates significantly with 16 of the 27 indicators of exam stress, as well as with the stressors and symptoms components and with the frequency with which it occurs. In a later research on stressors and their relationship with grade point average and failed subjects in which 168 students from the Pedagogical University of Durango participated, Barraza (2012) reports that there is a significant and positive correlation between the record of failed subjects and the frequency of stressors; and inversely with grade point average, the lower the average, the higher the frequency of stress; the latter correlation is confirmed by Zamudio et al. (2018) in a study on the relationship between both variables.

Other research consulted provides evidence on the correlation between academic performance and self-efficacy perceived by students (Hernández & Barraza, 2014; Barraza & Hernández, 2015); they are of interest because self-efficacy beliefs are a

decisive factor in the achievement of goals and in the realization of academic activities. Another study conducted by Barraza (2019) in which 250 students participated, high school (110), undergraduate (84), and master's (56), confirms that the manifestation of academic stress is equivalent in the three educational levels, with high presence and medium-high intensity, without registering significant differences between levels.

We also reviewed the research of Román and Hernández (2011) who propose to adapt the classic concept of stress to the psycho-pedagogical level as a guide for its study in university contexts. In our opinion, it complements the conceptualization proposed by Barraza in two areas: 1) *the subject of action*: enriching the conception of the student as an active, critical, and reflective subject, capable of adapting and self-regulating; and, 2) *the student's experience of stress as a process*: assessing the student's perception in the teaching and learning process with the mediation of the teacher.

Conclusions

The background review provides empirical evidence at the international and national level in relation to vestiges that theoretically and methodologically guide the doctoral thesis in process. In particular, it is important to include in the study of the causal relationship between stress and academic performance the incidence of mediating variables: academic goals and learning strategies, both with the purpose of mobilizing the student towards self-regulation, a relationship located in a university context in Mexico for its measurement and assessment. The basis is the conceptualization of stress proposed by the Mexican author Barraza (2006a; 2007), coinciding with the theoretical basis that supports various investigations consulted in the international plan and that refer to the coping model formulated by Lazarus and Folkman (1986); complemented with psycho-pedagogical principles proposed by Román and Hernández (2011).

Academic stress is understood as a process that the student experiences in their interactions in the university context, in three moments: First, he is subjected to a series of demands; second, when the situation is perceived by the student as stressful, it causes a systemic imbalance that manifests itself in stress indicators; third, this imbalance forces him to perform actions to restore the systemic balance, for which he resorts to the use of both stress coping strategies and strategies for his cognitive, emotional, and metacognitive self-regulation with the guidance of the teacher, seeking to learn, accredit, and remain in the system.

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Receipt date: 07/08/2020
Revision date: 02/08/2021
Acceptance date: 05/31/2021

MLS - EDUCATIONAL RESEARCH

http://mlsjournals.com/Educational-Research-Journal

ISSN: 2603-5820

How to cite this article:

Mundet, L. B. & Peña Muñoz, J. M. (2021). Perception of competences in professionalizing practices and labor insertion of the technicians in text writing. *MLS Educational Research, 5*(2), 59-72. doi: 10.29314/mlser.v5i2.531.

PERCEPTION OF COMPETENCES IN PROFESSIONALIZING PRACTICES AND LABOR INSERTION OF THE TECHNICIANS IN TEXT WRITING

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Abstract. The aim of the research is to analyze the perception of text writers graduated from the Instituto Superior de Letras Eduardo Mallea (ISLEM), in relation to professionalization practice competencies and whether or not they are appropriate for job placement requirements. The work is linked to the dynamics of application of the Line of Research Labor Competence, Education and Employment of the Universidad Internacional Iberoamericana and is based on the contributions of the socioforming and systemic methodology of an organization approach. The hypothesis relates two variables: a) the perception that the text writers have about the mastery reached at the time of the professionalization practices is related to the level of requirements experienced during the work exercise of the writing editor's skills, and b) employers' requirements, in order to weigh their matches and identities. The methodology is focused on a field study, non-experimental and cross-sectional, correlational, quantitative cut where relationships are sought in order to verify the hypothesis. A questionnaire is applied to collect information about both of the variables. The population is constituted by the totality of graduates from the ISLEM, represented by 51 technicians in text writing graduated with experience in the area. There is no sample selection, population census type is performed. In the results, coincidences between the two types of perceptions of graduates are obtained. To conclude, a proposal is made, which raises the layout of a continuing training program about competences subject to changes in the labor market, essential for the labor integration of all professional writers graduated from ISLEM.

Keywords: Communicative competencies, writing, professionalizing practices, labor insertion.

PERCEPCIÓN DE COMPETENCIAS EN LAS PRÁCTICAS PROFESIONALIZANTES E INSERCIÓN LABORAL DEL TÉCNICO EN REDACCIÓN DE TEXTOS

Resumen. La investigación analiza la percepción que poseen los redactores de textos, egresados del Instituto Superior de Letras Eduardo Mallea, ISLEM, Argentina, en relación con las competencias adquiridas en las

prácticas profesionalizantes y los requerimientos del acceso al empleo. El trabajo se inscribe en la Línea de Investigación Competencia Laboral, Educación y Empleo de la Universidad Internacional Iberoamericana, UNINI, México, y se basa en los aportes del enfoque de la socioformación y de la metodología sistémica de una organización. La hipótesis enfrenta las dos variables: a) percepción de los redactores egresados respecto de sus competencias adquiridas en las prácticas profesionalizantes y b) requerimientos de los empleadores, a fin de sopesar sus correspondencias e identidades. La metodología se enfoca en un estudio de campo, no experimental y transversal, correlacional, de corte cuantitativo, donde se buscan relaciones para verificar la hipótesis planteada. Se aplica un cuestionario que recoge la información de las dos variables citadas. La población es constituida por la totalidad de egresados de las promociones de la tecnicatura del ISLEM, representada por 51 (cincuenta y un) técnicos en expresión escrita con experiencia en el área. No hay selección de muestra, se realiza tipo censo poblacional. En los resultados, se obtienen coincidencias entre los dos tipos de percepciones con pocas variantes. Para finalizar se realiza la propuesta, donde se plantea un programa de formación continua de competencias ajustadas a los cambios detectados en el trabajo e indispensables para la inserción laboral del egresado redactor de textos del ISLEM.

Palabras clave: Competencias comunicativas, expresión escrita, alumno en prácticas, acceso al empleo.

Introduction

Tertiary education in Argentina and in Latin America in general, in contrast to university education, which is usually oriented toward research, assumes the commitment to train professional technicians who have the task of entering the labor market, almost immediately, in key places where they require the competencies for which they were prepared. Hence the need for constant revision of processes, professional functions, and training programs in order to incorporate changes produced internally and externally in their contexts.

One of the most plausible ways of generating study plans for a career, according to González (2016), is to carry out a Situational Analysis of Work (AST); this means forming a multidisciplinary workshop with academics, businessmen, supervisors, and experts, whose objective is to gather reliable information about the competencies that the graduate must possess in order to perform successfully in the labor field. And although for the educational center the users are the priority of the actions of its members in order to guarantee an effective service, it needs to offer the best careers and, therefore, the best study programs; hence, every four years the pertinence of the educational programs is evaluated in order to better adapt them to the accelerated technological rhythm of these times.

The organizations involved in the training of professional technicians for labor market insertion (education center-State-enterprises) are beginning to understand the importance of applying some cooperation strategies: knowledge networks, work teams, establishment of agreed-upon guidelines for the sector, among others. Thus, governmental entities are willing to integrate joint projects based on established guidelines, which are the result of roundtables with those involved, state support in methodologies, project financing, and mutual agreements. The research cited in this article emphasizes that the link between the members of this triad helps to face permanent changes.

While it is true that significant progress has been made, technical education institutes currently have several limitations in terms of training of management and teaching staff, infrastructure, application of the traditional educational model and operational problems concerning professionalizing practices (PPs hereinafter) linked to the labor sector. According to the National Institute of Technological Education (2019), there is a lack of practical skills of students/graduates when it comes to entering the labor market, which includes both practical activities within educational centers and work experiences in productive establishments. With

regard to the pertinence of the contents, there are also gaps in training in specific knowledge and a need for updating in view of the requirements of industry.

In order to maintain the validity of the training contents, it is essential that vocational training institutions are in permanent contact with the social and productive reality, its innovations and its expirations. Florez, Luraschi, and Butti (2017) consider it key for students to carry out a practice where they experience situations as similar as possible to the real world, in order to integrate learning with a view to becoming familiar with the work processes of the profession. Under these requirements, the functions of managers, teachers, and students will have to focus on PPs, transversal curricular spaces that dominate the development of technical competencies adapted to the demands of the world of work.

These PPs, considered as the most valued educational innovations of technical institutes, allow the future professional to build knowledge, since a graduate will have to face the problems and demands that arise at every moment in the context where he/she works. From this it follows that higher education institutions must be committed to providing strategies for students, so that they internalize knowledge and skills, and at the same time experiment in real or simulated environments, reflect on practice, and achieve a meaningful understanding, as well as provide the means and equipment for access to the most relevant information.

The research by Di Meglio, Barge-Gil, Camiña, and Moreno (2019) points out that, for an effective performance of the skills, students should assume an active role in relation to their learning, from reflection spaces where the importance of the group and the view of others is emphasized. Applying conflict resolution strategies in the tasks of the labor market makes it possible for students to detect obstacles, analyze them, and understand their causes and effects. This critical-reflexive attitude helps to confront disciplinary knowledge with reality and at the same time to go deeper into the why and wherefore of actions and strategies. Thus, recognizing questionable and debatable knowledge allows students to rethink it instead of reproducing it. Therefore, knowledge must integrate theory-practice through analysis and reflection in problem solving, learning by doing, and reflecting on what they do.

On this same subject, Fascendini, Guaita, Peralta, and De Gennaro (2019) express the need to articulate the workshops of the PPs to the curricular structure of the training, which they classify as valid opportunities of professional training for promoting shared learning among peers and open to the reality of the labor market. However, Silva *et al.* (2019) found that the exclusive development of specific competencies and the neglect of the strengthening of generic competencies tends to cause adaptation difficulties for graduates in the initial stage of their professional development.

These requirements imply the need to review the competences of the students of the Higher Degree in Text Writing of the Instituto Superior de Letras Eduardo Mallea (ISLEM). In this sense, this article aims to present the analysis of the empirical context and the results obtained from the instrument applied to the research that confronts two variables: a) the perception that ISLEM graduates have of the skills acquired during their training as writers - specifically, in the PPs- and b) the perception of the skills required in the labor market.

Literature review

The constant evolution of the economy and the global market, coupled with the high degree of national and international competitiveness, has required public and private organizations to implement innovative strategies and adjusted to reality to survive; consequently, the demands force employers to seek human talent with qualified profiles in order to adapt to changes, that is, individuals with mastery of increasingly specialized skills that add

value to the production process. Therefore, organizations must be prepared for what Pedreño (2017) calls "the disruptive impact," essential in the management of the various commercial and industrial sectors of any society. It is already a palpable evidence industry 3.0 or 4.0, big data, *machine learning*, among others, which produce great impact on the various production systems.

At the same time, most national and international actions recognize the need to strengthen the pertinence of the professional profile with viable alternatives for insertion that allow the consolidation of the labor market with the training received in institutions of the educational system. Undoubtedly, it is not an easy task to calibrate the work of companies to the demands of the context, but this effort cannot be made alone because it requires, as mentioned above, an alliance between the entities that make life in the productive system, such as State agencies, professional training centers, and business associations.

Hence, Tomassiello, and Zani (2016) warn that educational institutions should not be held solely responsible for the fact that curricular structures are not adapted to professional management or to global market problems. The hope of adapting to the new lies in the interdisciplinary practices of groups that can contribute to stimulate the emergence of different visions of the problem that result in the updating of knowledge with positive results for graduates and the institution.

It is based on the idea that the demands of the labor insertion of the technician in copywriting become increasingly complex, given the greater challenge of organizations and human talent. The graduate is faced with technological progress, the gap between large and small companies, competitiveness, research, innovation, lifelong learning, among others. Knowing the complexity described and carrying out the periodic evaluation of competencies by the actors involved in the insertion of new professionals in the sector, allows structuring a process of building strategies in each organization and among those involved to highlight the difficulties and possible individual and collective actions when undertaking and verifying the success or failure of a program.

The importance of the evaluation of the necessary competencies of professionals in writing contributes to improve the enunciation and implementation of the training program; therefore, this should be considered as a continuous process of data collection and processing through the review and monitoring of the functions of professionals, technological advances, and the demands of the sector. This monitoring will make it possible to discover variations in the text production process and to establish criteria for its progress and technical reorientation. As for the companies, Castaño, López, and Prieto (2011) explain how they draw up a profile of requirements for each position or professional:

> This description must be written; following an objective format to collect requirements, content, and scope of the position: what it does, how it is done, why, where, and when it is done: mission/objective, functions and activities, requirements (knowledge, skills, experiences), responsibilities, hierarchical and functional relationships, working conditions. It must be up to date and current. It is recommended to review it at least every two years (p. 21).

According to Gagliardi (2008), training programs should design broad professional competencies that go beyond the basic or specific ones of the career which will foster the updating of skills with the employer sector within a reasonable period of time. In this way, a representative percentage of those skills will be available in accordance with the feasibility of inserting the student in a first job, with which he/she will overcome the transition from the career to the labor market; that is to say, the great achievement will be centered on orienting and diminishing the labor and personal difficulties that may be presented to the graduate.

With regard to research related to institutional management and its link with the context, Foncubierta, Perea, and González (2016) consider that, in order to evaluate the acquisition, level of achievement, and performance of employability, it is essential, on the one hand, for each educational institution to offer specific training aimed at the labor market, and to promote and guide each graduate in this area (training, entrepreneurship and finding a first job, etc.). On the other hand, they consider it necessary to promote employability studies and reports that help in decision-making to strengthen the strengths of each educational center, as well as to solve the weaknesses and, in particular, to be attentive to the demands of society in a continuous spiral of evolution, according to studies such as the Barometer of Employability and Employment of Professionals.

Therefore, having a program of attention to the graduate's first job, on the part of the business and educational agent, can reduce the tension produced by looking for a job, which will be accompanied by relevant information in order to arrive at a real opportunity for independent and safe incorporation into the labor market. This is the moment to give value to the learning of the generic competences that drive the graduate not only to get a job but to keep it by having consolidated communication skills, presentation of their personal brand, to face an interview, or the development of their own business project as a possible alternative.

Regarding the process of recruitment and selection of professional writers, it can take place under a joint program between companies interested in human talent and tertiary institutions that train them. In this shared endeavor, the most updated technological tools will be used in order to feed back information that improves the quality of management of text production and promotes the formation of new skills.

An essential instance in the formation of the competencies of writing professionals are the PPs, defined by ISLEM (2016), as a process of construction of theoretical-practical and technical knowledge which students develop as a result of the training acquired in the spaces of the curriculum of the degree and the composition of real situations, relations with their peers and with the future work environment. Among the research related to PPs and work requirements is that of Visiers (2016), who emphasizes that in an integrated teaching system there should be the greatest possible concordance between training objectives, teaching-learning methods, and evaluation procedures. At the same time, tertiary studies, in line with this coherence, should privilege training based on competences and the student's protagonism as the driving force of their learning. From this angle, the PPs become the privileged scenario for their development and evaluation because they are based on a dynamic, dialoguing action in continuous learning, where curricular spaces are intertwined with the significant experiences of the students and the reality of the professional field.

In terms of the mastery of competencies, within the professional technical field, the text writer will need to develop effective and appropriate skills in situations that are difficult to resolve. For Tobón, Pimienta, and García Fraile (2010), a competence is understood as such when there is an integral performance to interpret, argue, and solve problems of context with creative sense and suitability, and at the same time it attends, in an articulated way, to the development of knowing how to be, to live together, to know, and to do to converge in the couples suitability-improvement, continuous-ethics. Therefore, competencies behave as an integral action before the situations of the context where not only the aforementioned knowledge is put into play but also those actions that give identity to socio-training. In the same line is the conceptualization of Tejeda, Sánchez, and Mariño (2012), for whom competence is a human quality shaped in an integral way, which merges the different knowledge (knowing, being, and doing), built through the effective performance of the personological resources of

professionals in terms of developing their career in a changing, dynamic, and complex work environment.

Villegas, Borjas, and Icaza (2015) reinforce the importance of implementing competency-based learning, both for the student by allowing him/her to put acquired knowledge into practice and integrate knowledge with the know-how, and for the teacher, whose role is enhanced in his/her mission to guide and train competent professionals in accordance with the demands of the labor market. The work of González Lorente and Rebollo-Quintela (2018) coincides with these results for whom the initial training of teachers is essential in their mission as facilitators of the mastery of competencies, job placement, improvement, and continuous updating of students.

On the basis of the effective results of the competency-based training model, ISLEM's Higher Degree in Text Writing has been developing a process of change in order to achieve its implementation. In fact, it has worked on its curriculum plan from the awareness of the existing organizational culture with the idea of intervening in the weaknesses and strengths of both its management and the rest of the members of the educational community whose objective is focused on being able to address with greater certainty the training program. Undoubtedly, information, guidance, and best practices centered on the student are required in addition to the time, resources, and capacities of teachers, functional agents, and of principals, vigilant leaders committed to generating real transformations and monitored with the needs of the social and labor context. In this regard, Garbanzo-Vargas (2016) emphasizes:

> [...] the workers of an organization act in different ways individually and collectively according to their nature. These do not function randomly and the success that is achieved is the product of a set of synergies that, driven in a certain direction, achieve it. Success does not come randomly, organizations are social cells that respond to stimuli from both the internal and external environment and, according to these, are their products, their behaviors (p. 69).

The development of the curricular program or career under the competency-based learning model, to which ISLEM adheres, expressed in Resolution No. 3770/MEGC (2017), requires the understanding and mastery of the teaching staff, who will adapt the teaching-learning circuit oriented towards this perspective. From this angle, the educational practice, exercised by all members of the institution, opens the gap in order to understand and master a new way of producing knowledge to inaugurate spaces of participation that generate responses to the needs of the labor market and, at the same time, contribute to the educational quality of the institute.

The professional profile proposed by the technical course organized by ISLEM for the training of technical writers is rooted in the communicative need to produce written messages of social circulation; for this purpose, not only will master extensive knowledge of the language in its various levels but also the techniques and strategies of different types of writing and textual styles in addition to new technologies aimed at the production and editing of texts.

The training program offered in the technician's degree seeks to reconcile the binomial formal education-work, therefore it establishes as an objective to logically order a set of curricular units related to the field of training in the area of the PPs of the copywriter (PP I, II, III, and Integrated PP). According to the aforementioned resolution, the goal is "to integrate the student in a context of learning situated in real environments related to the professional practice of the copywriter" (p. 17), for which different methodologies are applied, such as field work, case studies, and problem solving in real contexts.

Method

This study aims to analyze the perception of two variables: a) the perception of ISLEM graduates in relation to the relevance of the competencies achieved in the PPs, and b) the perception they experienced in the face of the demands of job placement.

Design

To address the correlation of the variables, quantitative research was used and the field study was instrumented in order to measure the variables; the non-experimental and transversal mechanism, and at the same time correlational, allowed us to analyze to what extent the observed variables were correlated which contributed to verify the hypothesis.

Hypothesis

In this sense, the research hypothesis led to confirm that the perception of copywriters about the mastery of competences achieved at the time of PPs is related to the level of employers' requirements.

Population

The population of this research was represented by 51 (fifty-one) senior specialists, graduates of the Higher Degree in Text Writing, studied at ISLEM from the first cohort of alumni in 2008 until July 2019. In this study we took all individuals who graduated from the program, who represent the universe on which we worked.

Instrument

The questionnaire was structured in 26 (twenty-six) questions on a five-option attitude scale (option 1 represents the lowest scale and option 5 the highest); the graduates indicated for each of the competencies the level of development they reached when they completed the PPs and the level of these competencies as a requirement to be inserted in the jobs as copywriters.

The validation process of the instrument aimed at confirming the validity of the content and structure was carried out through the Expert Judgment technique. For this purpose, the review of research professors from the Universidad Internacional Iberoamericana (UAI), in Argentina, belonging to the Department of Language, Education, and Communication Sciences of the Doctorate in Education, was requested. In this way, the experts evaluated, based on their perspectives, the selected dimensions and indicators as pertinent, as well as the way in which they are measured. In order to carry out this validation, they were sent through the e-mail account, not only the constructed questionnaire but also a summary of the problem, the general and specific objectives so that they could contextualize the elaborated instrument. Once returned, the scope of the evaluation was analyzed with the objective of incorporating the issued recommendations; among them: reformulation of items to clarify their content; suppression of some items because of their similarity with others or because of their uselessness with respect to data collection. The researcher took the observations into account in order to improve the questionnaire.

In a second instance, we proceeded to determine its internal consistency through the application of an initial questionnaire to the pilot group, the calculation of the reliability coefficient of Cronbach's alpha with the corresponding formula. For this purpose, the Excel spreadsheet was used to compute reliability estimates of instruments approved and accepted by the Neag School of Education, which yielded a result of 0.82. To answer the research question, descriptive statistics of frequency, percent, and means were used, and for the hypotheses, the bivariate correlational statistics on the basis of Statistical Program for Social Sciences (SPSS), version 19.0.

Investigation procedure

In the first phase, in correspondence with the design of the research idea, a prior informal diagnosis was carried out, which consisted of delimiting the object of study, achieved through informal interviews with different actors in the educational community of ISLEM, with preference given to students and graduates to find out their concerns regarding the competencies acquired during the PPs and throughout the career. In addition, a survey, classification, organization, and analysis of various institutional documents, reports of previous scientific work in specialized journals in the area of social sciences, education, and management was carried out. According to the literature review, it was decided to configure the variables: competencies and work demands, each with their respective dimensions and indicators already described in the explanation of the steps for the construction of the instrument.

In the second phase, a technique and instrument were designed to measure the graduates' perception of the relationship between the acquisition of competencies during the degree course and those required in the workplace. To this end, it was necessary to construct the instrument starting with the design of the variable map, the elaboration of the questionnaire, the validation by means of the expert judgment technique, and the reliability of the instrument.

During the third phase, the population was determined, which was identified as finite and small; therefore, the application of any sampling technique was not required, although it was necessary to locate as far as possible all the graduates of the text writing career.

In the fourth phase, the application of the instrument was carried out, which was administered in the face-to-face modalities, 38 (thirty-eight) members, and remotely, 13 (thirteen), through e-mail; in this way, the questionnaires were filled out.

In the fifth phase, the results of the instruments were analyzed through the statistical treatment by means of the SPSS program, version 19.0, where the relationships between the variables were observed, which allowed the verification of the established research hypothesis.

In the sixth phase, the proposal was formulated, whose general objective advised the design of a continuous training program by competences related to networking, entrepreneurship, personal branding, and mastery of technologies adjusted to the changes that occur in the labor market and indispensable for the labor insertion of the graduate of the technical course under study.

Results

The results were obtained in terms of the scores for each of the competencies that the text writer indicated based on the perception of both variables: a) mastery in the PPs and b) job demands. In general, the results, in all the competencies measured, were higher in the perception of job demands than those achieved in the PPs as can be seen in Table 1.

Table 1

Absolute and relative frequencies of both perceptions

Competences	Variable	Value 1	Value 2	Value 3	Value 4	Value 5
Grammatical	PPs	0 %	0 %	3,9 %	14,2 %	81,5 %
	Job placement	0 %	0 %	0 %	10,4 %	89,6 %
Textuals	PPs	0 %	0 %	5,8 %	36,4 %	57,8 %
	Job placement	0 %	0 %	0,1 %	29,6 %	70,3 %
Encyclopedic and information	PPs	0 %	2,7 %	28,2 %	32,8 %	36,8 %
	Job placement	0 %	0 %	0,8 %	18,4 %	80,8 %
General	PPs	0 %	1 %	19,1 %	44,6 %	35,3 %
	Job placement	0 %	0 %	2,9 %	33,4 %	63,7 %

Note: Prepared by the authors, based on the statistical treatment of data. The graduate rated each perception from 1 to 5; Value 1: low mastery of competence in the PP or work requirement; Value 5: high mastery of competence in both variables.

Calculations were then made to find out if there were differences between the perceptions of the mastery of competencies in both assessments. When the sum of the ratings for each of the text writer's competences was calculated, it was found that both had normal behavior; however, there were no significant statistical differences between the scores of the two perceptions in each of the competences measured as shown in Table 2.

Table 2

Average sums of both perceptions

Competences	Professional internships	Job placement
Grammatical	4,77	4,89
Textuals	4,47	4,90
Encyclopedic and information	4,30	4,80
General	3,90	4,50
Total Perception	4,20	4,70

Note: Prepared by the authors, based on the data obtained from the statistical treatment.

As can be seen in the results of table 2, the mean scores achieved in the measurement of perceptions of mastery of competencies for labor market insertion exceed the values achieved in the measurement of perceptions of mastery of competencies upon completion of the PPs.

However, it is evident that the general competencies are those that present the greatest differences in the means obtained in the instrument applied to the graduates on both perceptions. If these are analyzed, their affinity is noted as they do not present significant differences. Table 3 shows the results of the application of Student's "t" statistic.

Table 3

Relationship between the perceived mastery of copywriting skills achieved in the PPs and those required for job placement

Competences	**Correlation coefficient**	**Bilateral significance**
Grammatical	0,673	0,010
Textuals	0,713	0,001
Encyclopedic and information	0,404	0,119
General	0,233	0,171

Note: Prepared by the authors, based on the data obtained from the statistical treatment.

In summary, the values obtained show that the relationships between the specific competencies of the text editor (grammatical, textual, encyclopedic, and general information), acquired in the educational center are slightly greater than those required of the same tenor in the workplace. At the same time, all of them are significant at the level of 0.05 or lower of a positive nature. Therefore, the analysis indicates that there is a relationship between both perceptions.

Discussion and conclusions

The research hypothesis was aimed at finding out whether the perception of text editors regarding the mastery of competences acquired during their training is related to the perception of mastery of the knowledge and skills required in the labor market. From the data obtained in each of the competences consulted, it was possible to demonstrate that there is a relationship between both perceptions; in this sense, all the competences acquired during the training received during the PPs' process are required in the labor market for the exercise of writing but with higher values of demands.

Consequently, the results show the coherence between the study plan of the Higher Degree in Text Writing of the Instituto Superior de Letras Eduardo Mallea and the labor sector where the graduates of the institution work, among which are mostly companies in the communication sector of the Capital City and the Province of Buenos Aires, Argentina.

When dealing individually with each of the competencies consulted in the instrument and looking for the relationships between both perceptions, it was verified that the group of competencies with the greatest differences in terms of the values of the demands of the labor sector are the general competencies related to integration into professional teams, collaborative work, creativity, and proactivity.

At the same time, the competences with the smallest differences in the values of the demands of the labor sector and those achieved during the professional training are

grammatical, textual, encyclopedic, and information competences, which are part of the central axis of the technical course and are directly linked to the professional functions.

These differences may be associated with the lack of experience, i.e., the PPs do not guarantee sufficient mastery for employers to decide in favor of hiring a recently graduated professional. Marrero (2004) states that the lack of previous experience in careers is one of the aspects that makes it more difficult for young people to enter the labor market and questions the impossibility of being able to comply with this requirement since it is always demanded. In spite of the time that has passed - the author states it in 2004 - the experience continues being a limiting factor for the new professional that, although he has an official title, it is not enough at the time of filling a vacancy in a job for which he was qualified.

Regarding the implication of the data obtained in the present research, it is important to emphasize that for ISLEM it can be of great utility to apply the results for a revision of the study plan of the text writer career, where the necessary adjustments to the activities and strategies used by the teachers during the PPs will prevail in order to improve the mastery of each one of the competences that are directly related to the profession.

It will undoubtedly be of great interest for the institute to consider the feasibility of resizing the general competencies in the profile of the text editor in order to offer greater openness in his or her professional activities. At the same time, it will consider harmonizing with the offer of a continuous training program according to the current labor demands where it will be possible not only to have a formal professional training linked to grammatical, textual, encyclopedic, and information skills but also with a permanent training that will help them to consolidate their personal brand, good reputation, and high qualification for insertion in key places that request their participation. All this without losing sight of the fact that the labor challenges of the current times are extremely demanding in order to access qualified jobs.

Based on the approaches of the previous paragraph, a proposal was designed which has as its general objective the design of a continuous training program of skills related to networking, entrepreneurship, personal branding, and mastery of technology adjusted to the changes that occur in the workplace and essential for the employability of the graduate.

According to the results found in the research, it is positive to have identified the competencies that present deficiencies in the training program of the professional of textual writing from the current demands in the work environment; however, the biggest limitation for the improvement of the study plan is the bureaucracy in the administrative processes before the governmental entities that approve the curricular designs.

Nevertheless, and in spite of having focused on the problem, new questions arise: are vocational technical education organizations able to foster changes in administrative and academic management that will permit the competency-based approach? It is also necessary to review certain variables related to the continuous training of teachers, the structure of work in teams for the elaboration of projects, the reaction of teachers to new methodologies, the permanent revision of competencies, and the work in alliance with the entities involved in the updating of the professional profile.

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Receipt date: 09/02/2020
Revision date: 04/20/2021
Acceptance date: 07/13/2021

MLS - EDUCATIONAL RESEARCH

http://mlsjournals.com/Educational-Research-Journal

ISSN: 2603-5820

How to cite this article:

Venier L. & Álvarez Baz, A. (2021). Necessity as a factor to learn a second language. *MLS Educational Research, 5*(2), 73-87. doi: 10.29314/mlser.v5i2.541.

NECESSITY AS A FACTOR TO LEARN A SECOND LANGUAGE

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Abstract. This study analyzes the role of the necessity to learn English as a second language and its impact on students' motivation and performance at the International School of Kuala Lumpur, Malaysia. Unlike other second language classes, students who participated in this study have no prior knowledge of English and knowledge of the English language is necessary to study the rest of the subjects at this secondary school. As a result, these students must learn English not only as part of their academic studies but also to be able to participate actively in the school and the community in which they find themselves. This situation presents a different condition from other classes of second language acquisition and our interest lies in investigating what are the effects of this condition on the process of learning for these students. In order to analyze the role of this necessity, motivation and performance, we designed, administered and analyzed questionnaires, observed classes and longitudinally consulted grades achieved by this subject of English B for the International Baccalaureate (BI) program during the last ten years. The findings found in this study are relevant and have repercussions not only for students similar to these characteristics but for all other classes of second languages as well.

Keywords: learning, second languages, necessity, motivation, performance, English, Secondary Education.

LA NECESIDAD COMO FACTOR PARA APRENDER UNA SEGUNDA LENGUA

Resumen. En este estudio se analizan el rol de la necesidad de aprender inglés como segunda lengua y su incidencia en la motivación y el desempeño de alumnos de la escuela internacional de Kuala Lumpur, en Malasia. A diferencia de otras clases de segundas lenguas, los alumnos que participaron de este estudio no cuentan con un conocimiento previo de inglés y la lengua de inglés es necesaria para estudiar el resto de las asignaturas en la escuela secundaria. A su vez, estos estudiantes deben aprender inglés no solamente como parte de sus estudios académicos sino también para poder participar de manera activa en la escuela y la comunidad en la que se encuentran. Esta situación presenta una condición diferente a otras clases de adquisición de segundas lenguas y nuestro interés radica en indagar cuáles son los efectos de esta condición en el aprendizaje de estos alumnos. Con

el fin de analizar el rol de la necesidad, la motivación y el desempeño, diseñamos, administramos y analizamos cuestionarios, observamos clases y consultamos de manera longitudinal las calificaciones logradas por esta asignatura de inglés B del programa del Bachillerato Internacional (BI) en los últimos diez años. Los hallazgos encontrados en este estudio son relevantes y tienen repercusiones no solamente para un alumnado similar a estas características sino para todas las clases de segundas lenguas también.

Palabras clave: aprendizaje, segundas lenguas, necesidad, motivación, desempeño, inglés, Educación Secundaria.

Introduction

The research question proposed to be investigated in this study is the following: to what extent is need a motivational factor in learning English as a second language and how does it influence and impact on student performance?

Often, need is understood as the lack of that which is necessary to achieve a purpose. In this study, need is observed in those students who lack proficiency in English as a second language in a context where it is necessary not only to meet academic requirements but also to develop their social and emotional life.

Usually, in second language learning, need has been studied under the following prisms: communicative, learning, objective, and subjective needs. Communicative need is understood as the act of using the language with the aim of obtaining a purpose through the communicative act. In turn, learning needs are understood as "the gap between the learner's current state of knowledge and that which he/she aspires to achieve at the end of the course" (CVC, 2020). On the other hand, objective needs were identified by Richterich (1983) as those based on the social, cultural, and educational conditions of the learners, their level of competence in the language they are going to study, and the use they will have to make of that language or the purposes for which they are learning it. The same Richterich (1983), lastly, identifies subjective needs as those related to learning factors such as personal factors (affective and cognitive) of the learners.

These needs can be observed in the context of this study which is the International School of Kuala Lumpur (ISKL), Malaysia, secondary level, with students aged 16-18 years old. These students learn English as a second language because they must do so out of both objective and subjective necessity. This is a need that can be considered authentic and real, with measurable aims and objectives outside the purely academic. In this context, objective needs are closely related to subjective needs because the situation in which the learners find themselves directly affects their goals and their personal factors.

In other words, the learners in this study differ from other second language learners in that their objective and subjective needs are linked to the fact that they are in a context where communication and participation in the community is not possible without proficiency in English.

This need is common to many immigrants and refugees who move to another country. Therefore, our interest lies in investigating how this need has implications for learners'

motivation and whether there is a measurable effect on learners' performance in acquiring a second language.

The Role of need and motivation

Among the key factors cited in various studies for learning a second language, the following are commonly mentioned: intelligence (Gardner, 1983); motivation (Dörnyei, 1994); aptitude (Carroll, 2002); self-efficacy (Conti & Smith, 2016). Interestingly, none of them discuss how these factors are related to the need to learn a second language.

As Canale (1983, p. 42) explains, "a communicative approach must be based on, and responsive to, the (often changing) needs and interests of learners." Canale highlights "the (often changing) needs" of learners. It is therefore necessary to define the construct of communicative need as a biological need that goes beyond the language being learned. It is not considered as a factor in itself that has measurable and verifiable implications for the process of learning a second language on its own. This is due to various reasons such as the difficulty of defining this concept, the degree of variability within it, and even the difficulty of separating it from other factors.

For this reason, in delineating need as a key factor in second language learning, this study focuses on the role of this concept in relation to motivation. Although it is only one of many components of human behavior, several researchers such as Dörnyei (2001) and Gardner (2006) have identified motivation as a determinant of successful second language acquisition. As Schunk (2012, p. 23) explains, "motivation can affect all phases of learning and performance."

Working hypothesis

Schumann (1976, p. 45), regarding motivation, says, "this need common to all immigrants is resolved in different ways depending on age, motivation, expectations, or even the perception of the new society." Consequently, as a working hypothesis, we propose that this need to learn English as a second language has no effect on the motivation to learn a second language. Because of this, the following doubts arise:

- Is there a difference between a student who studies a second language to broaden his or her knowledge of the world? And one who does it out of the need to be able to communicate in the place where he or she is?
- Are these differences, if any, measurable to differentiate the two students from each other, and if so, do they have a measurable positive effect?
- Can we learn something about how to proceed so that this real and authentic communicative need can have positive effects in a typical school context where this learning is often seen as artificial and tedious?

Necessity and motivation in second language acquisition

When investigating the need and motivation as factors in the acquisition of a second language, Dimitroff, Dimitroff, and Alhashimi (2018) address this same issue in contexts different from ours, but with a similar approach. The aforementioned authors conducted a study

in which they distinguish the domain of English as a second language from English as a foreign language in order to identify the role of motivation in each of the two contexts.

The authors start from the assumption that the context of study of a second language is better than that of a foreign language and facilitates the learning of a foreign language. This assumption is confirmed in their studies, although the results are not entirely conclusive because there are other relevant factors such as the role of the teacher and the attitudes of the learners; aspects that cannot be ignored or completely isolated.

Another study of the same nature by Chen, Warden, and Chang (2005), shows that the incentives to study English in a context where English is a foreign language will usually be lower than in a context where English is a second language. Therefore, these authors mention that the first thing to do would be to understand the "local realities" of learners before applying results from other motivational studies from different parts of the world (p. 611).

Adwani and Shrivastava (2017, p. 159) refer to motivation as "the neglected heart of language teaching." The results of their research make us see that all learning activities are filtered through learners' motivation. Dörnyei (2001) mentions that motivation provides the primary impetus for initiating second language learning and later becomes the force that sustains this arduous and tedious process. In fact, according to the author, all other factors involved in language acquisition depend to some extent on motivation.

Maslow (1991) makes the union of the concepts of motivation and need by defining the first as the impulse that every human being has to satisfy their needs. The author then classifies these needs in a hierarchical way starting from the most basic. The result is as follows: physiology (e.g. breathing, food), security (physical, family), affiliation (friendship, affection), recognition (trust, respect), and self-realization (morality, creativity).

Taking the above into account, we ask ourselves the following question: Where does second language learning fit into these needs? The answer would be that, in school contexts where students study a second language as part of their academic training, they could be found in recognition and self-fulfillment. Therefore, needs that are not considered by Maslow (1991) as basic. However, there are cases such as the context of study in which this research is situated where learning a second language is associated with needs for security and affiliation which, according to Maslow (1991), would be situated at the top of his scale.

To better understand the relationship of the roles of motivation and needs, we can use Dörnyei's (2001) definition of motivation as a general term used to refer to the antecedents (causes and origins) of an action. Why do our students in schooling contexts learn a second language? In the answer to this question lies one of the keys to understanding the role of motivation:

In language acquisition classes where the motivation is almost exclusively academic, the need to learn a second language is not the same as in the students in this study. The need and motivation of these students is reflected in the fact that they have no other way of communicating in the society in which they participate both in and out of school.

In order to obtain a greater depth in this concept we are going to base ourselves on the investigations of Lambert and Gardner (1972) who make a key differentiation between two types of motivation, integrative motivation and instrumental motivation.

The integrative motivation occurs when the learner wishes to learn the language because of the interest that the culture arouses in him/her. This promotes a positive attitude and generates a possible objective which is to integrate into that social group.

Instrumental motivation occurs for utilitarian purposes, for example, to have a better chance of finding a job or obtaining higher qualifications.

Gardner (2006) argues that integrative motivation has a more lasting impact and is directly related to success. Sánchez, Navarro, and García (2007) also support the notion that students who are instrumentally motivated seem to be guided more by external aspects, such as various types of incentives that are less stable in nature.

The research that we have just mentioned has numerous detractors that we will enumerate below. In the first place, Au (1988) states in his study that there are somewhat conflicting results and to confirm this, he relies on the study of Gardner and Lambert (1972) when they explain that while in the bilingual context of Montreal in Canada, an integrative orientation is closely related to the learning of French, on the other hand, in the Philippines, an instrumental orientation seems to be more useful when it comes to learning English.

In this regard, Gardner (2010) states that his argument does not propose that the integrative orientation is more advantageous than the instrumental orientation but, rather, that students who are integrally motivated are more likely to achieve higher proficiency than those who are not. Researchers, such as Burstall et al. (1974), mention that both orientations contribute to the success of foreign language learners in the UK.

In conclusion, Dörnyei (2001) states that without "adequate motivation," even for learners with high proficiency skills and abilities, it is impossible for them to achieve long-term goals.

This statement mentioned by Dörnyei leads us to ask the following question in relation to the link between need and motivation: Is the need demonstrated in our study to learn a second language part of "adequate motivation"?

Part of the answer to this question is found in the study of Tae-Young (2009) who mentions that, the need to learn a second language is an "adequate motivation" only when the initial motive is embedded in specific learning goals and their own sense of participation in these goals. The results of her study showed that, in order to facilitate learning, learners had to internalize their own needs for themselves and transform them into what would be "the ideal of themselves in relation to this second language."

Finally, Androulakis, Mastorodimou, and van Boeschoten (2016) reaffirm that knowledge of the local language is an essential tool for immigrants and refugees in order to improve their socio-economic situation. If we extrapolate this statement to the specific context of our students, learning English as a second language becomes both an integrative and an instrumental necessity.

Method

Participants

The participants of this study are 42 ESL learners (28 females and 14 males) from various nationalities (though predominantly from Korea), studying at the International School of Kuala Lumpur (ISKL), Malaysia, and whose average time of their study duration is 3 years. Some generalities of the study population are as follows:

- A large number of them are in Malaysia for purely economic reasons.
- They have already acquired an adequate level of literacy.
- The main reason of their studies is to get good grades so that they can get into a university of some prestige outside Malaysia (USA, Europe, and Korea).
- The level of our students can be classified as B1 according to the Common European Framework of Reference for Languages (CEFR) and the International Baccalaureate (IB).
- These students study in English B class on a compulsory basis as they lack the necessary level to take other classes taught in English for native speakers.

Study Schedule

The study that we now present was carried out during 6 weeks from the beginning of February until mid-March 2020. For this work we formed two working groups with the same teacher and identical material. The first thing we did was to review the state of the art concerning learning factors, especially the need to learn a second language and the motivational factor. Next, we selected a specific learner profile who had a need to communicate in English as a second language in order to discover the extent of this need. Finally, we administered the data collection instruments and then analyzed the data.

Method of analysis

This study belongs to an exploratory research context that seeks to determine the nature of the problem and investigate the questions. It intends to explore the educational context at the International School of Kuala Lumpur (ISKL), Malaysia, with students from diverse backgrounds, who study English as a second language out of necessity.

To achieve this objective, a methodological triangulation has been carried out in order to obtain a multifaceted view of the students' motives, efforts, commitment, and results. The data collection instruments have been the following:

- A motivation questionnaire (mostly quantitative in nature).
- Informal discussions and classroom observations (qualitative in nature).
- A study of ratings over time (quantitative in nature).

As this is an exploratory case study, we sought to carry out a systematic and empirical investigation without deliberately manipulating variables where we could observe phenomena as they occur in their natural context for subsequent analysis.

On the other hand, in order to have data for a purely quantitative analysis, we obtained longitudinal data from the intermediate level ESL groups over the last 10 years. To this end, we contrasted the grades obtained and with other grades at the same level of learning of other languages, whose students are studying second languages as part of their IB curriculum fulfilling compulsory academic requirements.

Data Collection

We used the same online questionnaire for all participants and this was composed of 2 items on motivation and 2 items on attitudes. We took Kim's (2009) questionnaire as a model and the participants received it via email using Google forms. Participants' personal information and information about participants' reflections on learning experiences and on motivation are the two parts into which we divided our questionnaire. The first part had four demographic questions: age, gender, country of origin, and purpose of study (the results of these four questions are already mentioned in section 5.1 participants).

The section related to information about students' learning experiences and motivation contained three questions. The first one was about students' motivation in learning English as a second language. For this question we used a Likert scale ranging from "not motivated" to "very motivated." The second was an open-ended question that required ranking the level of importance of motivations for learning English. The third was a rating scale of the level of involvement in learning. Also for this question we used a Likert scale with a range from "never" to "always." Finally, the fourth was an open-ended question and asked the students for a list to answer the following question, "what are the factors that determine that a language class is stimulating?"

Analysis of results

As Kim and Kim (2006) mention, the status of English as a global language implies the ability to communicate not only with native speakers but also with non-native speakers of English around the world. While a clear goal of communicative need is deduced from this statement, within the context of English as a second language, several goals coexist at the same time.

The first of these is academic competence. Kang (2009) mentions that, in the context of our study (Asia), English test scores are the decisive factor for university entrance, job opportunities, as well as job promotion. Hence, we can state that this objective is part of instrumental motivation.

Another important goal to highlight is the desire for integration. Gardner and Lambert (1972) show that this goal is key to success in second language learning. Their studies are based on the assumption that a positive attitude leads to more active engagement. Therefore, the learners' desire to learn a second language in order to be assimilated into the community is the driving force behind the achievement of this goal. Consequently, we can see that the motivation in this case is not only instrumental but also integrative of personal and emotional development.

Taking into account this referential framework of Gardner and Lambert (1972), we were not surprised to see in the first part of our questionnaire answers like the ones we offer below

when answering the question about why students study English as a second language. Some of the representative responses were as follows:

- "I study English for my future and to be able to communicate with people from different countries and learn something different from my home country by being in an international environment."
- "I study English because I have to, it's important for my future."
- "I study English so I can study at an international school, which can benefit me to go to a university in the future."
- "I study English because it is a requirement for universities in South Korea. Moreover, it is the only language I can speak beyond my mother tongue."

If we analyze them together with the totality of the 42 answers to this question, we can observe different traits of what Gardner and Lambert (1972) identified as integrative as well as instrumental motivation. Therefore, we can highlight that these answers show a balance in this group of students.

In the second part of the questionnaire dedicated to measuring the degree of motivation and their attitudes, the first question was the following: "How do you feel as an English learner?" The possible answers ranged from "not motivated" (1) to "very motivated" (5). The results show that half of the students (21) responded with a 3 on the Likert scale; somewhere in between not motivated and very motivated. 16.7 percent of the students (7 students) responded with a 4 on the Likert scale, while the other 33.3 percent of the students (14 students) responded to be very motivated as shown in the graph below (Figure 1).

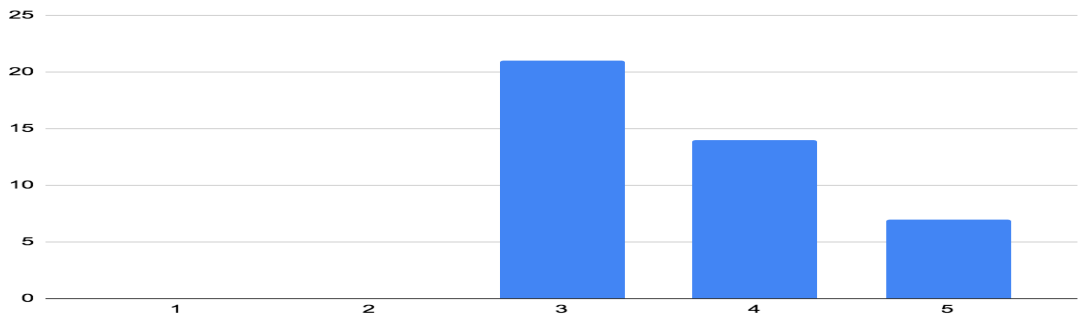


Figure 1. Results of the questionnaire where 1 means "not motivated" and 5 means "very motivated" in relation to the number of students who chose the qualification.

When analyzing these data we can visualize a positive tendency that, although it diminishes as greater motivation is identified, in its totality it has results that demonstrate that the students identify themselves with scales that go from "motivated" to "very motivated" and that there is an absence of demotivation.

The next question was: "Does learning English give you any feelings? If yes, please specify which one(s)." Virtually all of the responses (92.2 percent in total) identified with the feeling they produce for me is "feeling motivated." It should be noted that none of the responses included negative feelings. Those students who related "feeling motivated" as a feeling related

to learning English are demonstrating a positive feeling of encouragement and interest in the subject, a fact that coincides with the results of the previous question.

This coincidence is particularly relevant because it is related to the development of positive attitudes towards the class and its objectives. Even in terms of self-efficacy we can observe that students who identify themselves in such a way are often the same ones who have a high level of motivation. As Pan and Yang (2010) state, a high level of motivation leads to favorable attitudes towards language learning and this has a positive correlation with success in second language learning, as reflected by the absence of negative feelings in our survey.

Continuing with our survey and ordering the level of importance of the motivations for studying English on a scale from least to most important, we can see the following results (Figure 2):

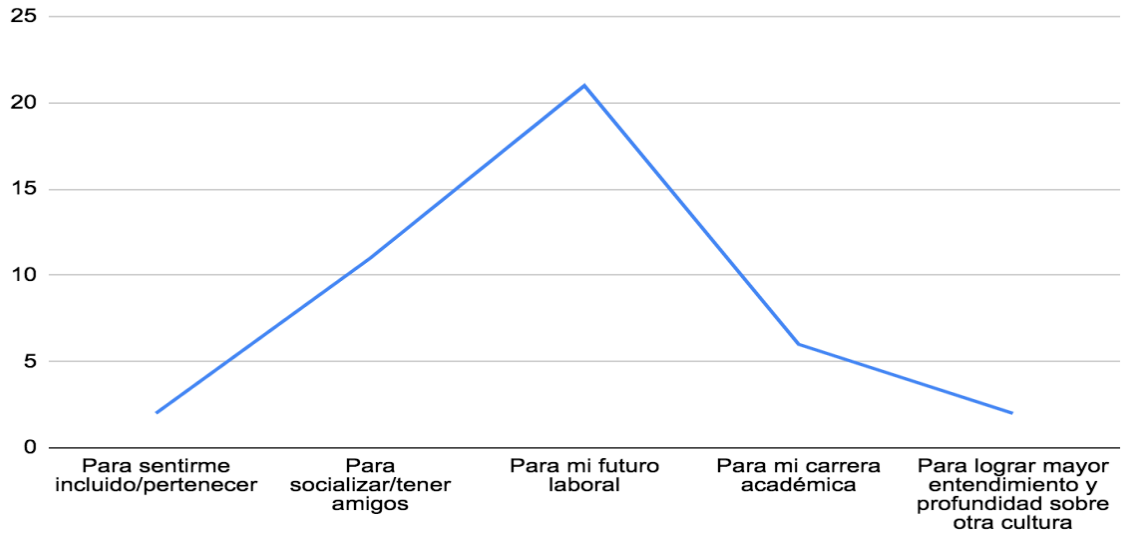


Figure 2. Results of the questionnaire where the level of importance of the objectives of studying English as a second language is ranked.

These results are not surprising in terms of instrumental motivation as the majority of students chose "for my future job" as the most important factor for learning English. A surprising fact is to see that the two extremes of the table, factors of "to feel included/belong" and "to gain greater understanding and depth about another culture" were the least chosen by the students. This fact leads us to think that the desire to broaden students' sensitivity for target cultures lacks interest in the learning process of these students.

One possible interpretation of these responses lies in the fact that both factors imply an attitude that goes beyond the merely instrumental and that in turn requires more effort than the merely pragmatic. However, the fact that the factors of "socializing/having friends" and "my academic career" have received a greater number of votes is related to the fact that both have a greater identification with the instrumental one.

The data so far analyzed reveal very interesting data since, in other language classes in similar academic contexts, but where the language being studied is circumscribed to a classroom reality and almost exclusively academic, the factor of "gaining greater understanding and depth about another culture" represents a key factor and objective. This is clearly not the case in the English language study context of our research because the students' need is broader

than purely academic and is clearly identified with socialization (integrative motivation) and academic career (instrumental motivation).

The following figure (Figure 3) informs us about their self-assessment of their level of engagement in learning English:

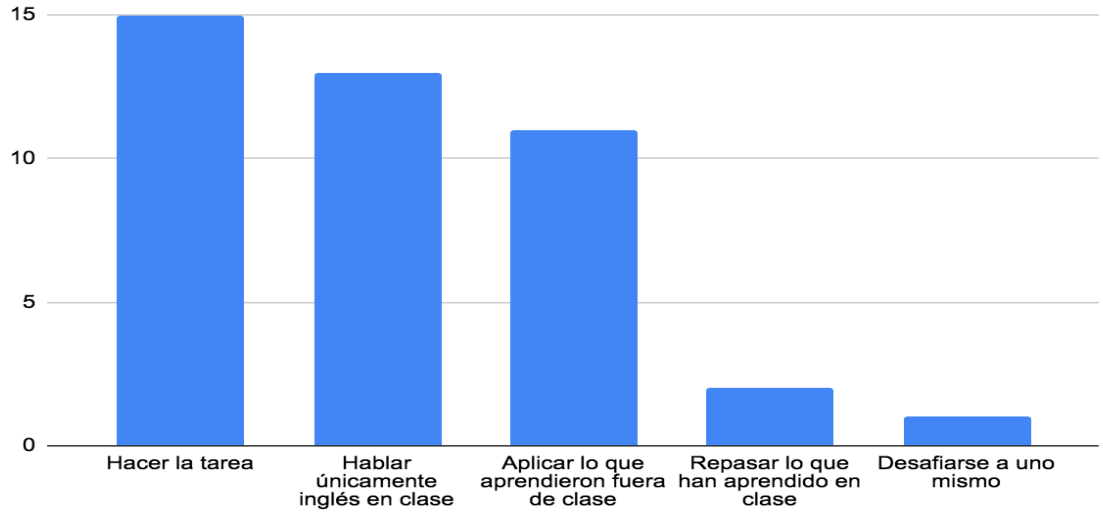


Figure 3. Results of the questionnaire showing the level of involvement in the tasks performed to learn English as a second language.

When analyzing these results we can see that most of the students use the language to do homework, to speak only English in class, and to apply what they have learned outside the classroom. The last two items ("reviewing what has been learned" and "challenging oneself") have not been significantly selected. Although doing homework requires instrumental motivation, it is not significant as it can be found in any language class. The factor of "applying what they learned outside of class" is what differentiates this class from any other language class in general, having the need to socialize and interact with the outside world. This is an advantage worth recognizing for the level of involvement of the students as well as the learning process.

In the last section of the questionnaire, the question, "What makes learning English stimulating?", the most representative examples found are:

- "It allows us to have a much wider variety of global opportunities, and I feel like I've accomplished something when I do my homework and notice that I've improved."
- "It's really the need to learn English and the pressure of reality (no friends, in a totally new environment). This has pushed me to learn English. Personally, I don't have any special feelings because it's the right thing to do and what I have to do and I have no other choice."
- "My English class was really fun and exciting. We did a lot of activities that required my involvement, and I feel that I have used my time in a meaningful way. In turn, it allows you to communicate with other people."

These responses confirm the trend shown throughout the questionnaire and demonstrate consistency with what was expressed above. It is of utmost importance to highlight

communicative aspects, future opportunities, the role of necessity, and meaningful involvement as priority factors. The most striking response is the one that states the following, "it is the right thing to do and what I have to do and I have no other choice," which is a clear differentiation from the reality of any other language class and confirms the role of necessity in learning this language. Thus objective and subjective needs are subject to each other by a mutual influence.

When contrasting the grades over 10 years for this subject with other second language classes in the ISKL school, these longitudinal grades do not show a high variation or variety and when confronted with the global average of grades for the same IB subject, we can observe that there are no variations either. The global average in those same years for the same exam is 5.75/7, while for our school it has been 5.77 out of a possible 7 points. These results are encouraging in terms of final grade; however, it is similar to what happens in other foreign language classes such as Spanish or French in our school. One possible explanation for these results is that they are subject to more factors than just motivation.

This multiplicity of benchmarks revealed through the questionnaire and the longitudinal analysis of the ratings offers us an opportunity to understand the roles of need and motivation as key factors in learning a second language. Down below, we will analyze their possible implications and strategies in terms of their effect on students' learning.

Discussion

This study has investigated the role of the need to learn English as a second language in a group of students who, without the opportunity to learn this language, would not be able to meet their academic requirements, nor would they be able to participate actively in the community in which they find themselves. In this study we investigate how this need has implications for students' motivation and investigate whether there is a measurable effect on students' performance in acquiring a second language.

The results of the questionnaires show that the need to study this language leads learners to have a high level of both instrumental and integrative motivation. However, the results of our research are not conclusive to the extent that we can say that this need leads learners to perform better when acquiring a second language. This is because there are many other factors which come into play in this process and which cannot be ignored, nor can they be isolated or left out.

In spite of all this, a positive effect on the need to learn a language can still be observed if we want to measure learners' motivation, as this study demonstrates. We have assumed that the need to learn a language is directly related to the need to fulfill academic requirements, and that social and affective issues had no effect on the language learning process. However, we have clearly demonstrated that the need has a measurable and verifiable effect despite various difficulties and/or ambiguities.

It is clear that teachers without analysis of the individual needs of each learner run the risk of treating all learners as a uniform mass and imparting knowledge in a single way and without the ability to differentiate. Second language instruction is often viewed, explained, and

analyzed from the point of view of practitioners, teachers, and researchers. It is time to engage learners with their different realities as well. As Schunk (2012, p. 58) explains, "working more on neurophysiological research on the variables of motivation and self-regulation will help to eliminate the gap between education and neuroscience." Byrnes and Fox (1998).

When they arrive in Malaysia, many students find themselves in a complex situation that does not allow them to integrate into school and social life. The result is a low level of affective anxiety, low self-esteem, and low willpower. However, learning English as a second language is the way out of this situation. Therefore, it is important to reaffirm the need to understand and analyze the local realities of the students in order to deal with them and to bring about positive attitudes towards study and a high level of motivation in students with these needs.

Limitations

Before concluding, it is important to highlight the limitations of this study. These limitations provide important information not only for the interpretation of the results but also for future research in the same area.

The three most important limitations in this study are the following: the time devoted to the study, the data collection tools, the impossibility of seeing changes in responses, and identifying processes that are dynamic.

First, the time devoted to the study was insufficient. A period of 6 weeks (which we used in our study) is relatively short to be able to detect changes in the nature and magnitude of motivation. More time to conduct the study could help us to see more clearly the evolution of the reasons why students may be faced with the need to study English as a second language and how these affect motivation levels.

Regarding the choice of instruments to measure motivation, this aspect entails difficulties related to a concept that is abstract, impossible to observe in a direct way, inconsistent, and therefore prone to temporal variations. As Dörnyei (2001) explains, motivation is a multidimensional concept, and its measurement is prone to represent a segmented part of an intricate psychological construct.

However, the data collection tools may have been incomplete in terms of the questions included or simply insufficient to measure aspects of the influence of the need to learn a language and the effects on motivation. A greater number of questions could have been added relating to classroom activities, the role of the teacher, the particular goals of each learner, learner beliefs and characteristics, and so on.

Finally, regarding the dynamic characteristic and the temporal variation of attributes such as motivation, we can mention that the main limitation of this study has been that the data obtained only represent a moment in time and do not admit changes. For future similar studies it would be very important to study the results of the questionnaires over time to identify and analyze possible changes.

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Reception date: 09/24/2021
Revision date: 11/25/2021
Acceptance date: 11/30/2020

MLS - EDUCATIONAL RESEARCH

http://mlsjournals.com/Educational-Research-Journal

ISSN: 2603-5820

How to cite this article:

Abad Castelló, M. & Álvarez Baz, A. (2021). Data-driven learning and lexical combinations: a didactic proposal with near synonyms. *MLS Educational Research, 5*(2), 88-104. doi: 10.29314/mlser.v5i2.562.

DATA-DRIVEN LEARNING IN SPANISH AS A FOREIGN LANGUAGE: A CASE STUDY WITH NEAR SYNONYMS

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Abstract. Language corpora have been used as a tool for language learning from the late 80s in the field of EFL (English as a foreign language) and there is a vast body of empirical research with English as target language. In the field of Spanish as a foreign language (SFL), while numerous pedagogical oriented articles can be found, empirical studies are much scarcer. A content that causes difficulties for students and that can benefit enormously from this approach is vocabulary. The aim of this case study is to show how certain activities with language corpora integrated in a teaching sequence can help students to deepen their lexical-semantic knowledge of the lexical units. This paper presents a practical application of Data-Driven Learning (DDL) in the context of Spanish as a foreign language: a didactic sequence for the acquisition of climate related near synonyms aimed at B2 students. Three different groups of British students of Spanish carried out activities with indirect and direct use of CORPES XXI. After the implementation of the teaching sequence, a questionnaire administered to the students showed satisfactory perceptions of the DDL activities, both towards printed materials and towards direct consultation of the corpus. Likewise, direct observations of the students' actions during their consultation of the corpus showed a positive attitude towards the use of corpora, although varying in degree. Results support the integration of ABD in comprehensive teaching sequences.

Key words: Corpus; Data Driven Learning (DDL); Spanish as a foreign language (SFL); teaching sequence.

APRENDIZAJE BASADO EN DATOS EN ESPAÑOL COMO LENGUA EXTRANJERA: UN ESTUDIO DE CASO CON CUASISINÓNIMOS

Resumen. Los corpus lingüísticos se vienen utilizando como herramienta para el aprendizaje de lenguas desde finales de los años 80 en el área de inglés como lengua extranjera con un extenso volumen de investigaciones empíricas. En el campo del español como lengua extranjera (ELE) abundan las propuestas didácticas mientras que los estudios empíricos son mucho más escasos. Por otro lado, un contenido que causa dificultades a los estudiantes y del que se pueden beneficiar enormemente de este enfoque es el léxico.

El objetivo de este estudio de caso es mostrar, cómo determinadas actividades con corpus lingüísticos integradas en una unidad didáctica pueden ayudar a profundizar el conocimiento léxicosemántico de las unidades léxicas. En este artículo presentamos un ejemplo de aplicación práctica del aprendizaje basado en datos (ABD) en ELE. Se trata de una propuesta didáctica dirigida a estudiantes de nivel B2 para la adquisición de cuasisinónimos relacionados con el clima. Tres grupos diferentes de estudiantes británicos realizaron actividades con uso indirecto y directo del corpus CORPES XXI. El cuestionario administrado a los estudiantes tras la implementación de la unidad didáctica mostró percepciones satisfactorias de las diferentes actividades realizadas, tanto hacia los materiales impresos como hacia la consulta directa al corpus. Asimismo, las observaciones directas de las acciones de los estudiantes durante su consulta directa al corpus mostraron una actitud positiva hacia el uso de corpus lingüísticos, aunque con diferentes grados. Estos resultados avalan la utilidad de las actividades ABD integradas en unidades didácticas completas.

Palabras clave: Corpus lingüístico, Aprendizaje basado en datos (ABD), español como lengua extranjera (ELE), unidad didáctica.

Introduction

Today there seems to be a consensus on the key role of lexical combinations in learning a foreign language (Lewis, 1993; 1997), more specifically, for the development of fluency (Wood, 2007; Thomson, 2017) and written expression (Garner, Crossley, & Kyle, 2018). Language learners are well aware of this. Also, a large majority of these learners are introduced to foreign languages with mobile applications based on sentences rather than monoverbal units. Following Nattinger and DeCarrico (1992), this preference may be due to the fact that these expressions allow lower level learners to use utterances which they cannot yet construct autonomously. Unfortunately, in subsequent stages of learning, learners often construct sentences in which they transfer the combinatorial of their native language with very unidiomatic and unnatural results (Lewis, 1993; Fenik & Dikilitas, 2014).

These pluriverbal units are difficult to teach (Nattinger & DeCarrico, 1992; Boers & Lindstromberg, 2009). Very often they are invisible to the learner, so the teacher has to help the learner to perceive these blocks and to inquire about them. To this end, the teacher must train his students to develop strategies of discovery and analysis in order to understand their meaning. However, this analysis may not be enough; the learner needs repeated encounters with these units in order to retain them in long-term memory. In this respect, linguistic corpora are an ideal tool for learning lexical combinations as they make the units visible, provide multiple encounters, and facilitate exploration and analysis of the units.

In this paper we present a proposal for the integration of DDL activities in a complete didactic unit for B2 level students, with which we want to show the benefits of this approach in the acquisition of lexical units, specifically, two groups of near synonyms related to climate. More specifically, we explore learners' perceptions towards the activities carried out with the two types of access to the corpus (printed materials and direct consultation of the corpus) and in two different environments: in the classroom and outside the classroom, as homework at home.

A first step in lexical acquisition is unit acquisition and a second step is unit retention. Craik and Lockhart (1972) with their Depth of Processing Hypothesis argue that there is a close relationship between cognitive depth and retention. Thus, actively working with a lexical unit will multiply the probability of storing that information in our long-term memory. This is what Hulstijn and Laufer (2001) called the "Involvement Load Hypothesis" of the task. That is, this load can be further optimized if the learner is involved in the task.

Recent empirical studies in SFL have explored the effectiveness of different types of explicit teaching of lexical combinations. Pérez Serrano's (2015) study showed that both explicit teaching and simple collocation highlighting are effective for collocation acquisition. Jensen (2017) tested two explicit teaching methods, contrastive analysis and translation (CAT) and form-focused teaching and both worked, concluding that "any exercise which leads students to cognitively engage with a set of previously selected collocations is likely sufficient for the learning of these items" (p. 16).

There are numerous didactic proposals for teaching lexical combinations in SFL. Higueras (2006) and Haddouch (2015) emphasize didactic sequencing. Fernández Montoro's (2015) proposal integrates lexis and culture. Chamorro (2017), like Jensen (2017), suggests contrastive analysis and translation activities. For his part, Pérez Serrano (2017) insists on the need to understand the meaning of the unit and, following de Boers (2013), suggests using linguistic motivation to deepen the knowledge of the block.

Data-driven learning (DLL) is a learner-centered approach to learning whereby, following Johns (1990), the learner is a detective investigating data drawn from linguistic corpora, and the teacher is merely a facilitator guiding the task. The most common way of presenting this data is in the form of concordance lines (see Figure 1), which have a word marked in the middle of the line, a so-called Key Word in Context (KWIC). These contexts allow the learner to observe positional and combinatorial patterns and, in this way, to grasp the different micro-meanings of words depending on their co-occurrences. In this way, DDL provides the two key steps for acquisition: grasping through the concordance lines and deep cognitive activity in the analysis and discovery tasks.

In short, it can be stated that data-driven learning brings the language learner closer to the knowledge of a native speaker. In the words of Pérez-Paredes and Zapata-Ros:

"The use of DDL activities can allow the language learner to access knowledge that, intuitively, a native speaker of the language may come to possess in at least some of the numerous registers of language use" (Pérez-Paredes & Zapata-Ros, 2018: p.7).

In English as a foreign language, the effectiveness of DDL for lexical acquisition has been proven in numerous empirical studies. Lee, Warschauer, and Lee (2019) conducted a meta-analysis of 29 empirical studies with lexis as the focus and found a significant positive impact in all cases. Also, the authors found that corpus use was most effective when matching lines were selected and when print materials were combined with direct corpus use. A final major finding was that DDL performed better in studies that explored deep knowledge than in studies that focused on precise knowledge. DDL studies on the acquisition of the deep dimension can have two foci: referential meaning or syntagmatic relations of lexical units. Among the former, Mansoory's (2014) studies on semantic prosody and Yilmaz's (2017) studies on abstract noun usage yielded positive results. Among the latter, Ackerley's (2017) studies on phraseology, Szudarski (2020) with phrasal verbs and adverbial locutions as target form and Liountou (2020), who investigated the acquisition of idiomatic expressions, showed positive effects on the acquisition of lexical units.

As for empirical research in the field of SFL, Benavides (2015) and Marcos Miguel (2020) explored grammatical aspects and Contreras Izquierdo (2019) investigated varieties of Spanish. So far, we have only found two investigations with lexical focus. In Vincze's (2015) study, students used a selection of concordance lines to correct placement errors with very positive results. More recently, Yao (2019) conducted a study, with 38 monoverbal units as target forms, in which she tested the effectiveness of the DDL approach against the use of traditional methods.

Finally, it should be noted that more and more authors insist on the need for DDL proposals that integrate DDL activities into complete didactic units with the use of lexical combinations as we propose. Following Leńko-Szymańska (2014), teachers have to develop materials suitable for the DDL approach of proven pedagogical soundness, combine them with other teaching techniques, and integrate them into their teaching context. Asención-Delaney et al. (2015) insist on this integration in teaching practice by stating that DDL "combines meaning-centered input with language-centered learning and should therefore be complemented by other learning activities that focus on the production and fluent use of new words to foster a comprehensive knowledge of vocabulary" (2015, p. 144).

Method

This case study aims to show how certain DDL activities integrated in a didactic unit can help to deepen the knowledge of specific lexical units: specifically, two groups of near synonyms. The study analyses the students' perceptions of the activities, using a questionnaire and the observations of the teacher-researcher.

The didactic unit presented was carried out with three different groups of adult learners at the Instituto Cervantes in Manchester. All three groups were students of so-called special upper level courses. These courses have no syllabus, as the syllabus is designed ad hoc for each group and course. A task-based approach is applied at the center with continuous assessment based on individual monitoring of the students' progress in completing the tasks.

The participants in the study were 23 students of whom 21 were British and their mother tongue was English, one student had German as her mother tongue and one student had Polish as a mother tongue. All students were over 46 years of age and a large majority (65.2%) were over 66 years of age. In terms of gender the representation was very even: 13 women and 10 men. The vast majority of the students (82.6%) had a high level of education: undergraduate and postgraduate degrees. All had studied other languages and half of them had reached B2 level or higher in another language.

The study materials consisted of a complete didactic unit that included two sequences with DSL activities, one of direct use and the other of indirect use of the Corpus of 21st Century Spanish or CORPES XXI. This corpus was selected mainly because of the easy navigation of the interface, which is key to introduce students to the use of this tool. Searches in this corpus are intuitive and the results appear on the same screen.

The activities were part of a complete didactic unit on climate and weather, which followed the indicators of the Instituto Cervantes Curriculum Plan (2006) (see Table 1). The target forms are two groups of near synonyms related to the theme of the unit: four nouns denoting precipitation (*shower, rain, cloudburst, and downpour*) and four adjectives qualifying temperature (*warm, heated, hot, burning, and fiery*). In selecting the DDL target forms of the teaching units, several criteria were followed: thematic, didactic (the content poses difficulties; it is motivating and meets a need), and linguistic (the semantic features of the units offer possibilities for analysis by means of a linguistic corpus).

A questionnaire was also designed (Appendix A) with 12 statements, 4-point Likert scale in which 1 expressed "strongly disagree" and 4 "strongly agree". This questionnaire was designed by the teacher-researcher, validated by four university professors and piloted in a pre-experimentation pilot study. The answers of the questionnaires were analyzed with the statistical program SPSS. At the same time, during

the implementation of the didactic unit, the teacher-researcher took note of the development of the unit and, especially, of the students' actions, reactions, and comments during the different DDL tasks.

Table 1
Talk about time

TALK ABOUT THE WEATHER

CEFR level
B2 - C1

Approximate duration of the whole didactic unit: 10 hours in 4 sessions of two and a half hours.
Approximate duration of DDL sessions: 60 minutes in session 2 and 80 minutes in session 3.

Objectives
- Deepen in the thematic contents: climate, weather, and environment.
- Develop the command of the communicative activities of the language: reading and listening comprehension, written and oral expression and interaction, as well as mediation.
- Train students in the use of linguistic corpora. Indirect use (Session 2) and direct use of CORPES XXI (Session 3).
- Deepen students' lexical knowledge. Specifically, aim to study the following lexical features: synonymy, connotation, and ideology, figurative literal meaning, combinatorial and register.
- Know the characteristics of a textual genre: weather reports.

PCIC General indicators

Specific notions
20.4. Climate and atmospheric weather
Functions
5. Socializing
2. Express opinions, attitudes, and knowledge
Socio-cultural knowledge and behavior
1.14. Ecology and environment
Learning procedures
1.2.2. Elaboration and integration of information
Inductive Reasoning
- Generalization and formulation (implicit or explicit) of rules from the observation of phenomena.
- Inference.

Specific linguistic contents
- Expressions to formulate hypotheses
- Lexical units to talk about climate, weather, and environment.

Contents of the activities with DDL
- Near synonyms of precipitation (*shower, rain, cloudburst, and downpour*) and their combinational.
- Near synonyms for expressing high temperature (*warm, heated, hot, burning, and fiery*) and their combinational.

Resources required
- Attached worksheets
- Computers with internet connection and projector to watch the videos.
- Cardboard

Didactic unit sessions
Session 1.
In this session the topic is introduced. The basic vocabulary of the topic is reviewed through hypotheses about the weather in different places. Finally, the use of time as a social resource to engage strangers in conversation is explored.

Session 2.
In this session, we discuss precipitation and introduce students to the use of linguistic corpora with materials and direct consultation with the teacher. Students are also introduced to the analysis of lexical units and their combinational as a means of discovering meaning and usage. At the end of the class, a discussion on time and character is proposed.

Session 3

In this unit new lexical units are introduced by means of contextualized texts. Students are then introduced to the direct use of linguistic corpora to work with three of these units. The activities of analysis of the units by their context and combinational are deepened. In addition, following the written and audio-visual models, students carry out the first group task of the unit: a weather forecast.

Session 4
In this unit, we work on the topic of climate change. Lexical combinations related to the topic are studied. After receiving input on the topic through texts (jigsaw reading) and a video, the second big group task is carried out: a debate on a sustainable consumer society.

The following two sections describe the activities in sessions 2 and 3 of the sequence. It has not been considered necessary to add more data on the activities of sessions 1 and 4 as the language corpora, which are the object of the study, were not used in these sessions.

DDL Activities in Session 2

The sequence with DDL begins when the teacher presents the students with two texts taken from CORPES XXI and asks them to decide which of the two proposed titles is theirs. Afterwards, they are asked if they know what a collocation is and are asked to look for weather-related collocations in the texts (*stormy afternoon*, *torrential rain*, *thunder and lightning*, *lightning*, *electric spark, blazing sun*, *sweltering heat*). The teacher picks up the collocation *torrential rain* and asks the students if they know other terms related to precipitation and asks them to brainstorm. After checking prior knowledge, they are told that they are going to work with four terms that denote precipitation (shower, rain, cloudburst, and downpour). They are told that they are going to analyze the data extracted from a linguistic corpus, specifically, some concordance lines about each of the terms.



Figure 1. Concordance lines of "shower."
Note: Source: Corpes XXI.

The teacher asks the students to analyze the concordance lines and take note of the adjectives and verbs that accompany the nouns. They are then to look at these collocations and answer the questions on the analysis chart on the worksheet (Appendix B).

DDL Activities in Session 3

First, the teacher asks the students to read some newspaper headlines in which the phrase "hot autumn" appears and asks them if they understand what it means. He then tells the students that, in Spanish, there are several adjectives to describe a high temperature. She shows them five texts (Appendix C) in which the adjectives are presented and asks them what information the texts provide about the adjectives and whether the meaning is clear.

Later, the teacher explains to the students that they are going to study in depth three of the adjectives (warm, burning, and heated), but this time they are going to consult directly a linguistic corpus: the CORPES XXI. First he shows them how to access the corpus and how to search for concordances. Later, he shows them how the results appear, how the number of cases appear, and the large number of screens that appear. He also encourages them to look for the nouns that appear next to the adjectives and to try to find some kind of pattern. Then ask them, in pairs, to complete the table with the number of cases and the nouns which they are combined. Finally, he asks them to try to answer the questions in the analysis table (Appendix B).

As a final activity in this sequence, students are asked to do a gap-filling exercise with the same partner (Appendix D) in which they have to complete some sentences with one of the three adjectives. Finally, there is a debriefing of the two tasks in which the teacher also answers all the questions posed.

As homework, students are asked to use CORPES XXI to look up the other two high temperature adjectives and analyze them in the same way they did in class. Then, they will apply all this new knowledge to do another gap-filling exercise but this time with the five adjectives studied (Appendix D).

Results

After the completion of the didactic unit, the questionnaire was administered to the students, which was completed by 22 students out of the initial 23. They were asked to rate their perception of the corpus activities. On the one hand, they were asked about the different tools used: contextualized texts (CT) in the printed materials and concordance lines (CL) for the two types of access to the corpus: indirect access through printed materials and direct access. The questions on indirect access differentiated between homework done in the classroom (HC) and activities done as homework (HH). At the same time, they were asked about the usefulness of the activities in relation to general comprehension and to different dimensions of the lexical unit: meaning, level of formality, and combinational.

Table 2
Descriptive statistics of perception

		1	2	3	4	Mean	DT
WORK WITH PRINTED MATERIALS							
CT	1 This activity has helped me to understand the meaning.		1	6	15	3.64	0.58
	2 This activity has helped me to understand the level of formality (recording).		1	10	11	3.45	0.59
	3 This activity is useful as a first approximation.		1	7	14	3.59	0.59
CL	4 This activity has helped me to understand the meaning.		1	6	15	3.64	0.58
	5 This activity has helped me to understand the level of formality (recording).			11	11	3.50	0.51
	6 This activity has helped me to understand the usual collocations of a lexical unit.			11	11	3.50	0.51
WORK WITH DIRECT ACCESS TO THE CORPUS							
CL	7 This activity has helped me to understand the meaning of the lexical unit.		2	10	10	3.36	0.65
	8 This activity has helped me to understand the level of formality (recording).		4	10	8	3.18	0.73
HC	9 This activity has helped me to understand the usual collocations of a lexical unit.		4	11	7	3.14	0.71
CL	10 This activity has helped me to understand the meaning of the lexical unit.		2	12	7	3.24	0.62
	11 This activity has helped me to understand the level of formality (register).		4	12	5	3.05	0.66
HH	12 This activity has helped me to understand the usual collocations of a lexical unit.		3	12	6	3.14	0.65
TOTAL AVERAGE						3.37	0.38

As can be seen in the table above, the students perceived the DDL activities favorably with a total average of 3.28 (out of 4). The perceptions are positive for both types of tools: matching lines and contextualized texts. The statements that receive the highest scores are those referring to the corpus as a tool that helps to understand the meaning, 3.64 in the activities with printed materials, 3.36 in the direct reference activities carried out in the classroom, and 3.24 in the direct access tasks at home. Statement 3 on the usefulness of the activities as a first approximation also gets a very positive perception (3.59). The question that receives the lowest score (3.05) is the one referring to the usefulness of the concordance lines in the comprehension of the register in the homework. Likewise, the questions about the usefulness of the corpus to understand collocations receive a lower score. Finally, a very remarkable fact is the higher score of the activities carried out with printed materials compared to the activities carried out by means of direct access to the corpus. And within the activities of direct consultation, the evaluation is lower in the activities carried out at home without the teacher's guide.

Next, we proceeded to analyze whether there were significant differences according to the variables gender, age, level of education, and proficiency in another language. First of all, we analyzed the mean of the answers on the activities in printed materials, the activities of direct consultation of the corpus, and the total mean. A better evaluation was predicted for younger students, with a higher level of studies and with a command of another language. However, as shown in the following table, the differences between the averages were minimal and only the expectation of age was confirmed with very small differences, although younger students clearly preferred printed materials, while among older students the difference between the types of access was much smaller. Interestingly, students with a lower level of education showed a more positive perception towards DDL activities. As for the gender variable, females showed a more positive perception towards printed materials while males favored direct access. However, the

differences were minimal in the four variables, so an inferential statistical analysis was not performed.

Table 3
Descriptive statistics of the perception by demographic variables

	Printed material		Shortcut Classroom		Shortcut House		Total	
	Mean	**DT**	**Mean**	**DT**	**Mean**	**DT**	**Mean**	**DT**
GENRE								
Woman	3.62	0.36	3.23	.64	3.10	.64	3.39	0.38
Man	3.44	0.38	3.22	.68	3.20	.50	3.33	0.39
AGE								
From 46 to 65	3.76	.26	3.09	.71	3.22	.75	3.46	.40
More than 66	3.45	.40	3.28	.62	3.11	.52	3.32	.37
LEVEL OF EDUCATION								
Secondary education	3.44	.34	3.66	.57	3.33	.57	3.47	.41
Undergraduate	3.61	.40	3.03	.67	3.00	.50	3.32	.31
Postgraduate	3.51	.42	3.29	.61	3.22	.68	3.38	.46
PROFICIENCY IN ANOTHER LANGUAGE (B2+)								
No	3.53	.39	3.18	.62	3.23	.41	3.37	.36
Yes	3.37	.40	3.27	.69	3.06	.71	3.37	.41

On the other hand, during the implementation of the didactic unit, the teacher-researcher took note of the development of the unit and, especially, of the students' actions, reactions, and comments during the different DDL tasks.

The students performed well in the first activity with printed materials. The collocations of the four terms helped them to perform the analysis activity and to understand the four terms. They had more trouble differentiating between *cloudburst* and *rain* but, thanks to the context, they identified the textual genre in which the former appeared (weather reports) and the figurative sense in which the latter often appeared. In the following production activities, they used the new units appropriately, except on one occasion when they used *cloudburst* figuratively, and it did not work in that context.

The activity of direct use of a corpus was a very new experience for almost all the students. Only two of them had used a corpus before. Among the rest of the students there were very different reactions. Most of them understood immediately how to do the searches. There were pairs with a very different technological level but together they were able to do the activity in an agile way and quickly made very interesting findings. Even after the activity they undertook independent searches on different units. However, there were students who read each of the concordance lines in full and were puzzled by the incompleteness of the sentences. These students read intensively looking for each of the new terms, thus slowing down the activity. In addition, this intensive reading prevented them from focusing on the most relevant aspects such as collocations and position in the sentence of the terms, and they had problems answering the analysis questions.

The homework assignment gave them the first opportunity to work independently with the corpora. After the training session, the students reported no problems in their autonomous search. They responded very well to the gap-filling exercise. They only hesitated between the use of *heated* and *hot* with "receiving"; however, they quickly proved that both adjectives were possible in one of the sentences with a difference in degree. There was also discussion between the uses of *heated* and *fiery* in the context of a confrontation. However, several students deduced how *fiery* applied more to the environment and *heated* more to people.

Discussion and conclusions

These results show, above all, a positive perception of all the DDL activities and their usefulness in understanding the meaning of the lexical units. In the different DDL activities on the corpus data, aspects such as frequency, figurative or literal meaning, referent and connotations were explored, which helped the students to deepen their semantic knowledge of the lexical unit. For example, a semantic feature such as intensity in precipitation helps to differentiate *shower* from *cloudburst*. Although to a lesser extent according to the results, the tasks served the students to understand the combinational of the target forms and their level of formality. Through this cognitive processing, the DDL activities promote deep knowledge of the lexical units and, with it, retention of the lexical units. The use of these units in the subsequent activities of the didactic unit confirms this retention. However, another more exhaustive study with a larger number of students would be needed to statistically evaluate this improvement in the knowledge and use of lexical units.

Also, the observation of students' actions and attitudes when performing the direct corpus consultation activities shows a high involvement of all students in the task and, in many cases, a high degree of autonomy in undertaking their own searches. Following the theories of text acquisition reviewed in the introduction, engagement can also lead to retention.

Moreover, in this case study, students were introduced to the direct use of a linguistic corpus, CORPES XXI. Specifically, students were trained to search for concordance by lemma and form, to take notes on frequency, and to analyze the concordance lines of some of the resulting displays. However, the scores indicate a more favorable perception towards the activities with printed materials than towards the activities in which they used the corpus directly. Moreover, students preferred the direct use in the classroom, guided by the teacher, to the use of the corpus outside the classroom (see Table 2). Although the difference is insignificant, these results confirm the teacher-researcher's observations about the difficulties experienced by some students in the activities of direct access to the corpus in class, indicating the need for further training in corpus use.

From the implementation of the unit, several conclusions can be drawn for lexical didactics in SFL: firstly, students improved their lexical-semantic knowledge and lexical competence in general by working with different aspects of the lexical unit (combinational, connotations, literal and figurative meaning, and textual genre). Secondly, the fact that DDL activities are integrated into a didactic unit means that the focus on form and meaning translates into a creative use of lexical units and, again, this use will have an impact on the retention of the lexical unit. Finally, it should be noted that DDL does not imply an abandonment of the cognitive/constructivist principles of task-based and communicative approaches. On the contrary, it reinforces and emphasizes the central role of the learner as an active agent of learning.

This study, focused on the perceptions of a group of students and the observations of the teacher-researcher, shows how a sequence of DDL activities integrated in a didactic unit helps to deepen the lexical knowledge of SFL. The multiple contexts offered by the concordance lines, the analytical activity when interpreting these lines, and the active involvement of the student are the pillars on which the implementation of DDL in the classroom is based.

We recognize that our case study is limited by the number of students and the object of study. In the future, more research in SFL on a larger scale and with a quantitative focus would be necessary in order to observe the effects on usage as well as student perceptions. In addition, the two DDL routes, teacher-mediated access and direct access, should be further explored. We hope that this proposal will help other SFL teachers to

bring this approach into the classroom and to create materials with DDL activities integrated into teaching units.

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Receipt date: 12/05/2020
Revision Date: 02/25/2021
Acceptance date: 07/10/2021

Appendices

Appendix A
Questionnaire on activities with corpus in the didactic unit

We would be grateful if you could answer this questionnaire.
We guarantee the confidentiality of the data and thank you for your invaluable cooperation.

First name_____ Last name(s) _____

1 Working with units in printed material.
The lexical units have been presented in the materials with several activities. Read each statement and put a cross next to the relevant number.
(4) strongly agree, (3) agree, (2) disagree, (1) strongly disagree.

a. The lexical unit has been presented within a short text.

1 This activity has helped me to understand meaning.	1 2 3 4
2 This activity has helped me to understand the level of formality (register).	1 2 3 4
3 This activity is useful as a first approximation.	1 2 3 4

b. The lexical unit has been presented in seven or more sentences.

4 This activity has helped me to understand meaning.	1 2 3 4
5 This activity has helped me to understand the level of formality (register).	1 2 3 4
6 This activity has helped me to understand the usual collocations of a lexical unit.	1 2 3 4

2 Work with direct access to the Corpus

a. A direct querying activity of multiple concordance lines from a corpus has been done in class.

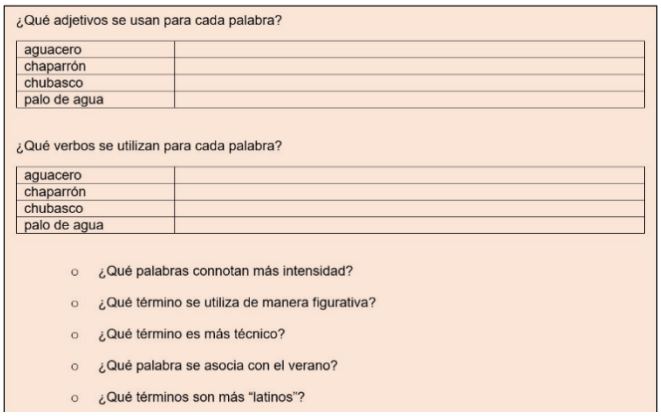
3 This activity has helped me to understand the meaning of the lexical unit.	1 2 3 4
4 This activity has helped me to understand the level of formality (register).	1 2 3 4
5 This activity has helped me to understand the usual collocations of a lexical unit.	1 2 3 4

b. A direct consultation activity of multiple concordance lines from a corpus has been done outside of class as homework.

6 This activity has helped me to understand the meaning of the lexical unit.	1 2 3 4
7 This activity has helped me to understand the level of formality (register).	1 2 3 4
8 This activity has helped me to understand the usual collocations of a lexical unit.	1 2 3 4

Thank you very much!

Appendix B
Analysis tables



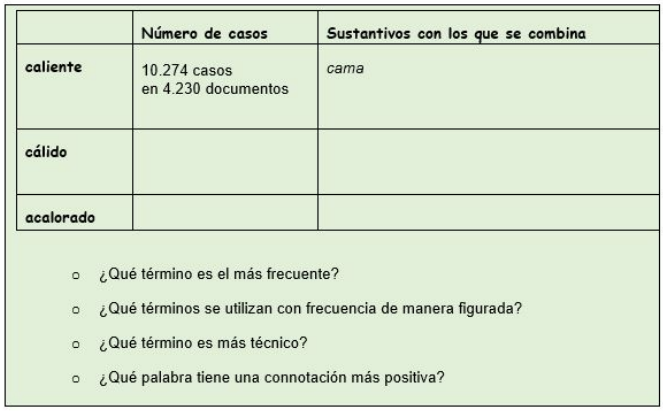
¿Qué adjetivos se usan para cada palabra?

aguacero	
chaparrón	
chubasco	
palo de agua	

¿Qué verbos se utilizan para cada palabra?

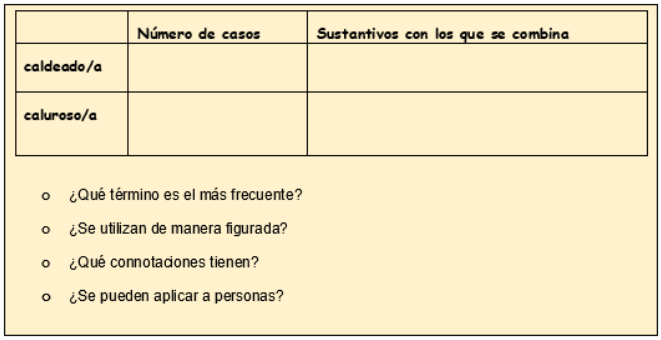
aguacero	
chaparrón	
chubasco	
palo de agua	

- ¿Qué palabras connotan más intensidad?
- ¿Qué término se utiliza de manera figurativa?
- ¿Qué término es más técnico?
- ¿Qué palabra se asocia con el verano?
- ¿Qué términos son más "latinos"?



	Número de casos	Sustantivos con los que se combina
caliente	10.274 casos en 4.230 documentos	*cama*
cálido		
acalorado		

- ¿Qué término es el más frecuente?
- ¿Qué términos se utilizan con frecuencia de manera figurada?
- ¿Qué término es más técnico?
- ¿Qué palabra tiene una connotación más positiva?



	Número de casos	Sustantivos con los que se combina
caldeado/a		
caluroso/a		

- ¿Qué término es el más frecuente?
- ¿Se utilizan de manera figurada?
- ¿Qué connotaciones tienen?
- ¿Se pueden aplicar a personas?

Appendix C
Contextualized texts

Me dijeron que en el monasterio ya tienen la habitación caldeada y oliendo a rosas, la cunita con paños hervidos y blancos, las toallas, Federico, las tetas de las vacas preparadas para ser ordeñadas. Todo listo para recibir a la niña a punto de nacer.

Afuera hay cuatro duchas con cortinas y tres WC con puerta. También hay una pequeña pileta con agua caliente y jabón donde pueden meter los pies. Alrededor de la pileta hay dos bancas de madera.



¿Ocho abdominales? Un gusano estaba en mejores condiciones que yo, y hasta tenía mejores perspectivas con las flexiones de brazos. Me sentía acalorado, agitado, me dolía y me picaba todo, regresé a la casa con el peor de los humores.

Pierre insistió en llevarme en el *cabriolet*, pero hacía tiempo que no andaba por las calles y rechacé su ofrecimiento. La tarde era hermosa y cálida y el crepúsculo me tomó paseando junto al río.

No, nunca, afirmó rotundo Tomás, mientras se protegía con una mano a modo de pantalla, del sol que le alumbraba los ojos. Ya no queda sombra, dijo a continuación. Con los cuerpos casi pegados contra los nichos, el sol brillaba en sus cabezas y les bañaba los hombros y la parte superior del torso. Va a ser un día muy caluroso, aseveró Alfredo (…).

Source: CORPES XXI

Appendix D
Gap filling activities

Activity 1 (done during class)
Complete the following sentences with one of the three adjectives studied.

warm heated fiery

a. The congressional president resigned from his post during a _____ session in which the majority of legislators were debating his replacement.

b. The _____ front will leave us mid-afternoon high or medium clouds. Temperatures will continue to rise.

c. After the game we were hungry and bought some delicious _____ dogs from a stall.

d. Feeling _____, he rolled up his sleeves and took off his shoes.

e. Since this morning there is a very unpleasant _____ wind.

f. The living room was very cozy: it was painted with _____ colors and furnished with a pine wood coffee table and chairs and a rustic style sideboard.

Activity 2 (done as homework)

With all that you have found out about these five adjectives, you are going to complete the following sentences. In some cases there may be more than one correct answer.

warm hot heated burning fiery

1. A vending machine for _____ drinks had been installed in the school.
2. The press conference yesterday became the scene of a _____ confrontation between the president and the journalist.
3. The musician was moved by the audience's_____ reception at his tribute concert.
4. Low-cost _____ water production systems are needed.
5. Some employees had been laid off and the atmosphere was very _____.
6. The Solymar Hotel welcomes you in a functional and _____ environment, both for your business meetings and congresses, or working days.
7. My teacher told me that if he noticed me _____, he could take off my jacket.
8. For the coolest summer and the _____ winter: Air conditioning products, Heating, Boilers, Fireplaces, Stoves.
9. An enviable natural setting accompanied by a mild climate, mild in winter, and not very _____ in summer.
10. The heating had been turned on, but the room was not yet _____.

(Activity taken and adapted from Chus Fernandez, University of Salford)

MLS - EDUCATIONAL RESEARCH

http://mlsjournals.com/Educational-Research-Journal

ISSN: 2603-5820

How to cite this article:

Mendoza Navas, B. V. & Martos Eliche, F. (2021). Use of technological tools in virtual environments to develop English oral production in the Foreign Languages Department of the National Autonomous University of Honduras. *MLS Educational Research, 5*(2), 105-119. doi: 10.29314/mlser.v5i2.679.

USE OF TECHNOLOGICAL TOOLS IN VIRTUAL ENVIRONMENTS TO DEVELOP ENGLISH ORAL PRODUCTION IN THE FOREIGN LANGUAGES DEPARTMENT OF THE NATIONAL AUTONOMOUS UNIVERSITY OF HONDURAS

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Abstract. The boom in the use of information and communication technologies (ICT) and the mandatory use of virtual environments due to COVID-19 spurred the interest to conduct this research framed in the field of foreign languages teaching, specifically in the development of oral production through the implementation of ICT in virtual environments. It was considered relevant to carry out research that investigates how digital tools and resources allow the development of English oral production in virtual teaching at the National Autonomous University of Honduras (UNAH), through a mixed-design non-experimental ex post facto field study, on a basis of an exploratory-descriptive level. The sample consisted of 39 self-selected participants in single cross-section. A mixed questionnaire of 47 items was administered. With the findings throughout this research, we were able to validate our alternate hypothesis: H1= The effective implementation of ICT tools favors the teaching and development of oral production in the UNAH A1 English students. It is concluded that despite the fact that most of English professors of the Foreign Languages Department at UNAH were not prepared for virtual teaching nor had experience working the oral production with their students in a virtual environment, these professors had a teaching generative resilience facing the emergency in the global crisis generated by the COVID-19 pandemic.

Keywords: Oral production, ICT, English A1, online classes, foreign languages didactics

EL USO DE HERRAMIENTAS TECNOLÓGICAS EN ENTORNOS VIRTUALES PARA EL DESARROLLO DE LA PRODUCCIÓN ORAL EN INGLÉS EN EL DEPARTAMENTO DE LENGUAS DE LA UNIVERSIDAD NACIONAL AUTÓNOMA DE HONDURAS

Resumen. El auge en el uso de las tecnologías de la información y la comunicación (TIC) y la obligatoriedad del uso de ambientes virtuales debido a la COVID-19 impulsaron el interés de conducir esta investigación en el campo de la enseñanza de lenguas extranjeras, específicamente en el desarrollo de la producción oral a través de la implementación de Tecnologías de la Información y de la Comunicación (TIC) en la enseñanza en ambientes virtuales. Se consideró relevante adelantar una investigación que indagara cómo se están empleando los recursos y herramientas digitales que permiten trabajar la producción oral en la enseñanza virtual del inglés de la Universidad Nacional Autónoma de Honduras (UNAH), mediante un diseño mixto no experimental ex post facto de campo de nivel exploratorio descriptivo sobre una muestra autoseleccionada de 39 participantes de corte transversal único a la que se le aplicó un cuestionario mixto autoadministrado de 47 ítems. Con los hallazgos encontrados a lo largo de esta investigación pudimos validar nuestra hipótesis alterna: H1 = la implementación eficaz de herramientas TIC favorecería la enseñanza y el desarrollo de la producción oral en el estudiante de inglés A1 de la UNAH. Se concluye que a pesar que los profesores de inglés del Departamento de Lenguas de la UNAH no estaban preparados para la enseñanza virtual ni contaban con experiencia para trabajar la producción de sus estudiantes en un ambiente virtual, estos profesores tuvieron una resiliencia generativa pedagógica ante la crisis que ha precisado la emergencia mundial generada por la pandemia del virus del COVID-19.

Palabras clave: Producción oral, TIC, Inglés A1, clases virtuales, didáctica de lenguas extranjeras.

Introduction

Humanity is experiencing the greatest health crisis of this era. The coronavirus pandemic (COVID-19) has become the protagonist of newspapers, newscasts, internet, and even everyday conversations. Undoubtedly, this virus has changed the way people relate to each other, cinemas, restaurants, museums, universities, and schools have had to remain closed due to the risk of contagion. Faced with this new reality, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) indicates that information and communication technologies (ICT) are playing a key role in the global fight against the new coronavirus.

Although not everyone has the same access to and knowledge of Information and Communication Technologies (ICT), the global trend is the rapid increase of new applications in the wake of the pandemic. This is one of the aspects to which, particularly, more attention is being paid within the educational field. The use of ICT has been increasing and is now redefining education.

With the emergence of ICT, the availability of information is abundant and the main challenge is in the selection, curriculum integration, and acquisition of skills for the use and management of information. Currently, society is immersed in scientific and technological advances, so that in the educational field the use of ICT has become widespread, which has optimized the teaching-learning process, according to Morffe (2010); the application of new methodologies and strategies such as constructivism and collaborationism, which consider as a mediating tool the use of ICT; specifically in the search and selection of information, critical analysis, and problem solving.

The incorporation of ICT in teaching allows the student to become an active participant and builder of their own learning and the teacher assumes the role of guide and facilitator, which varies the way of interacting with their students, the way of planning and designing the learning environment. For Pizarro-Chacón & Cordero Badilla (2013), these technological tools allow teachers to find innovative techniques to stimulate student motivation and improve their learning with the use of multimedia, hypertexts, image with audio and video, and other interactive systems, in addition to choosing those teaching resources that best suit the different areas of knowledge of students. (García-Cedeño, et al., 2020). According to Calderón et al. (2015), the choice of technological tools is not a whim or idiom but a pedagogical decision, which responds to our educational intentionality of teaching and learning highlighting its experimental nature, preparing the student to solve problems of everyday life but making provocative, motivating and challenging projects for students of different levels (Argandoña-Mendoza, et al., 2020). According to García-Martín & Cantón-Mayo (2019), the use that students make of technologies and the impact of several of technological tools on their academic performance allows these tools to facilitate direct and individualized communication, increases confidence, their self-esteem and the feeling of intimacy between them and others. The management of social networks allows students to improve their participation in chats and video calls, strengthening communication and interaction skills.

The application of ICT in foreign language teaching is progressive and there are a large number of classes in virtual environments; however, because there are few studies that analyze how teaching is being carried out in this medium, research on technological applications in the virtual field is necessary, especially if we take into account the growing number of universities that today have been forced to offer online classes due to the pandemic of COVID-19, as well as the constant offer of new technological tools. When working in virtual contexts, the emphasis is generally placed on written expression and oral production is the one that is weakened; since not all virtual platforms offer concrete tools for its development and the teacher does not always make use of the resources at his disposal. Similarly, in traditional face-to-face teaching, oral production has been one of the most neglected in language classes (Cassany, Luna & Sanz, 1994), that is, in the face of the teaching of grammatical and metalinguistic postulates in terms of reading and writing, teachers focus on being able to comply with the contents assigned for the teaching period, and they do not always have the time or space to be able to evaluate oral production individually; moreover, each academic period the number of students in the classes increases, and this has an impact on offering detailed feedback.

Because of the pandemic, the impact of technology has reached educational fields such as language teaching and learning, in such a way that it is being incorporated as a recurring theme in didactic and pedagogical practical reflections. Its inclusion in curricular plans and in classroom work makes it an object of interest for research and an obligatory topic in the most recent training courses, workshops, webinars, videoconferences, etc.

Orozco (2013), drawing on Ortiz (2011, p. 88):

> Information and communication technologies offer the possibility to communicate in real time with any part of the world and also the easy and immediate access to an incessant flow of information that increases every day. Knowledge of a foreign language offers the possibility to communicate using it. Real and functional contexts of communication are created.

The use of ICT in the foreign language classroom is a very motivating method as it stimulates learners because they are attracted to it, and it can be used in different ways. Like all teaching methods, the use of new technologies has advantages and disadvantages. Orozco (2013), in the opinion of Ortiz (2011, p. 43), the use of ICT in the classroom has many advantages:

- Interest, motivation. Students are highly motivated when using ICT resources and motivation is one of the driving forces of learning.
- Interaction. Students are permanently active when interacting with the computer.
- Development of initiative. The constant participation of the students helps the development of their initiative.
- Learning from mistakes. Immediate feedback allows students to know their mistakes when they occur.
- Greater communication between teachers and students. The communication channels provided by the Internet facilitate contact between students and teachers.
- Cooperative learning. The tools provided by ICT facilitate group work and the cultivation of social attitudes, the exchange of ideas, cooperation.
- High degree of interdisciplinarity. The educational tasks carried out with computers allow a high degree of interdisciplinarity with different types of treatment to a very wide and varied information.
- Digital and audiovisual literacy. These materials provide students with contact with ICT as a means of learning and as a tool for information processing.
- Development of information search and selection skills. It requires the implementation of techniques that help to locate the information needed and its evaluation.
- Improvement of expression and creativity skills. The tools provided by ICT (word processors, graphic editors...) facilitate the development of written, graphic, and audiovisual expression skills.
- Visualization of simulations. Computer programs make it possible to simulate physical, chemical, or social sequences and phenomena, 3D phenomena and to experiment with them.

The use of ICT in the foreign language classroom involves an effort on the part of the teachers because they have to be constantly updating and receiving training to be able to use these resources when teaching. Teaching methods are constantly changing and nowadays the use of new technologies is something inevitable in teaching.

Baca (2010, p. 15) asks: "Why should the teacher use ICT as a component of teaching and learning methodologies? To live, learn and work successfully in an increasingly complex, information-rich, and knowledge-based society; students and teachers must use digital technology effectively." We can find negative attitudes among teachers when using these resources, for example, because they have little mastery of ICT due to lack of training, they feel incapable, they are afraid, they are anxious, they lack self-confidence, they do not calculate the time to prepare the necessary material, etc.

Loaiza (2010, p. 26) points out:

> The concern of teachers often falls more on what we have to do than on what students should learn. The teacher's main function could be how teaching will promote relevant and meaningful learning that students can use inside and outside the classroom. The teacher should be concerned not only with what

students say and hear, but also with what they retain and its potential usefulness in everyday life.

Therefore, ICT is not a substitute for the teacher, it is only a matter of applying them as a source of information in the teaching-learning process. Therefore, the teacher has to motivate and encourage the use of ICT during the learning period. It should be emphasized that the teacher's work is very important in the use of ICT, he/she is the person who plays the role of helping students to achieve skills in the use and learning of new technologies. Therefore, it is imperative that all teachers are willing to offer these opportunities to their students.

To this effect, Baca (2010, p. 16) points out: "New technologies (ICT) require teachers to play new roles and also require new pedagogies and new approaches in teacher training."

The integration of ICT in the classroom will depend on the willingness of teachers to make classes not follow the traditional method. The teacher has to be aware that he/she is a fundamental and important figure in the student's life and has to be willing to help the student to learn. Hence the importance of teachers being able to use new technologies in the classroom with their students.

There are several reasons for using technology in language teaching: it is motivating, the interactivity offered by many language exercises can be highly beneficial, and the kind of feedback offered by good interactive materials is often perceived as useful by learners. Added to this is the fact that the Net generation or digital natives (Prensky, 2001) expect a language program to respond to their particular needs and modes of communication. On the other hand, the use of classroom technology makes learners more autonomous, so that one of the most valued benefits of the use of technology in learning is that it allows practice and study beyond the confines of the classroom and limited exposure to the target language.

The discussion on the benefits of technology, including the exploration of certain technological applications to the specific area of language teaching and learning, considers the role of technology to be very useful in distinguishing between language skills (reading, listening, writing, and speaking), facilitating both the compartmentalized practice of each of these skills and the integration of skills and the incorporation of authentic cultural contexts important for language learning.

In any case, it can be stated without fear of dissent that nowadays teachers' and students' access to technology is key in a language program. Current teaching, focused on student learning, values the effort of *learning by doing*, driven by the use of digital technologies inside and outside the classroom, as a vehicle for generating and transmitting knowledge or as a means of communication; and, in both cases, between teachers and students or between students and each other (virtual campus, electronic resource platforms, media, thematic forums, *blogs*, *wikis*, simulation platforms and interactive games, augmented reality games, social networks, etc.). Evaluating the methodological plasticity and the adaptation of teaching tools (digital and multi-format) to the specific educational environment, as well as the effectiveness of their use, must be complemented with the planning of the training activities to be developed, ensuring that they contribute to the necessary development of the basic and specific competences in which the student must be equipped for the professional exercise aligned with their studies. In this sense, Toribio-Briñas (2010) points out that the basic competences are acquired through diverse educational experiences that allow them to be put into action in simulated contexts, which are considered to be faithful to the real life condition, given their quasi-authenticity.

As a result of the COVID-19 pandemic, the use of ICT has acquired great importance in the development of different educational processes. The use of *e-learning* has emerged as a response to the demand of society, strongly marked by the impact of Information and Communication Technologies.

Some of the strategies that the Directorate of Educational Innovation (DIE) at the Universidad Nacional Autónoma de Honduras has adopted, regarding the use of ICT, is the collaboration in the guidance of other teaching colleagues who have a proactive and innovative attitude in the educational use of ICT. The DIE implements the methodology of peer education for which it requests the collaboration of innovative teachers from Faculties and Regional Centers with good practices in the use of ICT to advise and guide other teachers who wish to do so.

Method

Design

The research carried out is part of the research methods in language learning as a non-experimental *ex post facto* field study, of mixed exploratory-descriptive level, on a self-selected sample of 36 subjects in a single cross-section, to which a mixed self-administered questionnaire with items, both closed and semi-closed, was applied. In addition to the frequency of response to each item, presented in tabular and graphical form, mean difference, variance, correlational, and factorial analyses were also carried out, which will allow us to establish significant response patterns.

Participants

The study was carried out with teachers who teach general English classes in the language department of the Universidad Nacional Autónoma de Honduras (UNAH). I chose the general classes of the Department because it is the space where I work as a teacher and it is where I often hear the difficulties that exist in order to develop oral production. These classes are for students of the different careers offered by the UNAH. They are courses of 4 units with a duration of 50 minutes per hour of class, from Monday to Thursday. Each section has a number of 50 to 60 students.

Instrument

For this research work, the questionnaire was used as a research instrument. This questionnaire was published online via the *LimeSurvey* software (https://www.limesurvey.org/es/). The first approaches to the questions originated with representations of the teaching practices of colleagues and practitioners during chat sessions and at conferences. This led to informal interviews with language teachers, which helped with the creation of the options to be included in the questionnaire. For the validation of the questionnaire, six procedures were used: Questionnaire construction, expert validation, pilot test application, Cronbach's Alpha, questionnaire application, and result analysis. Five objectives were proposed for this questionnaire:

a. Collect data on teacher training and experience related to oral production work.

b. Collect data concerning teachers' knowledge of the effective use of digital tools to work on oral production.

c. Collect information about the teacher's perceptions on the implementation of ICT for the development and assessment of oral production in the language classroom.

d. Collect information about the tools used in the development of oral production in the present study.

e. Collect information on the degree of effectiveness of the use of the ICT tools chosen for the development of oral production.

The questions of the questionnaire were designed according to the research objectives and taking into account the population to be studied, the circumstances of the application, and the characteristics of the software used. Different types of questions were used: dichotomous questions that give only one option of two yes/no answers; closed polytomous or categorized questions in which the respondent selected different answers; numerical and open questions.

Data analysis

The following steps were carried out for the data collection and analysis process:

a. Elaboration and application of a questionnaire to collect previous information about the perceptions of the teachers about the use of ICT in virtual teaching, and the development of oral production in the classes of the Department of Foreign Languages of the UNAH.

b. After developing the first version of the questionnaire and after obtaining the responses for the pilot evaluation, an invitation was sent to the authorities, professors, and experts of the Language Department of the UNAH to take the questionnaire and provide feedback. The questionnaire was voluntary and anonymous in order to try to control possible limitations of the pilot study.

c. The online service, *LimeSurvey,* was used to create a first questionnaire, which was accessed through a link, as this company allows you to choose completely flexible templates to carry out the survey individually and choose the format you consider most appropriate.

d. Before conducting the pilot study, a specialist was consulted to review the format and corroborate the validity of the instrument in measuring the variables.

The data obtained after the application of the instrument were processed, organized, coded, and statistically tabulated. Being an exploratory-descriptive study, the responses to the questionnaire were processed through different analysis techniques. First of all, it was considered to describe each item separately, in order to know the frequency distribution of the answers given by the teachers; this was done through the elaboration of tables and graphs and allowed us to answer the research questions. The statistical calculations and data analysis were carried out using the *Statistical Package for Social Sciences* (*SPSS*) program for ease of use, in the latest version 26, for the time of analysis of this research.

Results

The results obtained on the demographic findings in the sample analyzed reveal that men have acquired their digital technology skills thanks to courses, workshops, and formal or informal tutorials, to a greater extent than women, who tend to do it mostly independently. Therefore, it can be concluded that the technological gap *by gender* is present in the English teachers of the foreign language department of the UNAH, and women manage to overcome it through independent training in the use of ICT and their applications in teaching; a phenomenon of "self-confidence" is maintained that could complement the way they will make use of these technologies in their classes, particularly in terms of taking risks associated with educational innovation.

Regarding the use of ICT in the teaching and assessment of oral skills, the teachers surveyed, regardless of the amount and type of technology platform (Virtual Campus (*Moodle), Google Classroom, Tteams, Meet, Schoology)* used to teach their online class during the II Academic Period (PAC) 2020, employed a high percentage of synchronous and asynchronous tools for teaching oral production. Contrary to what has been reported in the reviewed literature that foreign language teachers at the university level tend to use ICT for reading and writing and not for speaking (oral skills), the results of the present study clearly show that 12 teachers out of 39 respondents (30.77%) used ICT for reading and writing; and 10 teachers out of 39 respondents used ICT for reading comprehension, but at the same time 11 (28.21%) use ICT for teaching oral skills.

As a result of the confinement, these percentages have increased substantially, which could simply be a reflection of both the advance in the potential uses of ICT for teaching and the penetration of these technologies in the knowledge society; a phenomenon that is happening at an accelerated pace, as discussed in previous sections. Another finding was the use of social networks with didactic objectives: respondents reported that they not only made use of Moodle but also WhatsApp and Facebook. WhatsApp to share resources, have a closer communication with students, coordinate academic activities, clarify doubts, for direct and continuous synchronous communication with the class. Facebook for presentations of assignments, videos, give opinions, and written work. We found a high incidence in the study sample of teachers who currently teach oral production in their classes, with a high frequency of using tools that allow synchronous and asynchronous oral tasks and conversations, such as *Vocaroo*, *Audacity, YouTube, PowerPoint, Zoom, WhatsApp*.

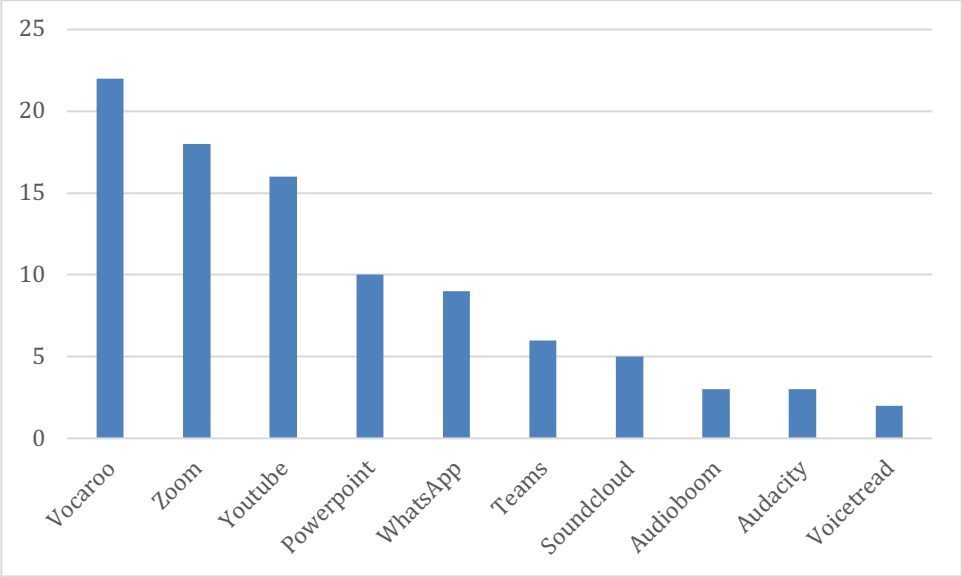


Figure 1. Graphical representation of the ICT tools implemented to develop oral production.

It is worth noting as a relevant result and as shown in graph 1, the teachers surveyed in this study tend to use a greater number of technological tools, they are inclined to use them to a greater extent for teaching activities of oral production both individually, in pairs, and in groups. Also, these teachers tend to design speaking activities with both synchronous and asynchronous tools.

According to the results obtained, the tools most used by teachers to carry out individual activities were, in first place, Vocaroo, for audio recording, followed by YouTube to record videos and PowerPoint presentations by means of image and audio, and Zoom as a synchronous tool. The ICT tools used by the teacher to develop oral production in pairs in his virtual classroom are: the first two places are occupied by Zoom and Vocaroo followed by YouTube. We found that Zoom and Vocaroo are still privileged tools to work on oral production in groups. With regard to the assignment of oral production tasks and continuous assessment, 39 responses were obtained. 35.90% assign exercises from the platform between once and twice a week; 10.26% once a lesson; 2% assign oral tasks more than once a week; and 5.13% never assign oral production tasks.

Analyzing the responses to question G04Q17 about perceptions of virtual classes, the results reflect that most agree that the management and evaluation of an online class is more difficult than that of a face-to-face class. In the detailed analysis of all the comments that were generated regarding the teachers' concern that students look for other people to do the assignments and evaluations, there were diverse opinions. Many feel that it is imperative to require more synchronous oral production to ensure the validity that it is the student who completes the activity, and not someone else. On the other hand, several expressed concern about the impracticality of administering tests in real time. There are several who say they have done it in the past, and have not continued due to lack of time, or because of the difficulty of accommodating everyone with itineraries that fit into a work schedule, connectivity problems, or other problems such as power outages that often happen in the country without prior notice. Other teachers express concern that they are not paying enough attention to this issue and say they plan to devote attention to it in the future.

Regarding the results of question G03Q09 on the degree of benefit of teaching the competencies in the virtual modality, the competencies with the highest score were grammar and vocabulary, 45.45% "quite a lot." Then, in the "moderately" category, 50.0%, comprehension and oral production. As for the linguistic competence in which the teacher feels most comfortable working in virtual environments (G03Q10), it turned out to be oral production (45.45%), with 40.91% in the case of written expression. Of the teachers who answered the question, G03Q04, about the possibility of developing oral production virtually, 83.86% believe that it can be developed; these are the same teachers who usually benefit from oral production in virtual environments.

It is important to mention that in the transversal analysis of responses there is another group of participants who find it difficult to teach oral production virtually (G03Q06). In the detailed analysis of all the comments that were generated in this regard, some consider that it is imperative to require oral production due to lack of experience, accessibility on the part of students, number of students per section, number of subjects per teacher.

Regarding the results of the question G04Q07, about whether the compulsory use of ICT in classes during the II Academic Period 2020 and the confinement favored them, many consider that it helped them, 95.95%. In the detailed analysis of all the comments that were generated regarding the achievements obtained due to the health crisis, it is observed that it allowed them to be trained more in the use of ICT and how to use them for oral production, to know aspects of ICT for teaching from which they can get a lot of benefit. It is important to mention that in the cross-sectional analysis of responses, a large part of the participants belonging to 59.09% were not prepared to teach in virtual mode at the time when the activities were suspended due to COVID-19. However, these teachers had already received courses and workshops, help from colleagues and others learned along the way.

From the results of the correlational analysis carried out in this study, it stands out that the teachers obtained significant achievements in the teaching of oral production during the confinement. The following results were also obtained: more student participation in the development of oral production; the use of individualized audio and video assessment, which allows students to practice more, to know tools, such as Vocaroo, Zoom, Souncloud, Teams, and YouTube, that they did not handle before; motivation and confidence to practice in synchronous sessions with students; satisfaction of listening to students through audio and video recordings. Students were introduced to new ways of practice and a more personalized class, students feel more cared for, more opportunity to give feedback to each student, more work on oral production individually, in pairs and groups. These teachers also reveal that they achieved their goals in teaching oral production with very good results.

From the results of the correlational analysis carried out in this study, it stands out that teachers who have a more favorable attitude towards ICT are also those who have achieved proficiency in ICT use, and in fact use ICT more frequently and intensively for a wide range of online teaching activities, including the teaching of oral production, as well as for the assessment of this skill, both asynchronously and synchronously. These teachers also reveal greater motivation in relation to the topic of ICT and the use of ICT in their teaching, as indicated by their greater interest in answering the questionnaire in this study.

Discussion and conclusions

With the findings found throughout this research, we can validate our alternate hypothesis; H1=The *effective implementation of ICT tools would favor the teaching and development of oral production in the English A1 student of the UNAH.*

Despite the fact that the English teachers in the language department were not prepared for virtual teaching or experienced in working with their students' oral production in a virtual environment, these teachers had a *generative*[1] *resilience* in the face of the crisis that the global emergency generated by the pandemic of the COVID-19 virus has specified.

The teacher of the language department of the UNAH, through a resilient performance, managed to look for ICT tools that favored him to work on oral production (OP) in his English class. 63.64% of the individuals reported having used once or twice a week tools that allow synchronous oral communication in their virtual class, they reported that students practiced OP more than in a traditional classroom; they made use of ICT tools that allow working asynchronous oral production such as Vocaroo, Audioboom, Anchor, Voicethread; PowerPoint presentation including audio, video via YouTube; they managed to work with synchronous ICT tools in which Zoom, WhatsApp, Teams, Meet stand out. On the other hand, most of these teachers worked and evaluated this competence individually, in pairs and in groups.

Generative resilience allowed experiencing adversity as an opportunity for growth and development for both students and teachers. These subjects have seen the changes as opportunities to improve their practice with all the challenges this brings to their personal, family, and professional lives (Sierra et al., 2019).

"The resilient response capacity of university teachers[2] is influenced by the management of their sense of efficacy, their personal and professional identity, as well as by the management of the various aspects, variables, and scenarios in which they are involved" (p. 4); pedagogical actors have understood that it is not only the student who learns, but that the act of "learning" is continuous and permanent, especially for those who "teach." It is just the attitude to "learn," "unlearn," and "relearn" in the knowledge society, which makes the teacher a resilient being by nature. (Sierra, Sevilla & Martín, 2019, p. 4).

Didactic implications

The main purpose of this study was to carry out an exploratory analysis to provide the academic community with results that show the resources and tools used by the teachers of the foreign language department of the UNAH in the development and evaluation of oral production in the English A1 class in virtual teaching.

In order to update the methodology of language teaching and adapt it to the characteristics of the *net generation* and today's society, it is necessary not only to integrate ICT in teaching and learning but also to encourage changes in teachers' didactic strategies and in the way of teaching. Much emphasis is placed on new technologies, as

[1] According to Román et al. (2020) "generative resilience" is linked to the virtue of generating options, metamorphosis, and continuing to live. Generative resilience allows experiencing adversity as an opportunity for growth and development. (p. 77-78)

[2] So that pedagogical resilience is established in the transit of the educational process in which many difficult situations happen, from which the teaching staff feels committed to come out successful, so it seeks in the refraction to develop empathy, self-knowledge of having a durable and sustainable life project (Segovia, Fuster & Ocaña, 2020, p.6).

well as new applications, but teachers are not always provided with support programs for their implementation. The preparation, updating, and motivation of teachers is encouraged, especially at university level, but the commitment of institutions is also needed to promote the appropriate use of ICT and the provision of courses that meet CEFR standards.

Numerous studies have been conducted to compare the virtual, face-to-face, and hybrid teaching models, but those that specifically assess oral proficiency in foreign language acquisition in a virtual environment are very few (LeLoup & Ponterio, 2007; Volle, 2005). It should be noted that this will be the first study at UNAH on the development of oral production in a virtual environment.

In a study by Langone, Wissick, and Ross (1998), which found that most teachers learned to use ICT outside of training courses. The results obtained in the present study concur in showing that teachers' digital competence responds mainly to individual initiative, as it has been mainly the result of self-directed learning, hours of personal research, practice and error, help from colleagues.

What does stand out in a large number of responses is the separation between the university and the teaching staff in the preparation, training, and support to stimulate didactic innovation. In other words, teachers find it necessary to acquire digital competence on their own initiative.

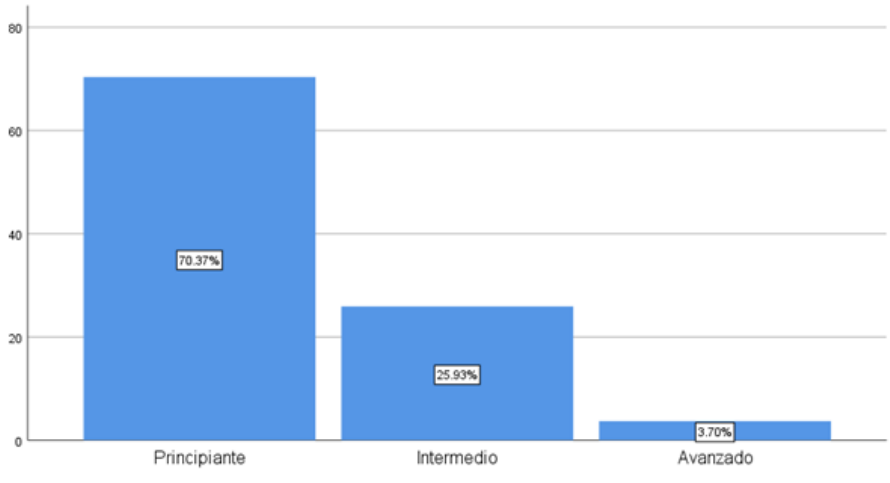


Figure 2. Graphical representation of the level of experience in teaching oral production in virtual environments.

With respect to oral skills, the teachers reported not having had any training in developing this competence in a virtualized environment, that is 72.73% of the respondents. In the comments of the participants, this represented a challenge since for most of them it was the first time they had taught a virtual class; on the other hand, the

level of management was that of a beginner, as reflected in graph 1, so they need more training in ICT in general.

The university needs to be involved in processes of quality improvement and professional innovation for e-learning. It is important to have institutional support. In the results it was seen that the highest percentage of teachers' instruction in ICT is independent study but by not having a common competency framework or a model to follow, there is no way to know if the educator has been adequately trained to conduct classes virtually specifically in the area of languages. In order to respond to current needs and challenges, educational institutions must review their regulations and promote innovative experiences in teaching-learning processes supported by ICT and the specific needs of each department.

Teachers need to accept the new practices as well as the concepts associated with e-learning. It is also important to educate students so that they have a clear notion of what online learning implies. The most important points to be highlighted as a recommendation of this study is that starting from the fact that there is no regulation in what is done, that is, although it is said that the *CEFR* standards are available, everyone does what seems best to them, and due to the speed in the increase in the supply of virtual classes, it is imperative to advocate for a uniform criterion of minimum standards to ensure learning and be willing to accept the inevitable changes that are generated with virtual learning. In addition, ICT must be incorporated in a responsible manner. It is no longer a question of whether or not it will be possible for ICT to be part of language teaching but how effectively it can be included.

With this research work, we humbly hope to open some possibility for foreign language didactics to become the door that allows the entry of technological resources and tools that make teaching practice and language learning and interaction more effective. It is important to consider the use of this or that technological tool from the perspective of an approach or method whose use responds to the proposed objectives and designed activities. It is not a question of accommodating the curriculum to technology but rather of seeking within the variety of resources those that facilitate instruction, favor learning, and motivate students for practice, creativity, and collaboration. Most of the tools found in this work have been used with a pedagogical intent by teachers and can be adopted and adapted to serve the purposes of foreign language education and teaching.

In the same way that student learning is constantly evaluated, the effectiveness of the resources used needs to be subjected to a serious evaluation process. Technology in itself does not guarantee learning, but rather the appropriate use of technology adjusted to the particular circumstances of those who use it. Excessive enthusiasm or an apathetic or reluctant attitude towards technology can at some point undermine the potential and risks involved. Only technological education of teachers and students can minimize the risks and maximize the potential.

It is clear from this study that the added value offered by ICT to language learning lies in the possibility of increasing practice, enriching communicative interactions, favoring the autonomous organization of work, and improving attitudes due to their motivational potential, which undoubtedly leads to an improvement in the student's oral production.

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Reception date: 06/30/2021
Revision date: 07/27/2021
Acceptance date: 08/06/2021

MLS - EDUCATIONAL RESEARCH

http://mlsjournals.com/Educational-Research-Journal

ISSN: 2603-5820



How to cite this article:

Oriak Ortega, S. B. & Tamayo Ancona, M. E. (2021). Trust as empowerment of human development in the Federal Mexican Police (Mexican National Guard). *MLS Educational Research, 5*(2), 120-134. doi: 10.29314/mlser.v5i2.619.

TRUST AS THE EMPOWERMENT OF HUMAN DEVELOPMENT IN THE FEDERAL MEXICAN POLICE (MEXICAN NATIONAL GUARD)

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Abstract. The Mexican National Guard is the institution in charge of providing security to the population, however, for this to happen, and to carry out its mission properly, its members must develop certain personal and professional capabilities to achieve the performance society expects from them. The objective of this research is to determine trust as an empowerment of human development of the Mexican National Guard, knowing needs, personal and professional concerns of its members in order to enhance their performance and the institutional professionalization and reflect it before society for a more ethical and reliable performance to have a safe country. For this, it is necessary to have federal police educational centers which allow their members to develop personally and professionally within the institution. The methodology used in this research is mixed, performing both qualitative and quantitative analyses, which will serve to enrich the research. The study was carried out with personnel from various areas of the Institution, obtaining the sample through probabilistic (stratified random sampling) and non-probabilistic (empirical, casual and snowball) techniques. Surveys and casual conversations were conducted with the elements, their colleagues and managers. For results analysis, the specialized software MaxQDA and Excel were used. Demonstrating the needs that the personnel conforming this Institution have with respect to an integral human development, to create the necessary confidence within it, and develop a comprehensive curriculum, for all the personnel who work in it, homogenizing learning and respecting profiles position and functions.

Keywords: Human development, trust, National Guard, security, education.

LA CONFIANZA COMO EMPODERAMIENTO DEL DESARROLLO HUMANO EN LA POLICÍA FEDERAL DE MÉXICO (GUARDIA NACIONAL MÉXICO)

Resumen. La Guardia Nacional México es la institución encargada de brindar seguridad a la población, sin embargo, para que esto ocurra, y se lleve idóneamente su misión, sus integrantes deben desarrollar ciertas capacidades personales y profesionales para lograr el desempeño esperado por la sociedad. El objetivo de la presente investigación es determinar la confianza como empoderamiento del desarrollo humano de la Guardia Nacional México, conociendo las necesidades e inquietudes personales y profesionales que tienen sus integrantes con la finalidad de enaltecer su desempeño y profesionalización institucional y reflejarlo ante la sociedad para un desempeño más ético y fiable y contar con un país seguro. Para esto se requiere contar con centros educativos policiales a nivel federal que les permita a sus integrantes desarrollarse personal y profesionalmente dentro de la institución. La metodología empleada es mixta, realizando análisis tanto cualitativo como cuantitativo, que servirán para enriquecerla. El estudio se realizó con personal de diversas áreas de la Institución, obteniendo la muestra por medio de las técnicas Probabilístico (muestreo aleatorio estratificado) y no probabilísticas (la empírica, casual y bola de nieve). Se realizaron encuestas y pláticas casuales con los elementos, sus compañeros y mandos. Para el análisis de resultados se utilizó el software especializado MaxQDA y Excel. Demostrando las necesidades que el personal que integran la Institución tiene respecto a un Desarrollo Humano integral, para crear la confianza necesaria dentro de la misma, y desarrollar un curriculum integral, para todo el personal que labora en ella, homogenizando el aprendizaje, respetando perfiles de puesto y funciones.

Palabras clave: Desarrollo humano, confianza, Guardia Nacional, seguridad, educación

Introduction

The Mexican National Guard is the civilian security institution, created by presidential decree in 2019, in charge of providing security to the population. For this to happen, it is necessary that its members develop certain personal and professional skills to achieve the performance expected by society.

Trust as empowerment of the human development of the Mexican National Guard is a complicated subject to deal with, due to the way in which the institution has been governed for years, it is interesting and very complex at the same time, which is why it becomes more captivating.

Since 2012, the former Federal Police began to address issues related to Substantive Equality, Gender Equality, and Human Rights of men and women; however, for a long time we heard complaints and claims of security elements belonging to the institution about the abuse of authority of the commanders, and although several elements report in writing about the abuse and little respect for their human and labor rights, there had been no follow-up to such demands. For this reason, we present some problems that this institution has had through labor climate surveys designed by the institution; trust, human development, and decent work areas are required for the elements of the institution to achieve full development; decent salaries are necessary. It is true that the higher the rank and position, the greater the responsibility and the better the salary; therefore, it is important to adequately standardize academic degrees, police, responsibility, and interpersonal trust.

It is well known by police forces worldwide that their members must be trained on issues related to national security, human rights, culture of legality, gender perspective, adversarial criminal justice system, and human development, as well as knowledge of police action; however, it is also of utmost importance that police institutions train their staff to trust their own institution and commands, and from that confidence it can be reflected in a better working environment both internally and externally. This will make citizens trust their national security institutions more. It is important to emphasize that this training should be provided from the moment new elements enter the basic courses.

Training in human development, trust, and work environment is considered of high social interest, and since the National Guard is the new civilian institution in charge

of the country's security, it is important for society to know that it has well-trained and prepared police officers to achieve the trust required for the institution to grow nationally and internationally.

In order for Mexico to be among the safest countries in the world, it must implement an educational program in accordance with the country's needs; training experts in security issues with experienced personnel in Mexico and abroad.

The objective of the research is to determine trust as a basis for the empowerment of human development of the Mexican National Guard, knowing the needs and personal and professional concerns that its members have in order to enhance their performance and institutional professionalization and project it to society for an ethical and reliable performance.

The main problem is to reach the confidence of the personnel (and in the personnel) that is required to have a safe country, delving into what would be the personal and professional needs and concerns, recognizing factors that lead to distrust and little personal development, discovering the areas and time that this problem has, and deduce the way to minimize or eradicate it.

To solve it, it is considered necessary to answer the following questions:

1. What are the main needs or concerns that external staff have that will enable them to improve physically and psychologically on an individual and professional level?
2. How could the staff of the institution acquire the trust that is required between commanders and peers in order to empower themselves?
3. Is it possible to diminish or eradicate the problem?

The following hypotheses are intended to provide answers to the aforementioned questions:

H.1. Educational, family, and leisure time concerns could generate mistrust in the members of the National Guard due to pressures within the work environment.

H. 2. Senior commanders and subordinate N.G. personnel work towards the same institutional goal, acquiring trust between them by maintaining mutual respect between hierarchies.

H. 3. Although there is a bachelor's and master's degree process within the institution, the workload and the demands of senior management generate a reluctance to study among personnel in operational areas.

In order to do this, some points must be delimited.

Confidence is the firm assurance or hope that someone has of another individual or of something. It is also the presumption of oneself or the spirit or vigor to act. (Pérez and Merino, 2009).

According to Laurence Cornú (1999, p. 19), "*trust is a hypothesis about the future conduct of the other. It is an attitude that concerns the future, insofar as this future depends on the action of another. It is a kind of wager that consists of not worrying about the non-control of the other and of time."*

Francisco José León (2014) mentions that trust in institutions, and especially in the police, is the result of:

1. The evaluation of their performance,
2. Interactions with actors and assessment of their intentions, and
3. The moral alignment of the institution with the citizenry.

It is known that, for a country to reach its development, much depends on the ability of institutions to gain the trust of its citizens, specifically those dedicated to security, such as the National Guard, developing direct effects on the effectiveness of the institution on its ability to protect the common good, creating the need for citizens to

collaborate in reporting crimes by providing valuable information for the resolution of these.

According to Morris, quoted by del Castillo (2014), corruption is "the illegitimate use of public power for private benefit" or "any illegal or unethical use of government activity as a consequence of considerations of personal or political benefit," which generates distrust of institutions among the population, as it did with respect to the now defunct Federal Police. Gaining trust and maintaining it in the eyes of society is very important for a good institution-citizen relationship.

Organizational Culture

Culture through time has been considered a mixture of distinctive spiritual and affective traits, which characterize a society in a given period.

Corporate culture creates and is created by the quality of the internal environment; conditioning the degree of cooperation, dedication, and firmness of purpose institutionalization within an organization.

Among its features are:

- Leadership
- Aspirations
- Value systems

When a person goes to a job, he/she brings with him/her a series of ideas about him/herself: who he/she is, what he/she deserves, what he/she is capable of doing, where the company should go, etc. Elements that together are known as 'Work Climate.'

A stable Organizational Climate is a long-term investment. The managers of the organizations must realize that the work environment is part of the asset and, as such, they must value it and pay due attention to it. An organization with a too rigid discipline will only obtain short term achievements; it can be a link or obstacle for the good performance of the company or be a factor of distinction and influence in the behavior of those who are part of it. Reflecting this situation in important points such as autonomy, structure, rewards, consideration, cordiality, support, and openness.

Trust allows the members of the organization to maintain good relationships, having good communication, allowing them to transmit what they think and feel to their superiors in order to help and optimize the performance of the organization. Creating an environment of trust helps to avoid resistance to change and to increase motivation, involvement, collaboration, and loyalty.

The former Federal Police designed a Police Development Model that was intended to cover the period from 2017 to 2027, where a systemic and transformative perspective is proposed, whose profile contemplates a police leader within the institution and in the community where he/she operates, capable of applying proactive and innovative solutions and strategies with a full sense of integrity and humanity.

Given these conditions and in light of the concept of citizen security, six needs have been identified that should be covered by the police development model:

- Maximize the potential of the police;
- Optimal use of your talents;
- Build esprit de corps;
- Introduce a culture of harmony and fraternity, both inside and outside the institution;
- Improve quality of life conditions;
- Generate trust with citizens.

The Model is oriented to build five characteristics needed in the new police profile: leadership, innovation, integrity, transformation, and humanity.

It is made up of seven components, which are part of the international trend on the future of police institutions: *Leadership, Intelligence, Multidimensional understanding, Strategic alliances, Proximity and social linkage, Science and technology, Professionalization and specialization.* For this, it is necessary to train everyone equally, commanders and subordinates, to educate in an environment of equity where everyone has the same opportunities.

Human Development is a paradigm that encompasses creating an environment in which people can achieve their full potential and lead productive and creative lives in accordance with their needs and interests. This involves expanding opportunities for each person to live a life they value. The key is to develop human capabilities: the diversity of things that people can do or be in life. The most essential capabilities for human development are to enjoy a long and healthy life, to be educated, to have access to the resources needed to achieve a decent standard of living, and to be able to participate in the life of the community. (United Nations Development Program (UNDP), 2009).

There are three essential elements for measuring human development:

- Longevity: or life expectancy at birth, which lies in the common belief that a prolonged life is valuable in itself and in the fact that several indirect benefits are closely related to a longer life expectancy.
- Knowledge: reflected in access to good quality education.
- Resources needed to live a decent life (real GDP per capita)

Human development must be present in different areas of the social process, and sustaining important pillars for its adequate direction: Equity, Productivity, Participation, and Sustainability.

In UNDP's (2009) view, capacity development is the process by which individuals, organizations, and societies obtain, strengthen, and sustain the skills needed to set and achieve their own development goals over time. An essential ingredient of UNDP's approach to capacity development is transformation, which must be generated and sustained from within over time. Such transformation goes beyond the accomplishment of tasks and is more about changing mindsets and attitudes. These are due to a process of positive growth and change that is constantly evolving.

Step 1. Involve the actors: facilitate dialogue

Step 2. Conduct a capacity assessment

Step 3. Formulating a capacity development response

Step 4. Implementing a capacity development response

Step 5. Assess capacity development

Confidence and Human Development are linked to each other, allowing the human being to be accepted and recognized in each of the areas that make it up, creating and strengthening confidence in the human being to demonstrate it to others, which enables people to a high job and personal performance. It is important to teach and learn that there are controllable situations and others not, since we live in a changing society, where each individual develops differently, where the inter and intrapersonal understanding allows us to cope with the situations that arise, and to obtain a general welfare.

The police officer is a professional, who exercises skills and abilities to satisfy the needs of the group to which he belongs; he has a special mission to fulfill: to give his life if necessary in favor of social peace and justice. As a public servant, he is obliged, even more than any other citizen, to know the laws and regulations that govern his actions,

since their non-observance has aggravated consequences. As a National Police officer, his responsibility is greater.

The main function of the Mexican National Guard is to guarantee the integrity and rights of people, prevent crimes, preserve freedom, public order, and peace in areas considered to be under federal jurisdiction. The National Guardsmen are professionals in public security, they have the knowledge to the implicit subject for the people and the social and economic development of the country.

Osse (2006, p. 31), mentions that the International Covenant on Economic, Social, and Cultural Rights and the International Covenant on Civil and Political Rights, describe that police officers should enjoy the same rights as everyone else, including time off, fair pay, fair working hours, safe working conditions, and equal opportunity for promotion; the only exception is in Article 22.2 of the International Covenant on Civil and Political Rights, which states that States may restrict the right to freedom of association of persons working in the armed forces or the police, including the right to form and join trade unions.

- Rights when in service:
  - Right to life
- Rights in the workplace:
  - Right to privacy
  - Right to freedom of expression and association
  - Right to be free from discrimination
- Rights to adequate working conditions
- Rights in disciplinary or criminal proceedings

Some of the human rights of members of the police that are particularly relevant to the functions they perform can be identified as follows: no arbitrary detention, defense, presumption of innocence, no incommunicado detention, hearing and legal procedures, sanctions, no duplicity of sanctions, no collective sanctions, prohibition of torture, petition, information, protection of their life and physical integrity, non-discrimination, respect for their personal dignity, training, a decent salary, work equipment, social security, stability in their police careers.

Labor needs in Mexico and the world have evolved, so, according to Gines (2004), it is necessary to modify the training model of Higher Level Institutions in order to respond to the needs of today's world, which is characterized by well-defined professions, which require that their competencies are always specific and related to a specific aspect of the world of work; stable professions whose demands for professional competence hardly change throughout professional life.

Today's world is one where educational and professional needs are based on obtaining work competencies, where traditional pedagogical models no longer work; we must create a continuous learning environment around students that encourages them to continue learning throughout their lives and allows them to remain receptive to the conceptual, scientific, and technological changes that appear during their work activity.

The needs of the new context of education demand that, in addition to theoretical knowledge, individuals should be trained in a broad set of competencies including the activities and attitudes that are required by the job: "A person has occupational competence if he/she possesses the knowledge, skills, and aptitudes needed to perform in an occupation, if he/she is able to solve tasks independently and flexibly, and if he/she has the willingness and ability to develop his/her sphere of work within the organizational structure in which he/she is immersed" (Gines, 2004.).

In countries such as Germany, Argentina, Colombia, France, and the United States, petitions to protect the human rights of police officers are beginning to be proposed, but it has been difficult to implement them within police institutions.

In order for the human rights of police officers to be truly applied and for them to obtain adequate individual and professional development, inter-institutional changes are needed in the way training and professionalization are dealt with within police institutions and academies, so as to meet the objectives of serving and protecting the citizenry.

For a long time there has been an attempt to professionalize the Mexican Police, this is due to the country's need to fully safeguard the safety of citizens, taking as a model other international police forces such as the French, Colombian, or American. The Mexican government feels the need to train its police in such a way that they can 'compete' with those considered the best, without forgetting their main objective which is the safety of Mexicans.

Marenin, cited by Alcocer (2016), proposes three objectives that are based on the fundamental responsibility of protecting human rights and maintaining democratic order: 1. accountability, 2. professionalization, and 3. legitimization; this, supported among other things, on personal integrity through proper recruitment, training, promotion, and sanction procedure; diversity of social identity; cultural interests, non-dominant values in society, etc.

A professional police force is one that citizens trust, not just because they protect, but because of how they protect. A trained police officer develops specific methods for performing a task and responding to a given situation. An inadequately trained police officer may feel insecure in carrying out his or her daily activities.

Among the elements that could provide security to the police, and allow them to perform their work effectively and efficiently and also provide the acquisition of confidence and the possibility of having an adequate personal and professional development. Rebuffo (2007) comments that having the right tools, such as equipment and training; promoting social support, which fosters respect and motivation; providing legal certainty (legal support); generating procedures and safe tactics for street work; having specific, clear and accessible operational manuals; promoting disciplinary certainty: certain and coherent consequences to their actions; provide greater political support as a state policy; create a control and feedback system that systematizes the police officer's experiences; guarantee respect and support for internal criticism; and provide better salaries and social security.

As can be seen, it is very important that Mexico, as well as the rest of the world, develop adequate programs in its security institutions in which its members can be trained in topics such as Human Development and Confidence to achieve personal empowerment, and together, the best results are obtained in the security of a country.

Method

The methodology used in the research is mixed, based on the Multiple Integration Design (MID) as a general design and the Triangulation Design as a specific design, since the main feature of both is to perform qualitative and quantitative analysis, which, when carried out simultaneously, an enrichment is obtained in the research, according to authors such as Johnson, Onwuegbuzie, Greene, Hernández Sampieri, Mendoza, Teddlie, and Tashakkori (Hernández, 2014.), allows words, as well as other narrative elements to be used to add meaning to the numbers, these add precision to the words and other narrative elements. Theories are generated and validated between analysis approaches. Results are generalized, in addition to producing more complete, holistic and integral knowledge;

empowering a better approach to reality within the institution, to subsequently design an appropriate curriculum for the broad formation and training of the members of the same, and that allows them to develop their work in the area in which they are, developing individually and professionally.

The study was conducted with personnel belonging to the Mexican National Guard. Two techniques were used to obtain the sample:

Probabilistic: Stratified random sampling was used, using the following formula:

$$n = \frac{z^2 * N * p * q}{e^2[N-1] + [z^2 * p * q]}$$

Z= typical score associated with the adopted confidence level.
p= value 50% (0,5)
q= value 50% (0,5)
N= Size of the known universe
e= Standard variation or maximum accepted estimation error.
n= sample size

Due to the characteristics of the study, the voluntary nature of participation and the type of total population to which the study is directed, to ensure a confidence level of 95% and a maximum margin of error of 7.9% (8.0%), considering a total of approximately 1,895 elements working in the administrative areas of 5 strata or particular universes, the number of the sample was 140 participants.

- Gendarmerie: 78 members.
- Federal Forces: 30 members.
- Regional Security: 26 members.
- Anti-drug: 1 member.
- Other areas: 5 members.

The non-probabilistic techniques used are empirical, casual, and snowball.

The research participants were men and women belonging to different areas of the extinct Federal Police, proposed by their commanders since the permissions to carry out these surveys were given by direct talks with them a few days before. However, it was mentioned to the participants that their participation would be voluntary and anonymous. Likewise, the participants proposed more candidates to participate in the research.

The variables:

Dependent Variable: human development of the members.
Independent Variable: institutional professionalization within the various areas of work.
Mediating variables: personal, family, work, and professional needs.
Relationship between V. D. and V. I.: the interaction that staff have within their work areas affects the personal and professional development of the institution's personnel.
Influence of the Mediating Variables: the personal, family, work, and professional needs that the staff may have and are not adequately satisfied cause deficiencies in personal and professional development.

The data was obtained through the answers provided by the respondents and seeks to reflect the conceptions they have of their daily activities, as well as the attitudes they have when relating to other people, both in the reactions that entail the consequences of their actions.

The instruments were designed *ad hoc* to be applied directly in the field and were mainly answered in person by the participants. These were:

- Participant observation
- DELPHI Technique
- In-depth interview
- Discussion Group

- Life History
- Test

The data collection was carried out in 3 days since the permissions were granted by the commanders. While the way of applying the tests also varied and had the following incidences.

The tests were more extensive, more open-ended questions were included than planned due to the incorporation of the in-depth interview and the Life history; still, the collaboration of the respondents was extensive, rewarding, and satisfying.

It consisted of 74 closed-ended questions and 25 open-ended questions for a total of 99; the maximum time to answer it was approximately 20 minutes.

Each test consists of three parts:

First, general data: sex, age, marital status, schooling, children, courses related to their professional studies, work experience, time working in the institution, area of assignment, grade and position, functions, work atmosphere.

Second, work environment, confidence, personal and professional development, elaborated on the basis of the Likert scale.

Third, open-ended questions, to find out how much they know about the institution, their relationship with it, their co-workers, managers, and family relationship, to determine the level of identity they have and to find out the level of inter-institutional trust that exists.

It is important to note that for the validation of the tests, the support of the Rector Magnificus of the Universidad Nacional de la Policía de Honduras (National University of the Police of Honduras) was requested, who together with his group of experts issued a certificate of validation of the tests.

The focus groups and the DELPHI method were replaced by interviews with managers due to the limited time available to carry out the research, as these were conducted within the same 3 days in which the tests were applied.

Data analysis:

MaxQDA qualitative and mixed data analysis software was used to organize, code, and analyze the texts.

The surveys were captured in Excel and then imported into the aforementioned software for coding and analysis.

The software allowed for qualitative and quantitative analyses of both the surveys and the texts used.

This analysis was done through the graphs, images, codes, and maps obtained as a result of using the aforementioned software and Excel.

Results

Presentation of the results obtained

Table 1
Basic data

Sex:			**Female** 59		**Male** 78			**S/D** 3	
	18 to 20 years old	**21 to 25 years old**	**26 to 30 years old**	**31 to 35 years old**	**36 to 40 years old**	**41 to 45 years old**	**46 to 50 years old**	**Over 50 years old**	**S/D**
Age:	0	12	19	44	29	19	5	8	4
	Middle school	**High school**	**University technician**	**Bachelor's Degree**	**Master**	**PhD**	**S/D**		
Education:	4	44	8	66	11	1	6		
Admission to the institution:	**Job opportunities** 22		**Call for applications and training course** 116			**S/D No data** 2			

Table 2
Questions with results obtained

ITEMS	Always	Almost always	Occasionally	Almost never	Never	S/D
Does the work you perform in the institution is recognized or valued by your superiors	29	36	47	-	10	2
Do you attend a course related to the work activities carried out within the institution and that allow him/her to develop professionally	18	26	44	-	24	4
Do you consider appropriate that higher level courses such as Diplomas, Master's Degrees, Specialties, etc., are only given to senior managers	15	16	38	9	56	6
Does your current boss addresses you with respect	93	24	12	1	1	9
Have you perceived that your boss has a preference for a certain gender or a specific person	18	12	19	11	76	4
Do you feel confident to propose your ideas for effective work to your immediate boss	60	32	25	13	6	4
Have you perceived that your boss assigns you absurd or meaningless tasks or work in order to punish you	2	10	17	17	88	6
Has your superior has threatened you with the use of disciplinary instruments (arrest, change of area) if you refuse to do work that is beyond your competence	3	2	15	20	98	2

Do you feel confident to ask your boss for support when you have a personal situation or paperwork to do	69	22	23	8	16	2
Does you hierarchical superiors encourage the staff to form a single work team	31	26	40	15	26	2

ITEMS	Always	Almost always	Occasionally	Almost never	Never	S/D
When problems arise, you and your colleagues are able to solve them effectively and efficiently	56	45	25	9	3	2
Do you feel harassed or bullied at work by your colleagues or managers	1	3	10	7	116	3
Do you feel stressed when going about your daily activities	1	6	44	25	61	3
Is your family is proud that you are part of the Institution	86	31	16	0	2	5

ITEMS	Always	Almost always	Occasionally	Almost never	Never	S/D	N/A
The area where you belong disseminates the courses taught in the institution	59	29	35	10	5	2	-
Does your command authorizes you to attend the courses you are interested in	43	25	42	19	9	2	-

ITEMS	Opportunity for learning and growth	Fulfillment of duty	Punishment	Opportunity for learning and growth Fulfillment of duty	Opportunity for learning and growth Fulfillment of duty Punishment	S/D
Being sent to training courses, on any subject, without having selected it, is considerate for you:	117	9	2	4	1	7

Questions related to institutional identity and belonging were asked: institutional history, structure, meaning of the Star and Esprit de Corps.

Discussion and conclusions

It should be borne in mind that although most of the respondents belong to operational areas, their functions are mainly administrative. These areas are Anti-Drugs, Federal Forces, Gendarmerie, Substantive Equality, Precautionary Measures, Office of the Commissioner-General, Regional Security, and the Police Development System.

Since 2007, the now defunct Federal Police has opened its doors to more and more women, allowing them to exercise levels of command on an equal footing with men. However, surveys show that the male population continues to be more numerous, with 78

out of 140 participants being male and 59 female, and therefore, the majority of command positions continue to be held by male personnel.

It is an institution with a young population, equivalent to 73 of the respondents between 30 and 40 years old, allowing the members of the institution to develop their daily activities with greater ability and be more receptive to new learning; where its staff is concerned or tries to train and improve, as it is observed that 66 of the respondents have bachelor's degrees, others have master's degrees, and some have a doctorate; however, there is also a large population with low schooling, as 44 of them have high school, 4 have middle school, and 8 are university technicians.

The entry of personnel into the now defunct Federal Police was by means of a call for applications and a police training course, equivalent to 116 of the participants surveyed, which indicates that its members have the basis for operational work from the time of their entry.

The seniority in the institution of 97 of the participants is 10 years or less, 39 of them have between 11 and 20 years, 2 have more than 20 years. This, complemented by the ages described above, allows the members of the National Guard to have the possibility of changing the direction in which the institution is moving by training in Human Development, promoting the Human Rights of the police and trust, and creating a strong institutional identity.

It should be noted that the data obtained during the surveys provide important information about the hypotheses initially put forward.

In relation to trust and job performance within the institution, 47 of those surveyed said that their managers sometimes value or recognize their work, 29 of them said that they always do, and 36 of them said that they almost always do. As for training and individual and professional development, the respondents mentioned that courses related to their functions are widely disseminated among the members of the areas; however, 44 of the respondents said that they only occasionally attend those that allow them to develop professionally, even if they are of broad interest to them or they feel fully motivated to attend, 18 of them said that they always attend such courses, 24 of them said that they never attend the courses.

It is important that higher level courses such as Diplomas, Master's Degrees, Specialties, etc., be disseminated and given to all National Guard personnel since these are only for senior commanders, which is why 65 of those surveyed say that they never or almost never agree that these types of courses are only given to commanders. The only limitation that should exist for not sending personnel to this type of training should be the level of schooling.

Trusting a person and carrying out certain institutional tasks together with managers and subordinates allows the institution and, in particular, the individuals who work in it to have the possibility of feeling empowered and to continue performing their daily tasks properly since as Pérez and Merino (2009) say, to trust is to give and have the security or firm hope that someone has of another individual or something.

Cornú (1999) also states it, when mentioning that to trust is not to worry about the possible lack of control of something or someone at any given moment. For this it is important, in addition to trust, to include some of the characteristics of the organizational culture or work climate, such as leadership or the system of values, trust and empowerment of individuals allows to develop in a system too strict as can be the police institutions; as mentioned in the police model designed by the extinct Federal Police:

maximize the potential, use of talents, build esprit de corps, introduce a culture of harmony and fraternity, improve the conditions of quality of life. In addition to including personal benefits, as Osse (2006) comments, police officers should enjoy the same rights as everyone else, including time off, fair pay, a fair working day, safe working conditions, and equal opportunities for promotion.

In general to train the members of the Mexican N. G. to acquire and develop their personal, social, and professional skills in their training and professionalization centers, where both women and men enjoy their daily work even more, being sure that they will be respected and supported by their commanders and colleagues, being more empathetic among them, recognizing that they have the same needs, concerns, and limitations; achieving positive results in the personal, family, work, and professional spheres. Reflecting this in the development of their emotional and work stability and, therefore, in the future acquisition of social confidence.

Limitations

Before:

1. Due to the change of authorities in the whole institution, the new titleholders, when the proposal of the investigation was made to them, did not authorize the realization of this one.
2. The new commander does not authorize the performance of the tests to his subordinates, since due to his academic level, it is assumed that someone would try to take away his new position because he has a higher academic level than him.

During:

1. The participants did not answer the tests honestly.
2. Due to the needs of the service in their areas, they were unable or unwilling to answer the entire questionnaire.
3. Little time to carry out the observations due to the work activities of the participants.

Continuity lines

1. Studies should be carried out for personnel deployed in the states of the republic who carry out operational activities, so that the results of both surveys can be analyzed jointly and programs can be designed in accordance with the security institutions in Mexico in order to achieve Integral Human Development of personnel and institutional trust within and outside of them.
2. Conduct citizen surveys to find out how trustworthy they believe the institution to be.

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Reception date: 04/04/2021
Revision date: 06/02/2021
Acceptance date: 07/01/2021