PEDAGOGICAL MANAGEMENT, AFFECTIVE DOMAIN AND DIGITAL COMPETENCE IN EARLY CHILDHOOD TEACHERS IN PERU

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ABSTRACT

The objective of this research is to determine how the variables named digital competence; affective domain and pedagogical management are related in a context of remote teaching in the educational institutions of the initial level of the UGEL 06. The population was of the census type with 105 teachers, the technique used was the survey and the instrument was the 30-question Likert scale questionnaire. The study showed that the variables named digital competence; pedagogical management and affective domain have a positive and significant relationship in a remote teaching context. Likewise, all the components of digital competence (instrumental, didactic, communicative and information search) have a positive and significant relationship with pedagogical management and affective domain.

Keywords: Educational Software, Gamification, Affective Process, School Management

INTRODUCTION

The pandemic caused by COVID-19 has highlighted the shortcomings of the educational service in many countries, as it imposed the need to virtualize this service in order to contain the spread of the virus, a methodology to which many countries were not adapted, since their educational system did not address the development of digital competencies in their teachers, leaving them devoid of the necessary tools to adapt and respond to this new educational need. As commented by Carias, et al., (2021), according to the United Nations Educational, Scientific and Cultural Organization (UNESCO), by May 2020 more than 1.2 billion students at all levels of education had stopped receiving face-to-face classes, 160 million of them located in Latin America and the Caribbean. Therefore, the countries of the region and their educational systems have found it necessary to develop proposals linked to distance education, using different platforms and formats for remote education.

However, these digital competencies will have little chance of developing if they are not included in an adequate pedagogical management that allows them to be planned permanently and in the long term, involving the school's collective in their development. Vela (2019) defines pedagogical management as the set of organized, planned and interrelated actions that the collective of a school undertakes, which in turn is led by the management team to ensure and promote the achievement of learning.

On the other hand, the study elaborated by Meza, Torres & Mamani (2021), which evaluated pedagogical management on teacher performance in regular basic education teachers in the Puno

region during the COVID-19 pandemic, shows that pedagogical management that employs strategies that allow directing human, financial and material resources, programming and evaluation of institutional work, leadership of management personnel to meet objectives, mechanisms oriented to needs analysis and community management, will be able to predict the optimal level of fulfillment of functions, financial and material resources, the programming and evaluation of institutional tasks, the leadership of management personnel to meet objectives, mechanisms oriented to the analysis of needs and community management, can predict the level of optimal fulfillment of functions and the professional performance of the teacher.

Melo & Díaz (2018), state that the development of a virtual learning environment, which involves in its design elements of an affective domain in the process, aims to create a friendly environment that responds to the emotional needs of students. Likewise, they consider that pedagogical management in virtual learning environments should change from using these environments only to share content and carry out activities, to environments that consider the characteristics that encourage or motivate students to carry out their tasks in order to build their knowledge and develop their competencies.

The affective domain, especially in virtual environments, is especially relevant, as demonstrated by Blanco, Fernández & Clave (2016), who identified the lack of communication and interaction among participating teachers and the low level of motivation of users as the weaknesses of a virtual learning environment. Likewise, they add that the success in pedagogical management through this modality depends largely on the level of acceptance that students have about the educational model and the virtual environment, as well as the commitment of teachers to get involved in this new teaching methodology, since the lack of training and/or little interest in getting involved in projects with a transformative and innovative nature, leads to learning in virtual environments slowing down and the students suffer the consequences. It is therefore essential that there be a greater degree of awareness and commitment among teachers and, at the same time, a functional communicative thread for the exchange of experiences. In short, it is an issue of guiding teachers towards ecology of their own learning so that they can update and prepare themselves according to recent social transformations.

Finally, it is necessary to develop a public policy in the educational service, which designs a pedagogical management that implements the development of digital competencies in teachers, as well as the incorporation of the affective domain in order to meet the new needs of students and the modern society. For example, at the local level, teachers do not give the necessary relevance to the current context and the implications in the education sector caused by the health emergency, one of the most important aspects is to learn to develop a relationship between students and teachers by applying pedagogical strategies through the management of emotions and digital skills, which is the situation of the Initial Educational Institution "Gotitas de Agua", where teachers are not trained in the use of digital tools. In addition to this, there is a resistance to change towards a digital education, impairing effective learning and academic performance.

According to the identified problem, the following research question was formulated: In what way is digital competence related to the affective domain and pedagogical management in a context of remote teaching in the Educational Institutions of the Initial level of the UGEL 06?

This research will generate new knowledge with a theoretical foundation that relates digital competence with the interest of providing quality virtual education, and thus, maximize the pedagogical management of teachers with an optimal affective domain. In addition, the formulation of curricular projects will be promoted in search of the achievement of competencies, and a better teaching performance with affective mastery that will be reflected in a quality education in educational institutions. Likewise, instruments of pedagogical management, affective mastery and digital competence will be developed, which can be used in other future research on these variables of study.

The general objective of the study is to determine how digital competence is related to the affective domain and pedagogical management in a remote teaching context in the educational institutions of the initial level of UGEL 06; and the specific objectives are: to determine the relationship of instrumental competence, didactic competence, communicative competence and information search competence with the affective domain and pedagogical management. The research hypotheses were oriented to demonstrate that there is a positive and significant relationship between the mentioned variables.

THEORETICAL FRAMEWORK

Espinoza, et al., (2021), found that the pedagogical management in the multigrade educational institution in the province of Canchis-Peru, is in an unfavorable state, being the most critical points: the lack of training and specialization of teachers, the lack of adequate spaces, infrastructure, equipment and educational resources, as well as the lack of decentralization of administrative and pedagogical functions, so it is not possible to carry out an institutional program to strengthen the pedagogical capacities and curricular planning of the multigrade classroom. Currently, several innovations have been developed in isolation, *i.e.,* the changes made lack transversality, and learning achievement is not as effective, since the institution does not collaborate or promote pedagogical work.

Meza, et al., (2021) conducted a research that had as one of its objectives to analyze the effect of pedagogical management on teacher performance in regular basic education teachers in the region of Puno, during the COVID-19 pandemic, through a study of non-experimental design, explanatory scope and quantitative approach, which included 650 teachers from 10 Local Educational Management Units, to whom a self-evaluation questionnaire of teacher performance and a scale of perception of pedagogical management were applied. A direct and significant correlation was found between the pedagogical management dimension and the teacher performance variable, which explains 52.4% of the variability in teacher performance.

Blanco, et al., (2016) evaluated the perspective of online students on virtual learning environments in higher education, taking as a sample 4 female students from a universe of 80 students enrolled in a postgraduate study in Information and Communication Technologies (ICT) and Education of the Autonomous Community of Barcelona, through personalized qualitative interviews which were subsequently analyzed according to the principle of Miles and Huberman, to finally be structured around a SWOT scheme. The results with respect to virtual learning environments showed that their main weaknesses are the absence of communication and interaction among the participating teachers, and the lack of specific training in information and communication technologies among the teaching staff; however, their main strengths are the instant and direct communication with the class-group and with the contents of the subject, as well as the flexible and free organization and time distribution.

Casal, et al., (2021) carried out a study to determine the level of digital competence, the attitude towards ICT and the influence of gender of Vocational Education and Training (VET) teachers in Galicia, in which 249 teachers participated. The methodology was quantitative, exploratory and descriptive, non-experimental; the data were obtained by adapting the "DigCompEdu Check-In" questionnaire. The results show that teachers have an average level (35.3% are integrators and 31.3% are experts) in digital competence. In addition, their attitude is favorable and gender is a factor that significantly influences the level of digital competence. This shows that the initial and continuous training curricula require review and modification, if necessary, to improve the level of digital competence in teachers, since it is of vital importance to optimize and facilitate the teaching-learning processes and to improve the levels of digital competence of students.

Chen, Cerdas & Rosabal (2020) evaluated the influence of the extension project Modelos de Gestión Pedagógica (MGP) in public schools in the provinces of Heredia, Alajuela & San José (Costa Rica). The research method was qualitative-quantitative and 72 people participated, including teachers and management personnel. The results highlighted that in order to implement pedagogical models based on the institutional reality and the educational context, the participatory and collaborative work of the stakeholders is of vital importance to achieve methodological innovation and contribute to the improvement of the quality of pedagogical management in educational centers.

Avila, et al., (2020) conducted a study aimed at developing a typology to identify the affective domain profile of future teachers in the area of mathematics according to their attitudes towards the discipline, using a simple correlational cross-sectional study where 455 undergraduate students in mathematics were evaluated, with a range of 17 and 27 years of age. For the test, clusters were constructed considering attitudes, anxiety and beliefs. As well as demographic aspects. Three typological profiles were identified and it was concluded that from the university training of future teachers it is essential to improve their affective domain, understanding that they strengthen confidence, provide security and transmit greater tranquility when facing problems and offer alternative solutions using mathematical information.

Regarding the pedagogical management variable, Batista (2007) defined it as a process of transcendence in educational management, whose factors form the personality traits of educational agents, *i.e.*, teachers, which promotes coexistence, using resources, knowledge, skills, values and abilities to solve problems and for the benefit of the community. Pedagogical management makes it possible to comply with previously planned objectives and actions, identifying the strengths and weaknesses of the pedagogical process, evaluating and verifying its effectiveness and efficiency in learning and in the management of the school year.

According to Alvarez & Gonzalez (1998), the management of education and teaching is based on the theory of the process of consciousness, that is, its objective is to be the fundamental component of the process of education and teaching; therefore, strategies are designed and optimized so that teachers can be more efficient in their management, which are influenced by the interest and degree of integration of the participants.

Bastías (2013) made an adaptation of the model developed by Kolb (1984), where he identified the following types of managers: the analytical manager is characterized by being systematic, abstract, convergent, visionary, and informed, which allow him to develop concepts and ideas with their rational and logical support. These skills are associated with the left hemisphere of the brain, the pragmatic manager, who is detailed, calculating, methodical, and disciplined, being able to choose the most appropriate course of action in any situation, taking into account the information and guiding the process to follow through strategies, achieving the objectives efficiently and effectively. They are also related to the left hemisphere of the brain. The socio-dynamic manager, who is characterized by being a leader, achiever, affective, risk-taker and expressive, being able to interact with others and with the world in an active, appropriate and positive way. These skills are linked to the right hemisphere of the brain, the creative manager who stands out for being intuitive, imaginative, committed, sensitive, patient and independent. These skills are also linked to the right hemisphere of the brain. And finally, the multiple or multifaceted manager, who combines the characteristics of the four types of managers mentioned above, *i.e.*, his thoughts and actions are linked to both hemispheres of the brain.

The pedagogical management model is a method that structures the phases to incorporate innovations in educational institutions and includes tools to achieve the objectives of the institution. First is the diagnostic phase, which includes the interests of the clients, the community and educational environment, the identification of the problem, the restrictions of the center, the current processes and the SWOT analysis, then there is the planning phase, which is based on the previous

phase, where the institution wants to go to establish the procedures and strategies to be used to achieve the goal. In the implementation phase, what was planned is executed, verifying, analyzing and correcting each action taken in order to achieve what was established. Finally, in the verification and adjustment phase, the difference between what was planned and what was executed is analyzed in order to take corrective measures or preventive actions according to the size of the gap (Cerdas et al., 2008).

Regarding the affective domain, Cárdenas & Gómez (2011) define it as a wide range of states of mind (feelings, emotions and moods) different from the cognitive process, and includes the beliefs, attitudes, values and appreciations of the individual.

Costillo, et al., (2014) evaluated the influence of including outings to natural environments in their teaching practice and found that 49.22% of teachers consider that these outings play a primary role in the affective and cognitive level, since students are more motivated, the acquisition of knowledge is experiential, illustrative and meaningful and allows experimenting with different instruments and techniques, *i.e.,* science learning is more effective and meaningful.

According to the studies conducted by Gómez (2000); Hannula, et al., (2004), the investigation of the affective domain of teachers and students in the teaching-learning processes in the area of mathematics is of vital importance.

León, et al., (2020) consider that the affective domain is multidimensional, and is made up of three components: the cognitive, reflected in the beliefs held about the course or subject; the affective, which includes the subject's feelings of rejection or acceptance, and finally, the intentional or tendency that the individual has towards the approach or avoidance of the subject. These components are in constant interaction until it becomes tangible in the teaching practice and student academic performance. Despite this, most studies evaluate the components of this variable independently.

Similarly, Blanco, et al., (2010) considered three basic components to evaluate the affective domain in the teaching-learning of mathematics: the beliefs that make it possible for the student to filter and construct his own notion and vision of reality and the world, the attitude, defined as the student's predisposition towards the subject, whether positive or negative, which determines his intentions and behavior, and finally the emotions, which are the affective response to the experiences that the student has.

For example, Gairín (1991) developed a model on the affective domain in the area of mathematics, which was developed based on the Spanish context, and McLeod (1992) developed a model on the affective domain and its relationship with mathematical learning, in which three components were considered: attitude, beliefs and emotions. On the other hand, DeBellis & Goldin (1999) developed a model in which the affective domain has four dimensions: attitudes, beliefs, emotions and values.

About digital competencies, Rangel (2015) mentions the ability of the individual to perform some activity, through various personal resources (knowledge, emotions, attitudes, skills, skills, values, etc.), in order to have a satisfactory outcome to a problem posed and within a defined context. With respect to digital teaching competence, it is defined as the set of resources used by the teacher integrating ICT (Information and Communication Technologies) in his or her teaching practice. Hernández (2008) classifies digital competence in technological competences that include the skills to manage computer systems and didactic-curricular competences, according to which it is the teacher's ability to effectively integrate ICT in his teaching practice and his own professional development.

Marqués (2008) mentions that the digital competencies of teachers are subdivided into specific competencies, which are: instrumental, technical or technological digital competence, which is the ability to identify, locate, retrieve, store, organize and analyze digital information, judge its relevance and purpose, didactic digital competence which is the knowledge of teachers to

identify, plan and execute strategies and different pedagogical resources, communicative digital competence that relates the digital with the tools, and information-seeking digital competence that is made up of strategies to search for information and surf the Internet.

METHOD

The type of research is basic, pure, theoretical or fundamental, that is to say, it is based on previous studies and contributes to the construction of theories, dogmas, etc. (Valderrama, 2015), generating further knowledge. The research approach is quantitative, with a correlational design and the study variables are pedagogical management, affective domain and digital competence.

The population was a census and is made up of 105 teachers who have more than one year of work experience in early education, who gave their prior consent to participate in the study. The collection technique was a survey and the instrument was the questionnaire which, according to Lopez & Fachelli (2015) it is a series of questions (registration table) conducted to the population or an extensive sample of it through an interview where the anonymity of the subject is characteristic. Data collection was carried out through the virtual platform Google Forms and Google Drive, and data obtained were analyzed using Microsoft Excel and SPSS 26 for the creation of tables and figures that were later statistically analyzed.

RESULTS

The descriptive results of the pedagogical management variable show that 39% present a low level, 40% a medium level and 21% a high level; in the case of the effective mastery variable, 26% present a low level, 14% a medium level and 60% a high level; finally, the analysis of the digital competence variable shows that 40% have a low level, 12% a medium level and 48% a high level.

Regarding quantitative results the following results were obtained:
General hypothesis

Table 1
CORRELATION OF ORDER BETWEEN DIGITAL COMPETENCE, PEDAGOGICAL MANAGEMENT AND AFFECTIVE DOMAIN IN EARLY EDUCATION TEACHERS OF UGEL 06

Variables		Correlation order 0	Correlation Order 1: (12,3)	Parameters N=100	
Pedagogical management	*Affective domain	0.756		σtypical	0.0094
Pedagogical management	*Digital competence	0.843	0.415	Zcalculated	4.4916
Affective domain	*Digital competence	0.717		$Z_{(1-\alpha/2)}$	1.96
** Correlation is significant at the 0.01 level (bilateral).					

The correlation of order 0 is positive and moderate between the variables pedagogical management and affective domain (0.756), and affective domain and digital competence (0.717); likewise, the correlation is high and positive for the variables pedagogical management and digital

competence (0.843). In the analysis of the relationship of order 1, it is found that pedagogical management, affective domain and digital competence have a moderate correlation of 0.415 in Early Childhood Education teachers of UGEL 06.

Specific Hypothesis 1:

Table 2
CORRELATION BETWEEN INSTRUMENTAL COMPETENCE, PEDAGOGICAL MANAGEMENT AND AFFECTIVE DOMAIN IN EARLY EDUCATION TEACHERS OF UGEL 06

Variables	Correlation order 0	Correlation order 1: (12,3)	Parameters N=100	
Pedagogical management Affective domain	*0,758	0,437	σtypical	0,00929
Pedagogical management Instrumental competence	*0,795		Zcalculated	4,74
Affective domain	*0,728		Z(1-α/2)	1.96
Instrumental competence				
** Correlation is significant at the 0.01 level (bilateral).				

The correlation of order 0 is positive and moderate between the variables pedagogical management and instrumental competence (0.795), and instrumental competence and affective domain (0.728), likewise, in the analysis of the relationship of order 1 it is found that pedagogical management, affective domain and instrumental competence have a moderate correlation of 0.437 in Early Childhood Education teachers of UGEL 06.

Specific Hypothesis 2:

Table 3
CORRELATION BETWEEN DIDACTIC COMPETENCE, PEDAGOGICAL MANAGEMENT AND AFFECTIVE DOMAIN IN EARLY EDUCATION TEACHERS OF UGEL 06

Variables	Correlation order 0	Correlation order 1: (12,3)	Parameters N=100	
Pedagogical management Affective domain	*0,758	0,457	σtypical	0,00917
Pedagogical management Didactic competence	*0,766		Zcalculated	5,067
Affective mastery Didactic competence	* 0,724		$Z_{(1-\alpha/2)}$	1.96
** Correlation is significant at the 0.01 level (bilateral).				

The correlation of order 0 is positive and moderate between the variables pedagogical management with didactic competence (0.766), and didactic competence and affective domain (0.724); likewise, in the analysis of the relationship of order 1 it is found that pedagogical management, affective domain and didactic competence have a moderate correlation of 0.457 in Early Childhood Education teachers of UGEL 06.

Specific Hypothesis 3:

Table 4
CORRELATION BETWEEN COMMUNICATIVE COMPETENCE, PEDAGOGICAL MANAGEMENT AND AFFECTIVE DOMAIN OF EARLY EDUCATION TEACHERS OF UGEL 06

Variables	Correlation order 0	Correlation order 1: (12,3)	Parameters N= 100	
Pedagogical management Affective domain	*0,758	0,449	σtypical	0,00921
Pedagogical management Communicative competence	*0,827		Zcalculated	4,957
Affective domain Communicative competence	*0,698		$Z_{(1-\alpha/2)}$	1.96
** Correlation is significant at the 0.01 level (bilateral).				

The correlation of order 0 is positive and high between the variables pedagogical management and communicative competence (0.827), and it is positive and moderate in the variables communicative competence and affective domain (0.698). Likewise, in the analysis of the relationship of order 1 it is found that pedagogical management, affective domain and communicative competence have a moderate correlation of 0.449 in Early Childhood Education teachers of UGEL 06.

Specific Hypothesis 4:

Table 5
CORRELATION OF ORDER BETWEEN INFORMATION SEEKING COMPETENCE, PEDAGOGICAL MANAGEMENT AND AFFECTIVE DOMAIN IN A CONTEXT OF EARLY CHILDHOOD EDUCATION TEACHERS OF UGEL 06

Variables	Correlation order 0	Correlation order 1: (12,3)	Parameters N=100	
Pedagogical management Affective domain	* 0,758	0,381	σtypical	0,00953
Pedagogical management Competence in information search.	*0,814		Zcalculated	4,057
Affective domain Competence in information seeking	*0,7533		$Z_{(1-\alpha/2)}$	1.96
** Correlation is significant at the 0.01 level (bilateral).				

The correlation of order 0 is positive and high between the variables pedagogical management and information seeking competence (0.814), and it is positive and moderate in the variables information seeking competence and affective domain (0.7533). Likewise, in the analysis of the relationship of order 1, it is found that pedagogical management, affective domain and communicative competence have a moderate correlation of 0.381 in Early Childhood Education teachers of UGEL 06.

DISCUSSION

Regarding the results obtained, it is evident that the variables named pedagogical management and affective domain (0.758), and affective domain and digital competence (0.715),

have a positive and moderate correlation, while the variables pedagogical management and digital competence (0.840) have a positive and high correlation. These results coincide with the contributions of Mezaet, et al., (2021) where a direct and significant correlation was found between pedagogical management and teacher performance (52.4%). Similarly, Espinoza, et al., (2021) found that pedagogical management is of vital importance, since if innovations are carried out in isolation, the benefits of such implementations are not as effective and lack transversality.

When analyzing the dimensions of digital competence, the pedagogical management variable presents a positive and moderate correlation with instrumental competence (0.796) and didactic competence (0.765), while with communicative competence (0.826) and information seeking competence (0.812) present a positive and high correlation, which coincides with the research of Chenet, et al., (2020) who highlighted that the implementation of pedagogical models to achieve methodological innovation based on the institutional reality and the educational context requires participatory and collaborative work of stakeholders (institution, teachers, managers), so innovations can be implemented to improve the quality of pedagogical management and improve the quality of schools.

Similarly, the affective domain variable presents a positive and moderate correlation with instrumental competence (0.725), didactic competence (0.726), communicative competence (0.698) and information seeking competence (0.7535). The relevance of this variable is reinforced by the study conducted by Avila, et al., (2020) where the attitudes, anxiety and beliefs of teachers in training were considered, concluding that the improvement of the affective domain is of high priority for future teachers, since it helps them to strengthen confidence, it gives them security and they can transmit greater tranquility in the development of their activities as educators. Likewise, Casal, et al., (2021) conducted a study where the teaching staff has an average level (35.3% is integrative and 31.3% is expert) in digital competence, rescuing that the attitude of the teaching staff is favorable and that this factor significantly influences the level of digital competence.

CONCLUSIONS

The variables named pedagogical management, affective domain and digital competence have a positive and moderate level of correlation, and it is important to carry out more studies of the dimensions of these variables in different contexts to evaluate the relationship between them and thus be able to make the necessary educational improvements for the benefit of educational quality and the professional development of teachers.

The current educational context calls for modeling and developing new ways of managing the school, integrating educational agents and providing solutions to the needs of students through innovative methodologies in accordance with the requirements and problems encountered in the institution.

The digital competencies of teachers will be essential because it is a necessary tool in digital education, so it should be taken into account that teaching through these media will not disappear, and proper management of resources in the different digital platforms has a direct influence on the learning process of students.

The affective domain reflected in a democratic, respectful and horizontal coexistence has a positive influence on the students and on the development of the teacher's educational tasks within the institution; likewise, the affective domain should be strengthened with workshops on self-esteem and cooperative work to improve emotional stability for the benefit of the educational community.

REFERENCES

Álvarez, G. (1998). Didactics: A conscious teaching and learning process. *Cintex, 7*, 5 – 9.

López-Roldán, P., & Sandra, F. (2015). *Methodology of quantitative social research*. Bellaterra (Cerdanyola del Vallès): Dipòsit Digital de Documents. Universitat Autónoma de Barcelona. Edición digital.

Batista, M.A. (2007). Information and communication technologies in school: Outlines, keys and opportunities for their pedagogical integration. *Buenos Aires: Ministry of Education, Science and Technology of the Nation*.

Bastías. (2013). Pedagogical management styles present in teachers of schools in the Metropolitan Region. *Pedagogical Studies, 39*(2), 7-24. [Consultation Date June 11, 2021]. ISSN: 0716-050X.

Fernández, B.C. (2016). Online students' perspective on virtual learning environments in higher education. *International journal of technology and educational innovation, 2*(2), 109–116.

Caballero, B., & Guerrero, P. (2010). The affective domain in the Teaching/Learning of Mathematics. A review of local research. *Campo Abierto. 29*(1), 13-31.

Gómez, C. (2011). Self-efficacy and assessment of learning. *International journal of developmental and educational psychology, 1*(2), 93-97.

Barreira, C., & García, M. (2021). Digital teaching competence of vocational training teachers in Galicia // Digital teaching competence of Galician vocational training teachers. *Pixel-Bit, Media and Education Magazine, 61*, 165-196.

Vargas, C.M. (2008). Pedagogical management models, in priority attention areas: Analysis of an experience. *Educare Electronic Magazine, 12*(2), 9-29.

Chen, C.R. (2020). Pedagogical management models: Factors of participation, change, and innovation in Costarican educational centers. *[Models of pedagogical management: Factors of participation, change and innovation in Costa Rican educational centers] Revista Electronica Educare, 24*(2).

Marín, C.H. (2021). Educational use of radio in times of pandemic in Chilean rural schools. *Latin American Journal of Communication. 146*, 59-76.

Costillo, B., & Brígido, D. (2014). Assessment by the teachers in training of the affective domain in the outings to the natural environment as teaching-learning activities. *International Journal of Developmental and Educational Psychology, 7*(1), 213-220.

Debellis y Goldin. (1999). Aspects of affect: Mathematical intimacy, mathematical integrity. En Zalavsky, O. (*Edition*), *Proceedings of the 23rd conference of the International Group for the Psychology of Mathematics Education*, (249-256). Haifa: Israel.

Espinoza, C.H. (2021). Pedagogical management in multigrade educational institutions of the province Canchis - Cusco. *Opuntia Brava, 13*(2), 340-355.

Gairín. (1991). *Attitudes in education: A study on mathematics education, 4*. Barcelona: Marcombo.

Gómez. (2000). Affective influences in the knowledge of mathematics. *Educational Studies in Mathematics, 43*(2), 149-168.

Hannula, E., & Philippou y Zan. (2004). Affect in mathematics education–exploring theoretical frameworks. En M. Hannula, J. Evans, G.N. Philippou y R. Zan (coordinators), *Proceedings of PME, 28*, 107-136). Bergen, Norway: International Group for the Psychology of Mathematics Education.

Hernández. (2008). Teacher training for the integration of ICT in the curriculum: New roles, competencies and training spaces. In A. García-Varcárcel (coord.). *Research and information and communication technologies at the service of educational innovation*, 33-56. Spain: University of Salamanca.

Ávila, Rojas y Tovar. (2020). Profile of affective domain in future mathematics teachers. (Spanish). *Journal of Educational Psychology, 15*(2), 225–236.

Kolb. (1984). *Experiential learning: Experience as the source of learning and development*. New York: Prentice Hall, Englewood Cliffs.

León, Solano, & Gómez y Fernández. (2020). Affective domain and teaching practices in Mathematics Education: An exploratory study in teachers. *Ibero-American Journal of Mathematical Education. 25*,129-149.

Marquès. (2008). Teachers' digital skills.

McLeod. (1992). Research on affect in mathematics education: A reconceptualization. *Handbook of research on mathematics teaching and learning, 1*, 575-596.

Melo y Díaz. (2018). Affective Learning and Gamification in Virtual Education Scenarios. *Technological information, 29*(3), 237–248.

Meza, & Mamani, T.Y. (2021). Educational management as a determining factor in the performance of regular basic education teachers during the COVID-19 pandemic, Puno-Peru. *University Notes: Research Journal, 11*(1), 23–35.

Rangel. (2015). Digital teaching skills: Proposal of a profile. Pixel-Bit. *Media and Education Magazine*, *46*, 235-248.
Valderrama. (2015). *Steps to develop scientific research projects*. Lima: Ed. San Marcos.
Vela. (2019). Teaching skills and their relationship with the pedagogical management of the POSic Educational Institution, in 2018. *National University of San Martín – Tarapoto*. Thesis Repository - UNSM - T.