

Effects of the Training Program for Managers in Digital Competencies in the Framework of Good Performance, in the Improvement of the Performance of Managers of Networks 13, 14 and 15 of UGEL 02, 2019

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Abstract: The objective was to demonstrate that the Training Program for Managers in Digital Competencies of the Good Performance Framework, is an influential factor for improving the performance of managers of Networks 13, 14 and 15 - UGEL 02. It presents a quantitative approach, applied type, technological, quasi-experimental design. The sample took directors, in an experimental group of 21 and a control group of 22, whose research instrument was a survey. The results indicate that 76.2% of the total number of directors presented a competent level of good performance before the Program, while 100% presented an outstanding level afterwards. In the hypothesis test it was evidenced applying the Wilcoxon test, that in the experimental group before the program, the average score is 22.2 ± 1.3 while the average after is 52.8 ± 2.4 , existing a significant increase in the experimental group of $p < 0.05$, which was observed in the analysis of independent samples applying the Mann Whitney test. The pretest shows the mean of the good performance score of the control group of 25.7 ± 6.7 while the experimental group is 52.8 ± 2.4 . Likewise, after the program there is a significantly higher mean of $p < 0.05$ of good performance score in the experimental group in relation to the control group.

Keywords: Digital competences, Managerial performance.

It is known to all professionals that today people live and interact in a global village, which is interconnected by information and communication technologies, since all information and events become public knowledge in real time, thanks to the development that these communication technologies have reached. Therefore, in universities and vocational training centers there is no graduate who has not taken a refresher course or basic training in ICT, because it is a prerequisite to get a job position and have a presence in a digital society.

In that sense, every manager, teacher, administrative or service staff must master these tools to keep in touch with their work organization, and even managers, as leaders of an educational community. It is in function of this leadership that they must promote approaches and dynamic, collaborative and integrative interactions with the purpose of managing the school in the best way. This is how the following questions arise from this research: What level of management in digital skills will the directors of Metropolitan Lima have developed, how often do they use these technological communication tools, how do they take advantage of technological tools of information and communication for their performance in the managerial position, etc. The answers to these and other questions will allow to understand the dimension that covers the study problem for a better analysis of the study population.

And it is known that when talking about digital competences, it means not only the use of computers to create documents in Word or Excel, since there are multiple uses to be given in the pedagogical directive

work, functions that point to the use of ICT to redesign or produce content or data to meet the reality presented by each educational institution.

For example, creating virtual communities to work collaboratively in the construction of management documents in a synchronous or asynchronous way, conducting an online survey to collect input from parents or feelings of satisfaction with the service provided, virtual request or delivery of documents to parents, use of EDpuzzle for editing own or network videos in workshops with teachers, parents or students according to their needs, publications in blogs interconnected to teaching learning communities, assignment of tasks for different groups of the educational community, etc.

However, not all educational institutions have a website, not even the teachers or principals themselves are trained to create a website for their educational institutions and what is even more serious is that some schools that are located in districts in the northern cone of Lima, do not have a computer lab where they can consolidate learning, i.e., are at a disadvantage as an educational institution in the province or rural areas, such is the case of two schools that are in the district of San Martín de Porres.

Faced with this panorama of uncertainty and concern, it is also known that it is not possible to have access to the entire study population, therefore, being more objective and considering the limitation to access this large number, the goals of attention were readjusted and the study focused only on the directors of three educational networks of UGEL 02: 13, 14 and 15, which are strategically interrelated by their geographical location and their economic social stratum.

UGEL 02 serves the educational institutions of the districts of San Martín de Porres, Rímac, Independencia and Los Olivos. The problems that each of these schools has to deal with are very varied, which is why, for better attention, it has grouped them into 21 educational networks, which are led by a principal who comes from one of the schools that make up the network. Through the educational networks, spaces for analysis, reflection, reformulation of educational proposals that result from educational experiences where learning has been effective are encouraged. Therefore, experiences are exchanged, communication mechanisms are established and the achievement of autonomous and empowered management, in order to provide a quality educational service, in accordance with the need to respond to a holistic and modern management. Here, principals attend at least once a week and maintain a more active network where collective goals are for all the institutions that comprise it. At present and under the RDR No. 153-2019-DRELM. There are 144 institutional educational networks that include more than 95% of the schools and colleges of the seven UGEL of Metropolitan Lima.

Thus, within the meetings mentioned above, it has become evident that many principals have not developed their skills in the use of ICTs, they cannot interact with information and are infrequent in the use of the different technological tools. If these principals could improve their ICT skills, then communication will be faster and the exchange of information will be more viable, and any problems that arise in one of the institutions can be dealt with more quickly. Mastering ICT implies being an autonomous, efficient, responsible, critical and reflective person, since he/she can select and modify the information he/she wants, using the different technological tools. The notion of competence appears together with the contemporary management of human resources, when empirical studies carried out in the USA during the sixties already demanded a certain technological mastery in the use of ICT.

And regarding the educational field these concepts are referred to the leadership of directors, since they are expected to be leaders, communicators capable of issuing clear, precise and convincing messages promoting the participation of the entire educational community. Since he/she is responsible for the educational and organizational development.

There are five areas of digital competence: first, information and information literacy that allows them to interact with the information that circulates in the networks; second, the communication and collaboration of the community in digital environments; third, the creation of digital content where they can create images, videos and multimedia files; fourth, security that is related to the protection of information; and fifth, problem solving that allows them to identify problems and solve them using digital tools.

1.1 Previous Studies

1.1.1 International Level: According to (1), the study was framed within the line of teacher training in the use of ICT. For this purpose, the perception of self-efficacy in the use of ICT in the classroom was explored. The sample consisted of 107 students in the grades of initial and primary education teacher. The results indicated that teachers perceive themselves as more skilled in the use of ICT with respect to making pedagogical decisions related to ICT use. After analyzing the results, it was concluded that teacher training should not only focus on technical training oriented to the knowledge and use of different technological devices, but should also involve the pedagogical skills necessary to successfully use ICT in the classroom, in a coherent way and contributing to the achievement of learning. In this way, the integration of technological resources in the development of classes is stimulated.

According to (2) they sought to measure the degree of digital competence of basic education teachers in Loja Canton (Ecuador). For this purpose, an instrument was applied and a stratified, non-probabilistic sampling was used in public and private schools. The sample consisted of 420 teachers. The stages of the work were diagnostic, which suggests determining the structural and situational feasibility of the educational offer that is duly justified with the needs of the labor market, as well as knowing the profile of the teachers to diagnose training needs; then, the design of the course and its implementation and, finally, follow-up, for its continuity and improvement. The research work constitutes the initial phase, deepened the analysis of proposals for teacher training in digital competencies and proposes the Model of Standards in Digital Competencies applicable to Basic Education teachers in Latin America through a qualitative study with support in discussion groups, piloting and expert judgment; with which, the research instrument for the diagnosis of digital competence of teachers has been built. The results obtained indicated that the digital competence of teachers is low and after the analysis there is evidence of a tendency towards the curricular integration of ICT, especially among teachers under 30 years old and coming from pedagogical institutes.

The case of the subject of technology in secondary education. The diagnosis of teaching skills in the subject of technology taught in secondary education by teachers trained in Higher Education Institutions in Mexico was the objective of the study. The study was quantitative and exploratory. In addition, it used a Likert-type questionnaire, organized by the factors of planning, didactics, evaluation and use of ICT. They evidenced that for the planning component, the competence of identifying the training fields of basic education (2.80 ± 0.34); for the didactics component, the competence-based model was known (2.98 ± 0.36); for the evaluation component, it was the competence of establishing criteria (2.84 ± 0.44) and for the management of ICT was that of using them in the classroom (2.93 ± 0.51); a mean of less than

2 was not obtained, which indicates that there are no results about the low level of mastery of teaching competencies for those who teach the subject of technology. The modality was compared, as well as age, finding significant differences in planning ($t = -8.051$, $p = 0.01 < 0.05$) and didactics ($t = -2.478$, $p = 0.01 < 0.05$), in general secondary and technical, with 95% confidence. It was concluded that they have a high mastery in the competencies related to planning, while they present a regular mastery for those of didactics, evaluation and ICT management. (3)

1.1.2 National Level: For (4), the purpose of the research was to study the relationship between digital competencies and professional development in teachers. The methodology used was quantitative, basic, correlational, non-experimental and cross-sectional. The study population was 214 teachers of the educational institutions Fe y Alegría de Año Nuevo Collique, the sample was 138 teachers. The instruments were two questionnaires to measure the study variables. The research found that there was a relationship between the study variables technological competencies and professional development of teachers of the educational institution Fe y Alegría de Año Nuevo Collique, with an r-value of 0.288, showing a low level of relationship.

According to (5), its purpose was to study the relationship of digital competencies in the teaching performance of an educational unit Cumandá Chimborazo of Ecuador. The research was a non-experimental, causal correlational design. The research instruments used were two ordinal questionnaires. The study found that digital competencies do not influence teaching performance in an educational unit Cumandá Chimborazo.

According to (6), The purpose of his study was to establish the influence of the application of ICT integration workshop to strengthen digital competence in first semester students of IESTP. The research was of experimental method, statistical, applied type and pre-experimental design. The sample consisted of twenty students. In the research found that the ICT integration workshop contributes in strengthening digital competence in the first semester students of CPCEI of IESTP, with a significance value of 0, 025, with a $t(2,093) < t_c(7,042)$.

The design was cross-sectional correlational. In this work, the Scale of digital competencies for teachers and the checklist for the evaluation of teaching performance in the Pedagogical Innovation Classroom were applied. The results of this work express that the total score of digital competencies is directly and significantly related to the total score of teaching performance ($p < .05$). A weak correlation of magnitude was found. Collaborative strategies are also directly related to pedagogical skills ($p < .05$), methodological strategies ($p < .001$) and total teacher performance score ($p < .01$). Interpersonal communication is directly related to time and ICT resources ($p < .01$). Finally, the total score of digital competencies is directly related to time and ICT resources ($p < .01$). The level of performance of teachers in the classroom of pedagogical innovation of educational networks 03, 05 and 07 of UGEL 01, is in a tendency to a low level. It was shown that there is a direct and significant relationship between the dimensions: information processing and time and resources. (7)

According to (8), the objective was to find the relationship between the digital competencies of basic education teachers and the use of ICT for educational purposes. The study was carried out with 127 6th grade primary and 5th grade secondary school teachers from 40 schools in nine districts of Lima. Basic technological competencies, pedagogical competencies and complex technological competencies were identified. It was found that the teachers surveyed were more proficient in technological competencies,

followed by pedagogical competencies and finally complex technological competencies. It was concluded that in order to develop these competences it is necessary that teachers learn to use and have a positive attitude towards digital media as a new instrument to deal with knowledge in a new format and as a new learning culture. Furthermore, teachers use technologies in the classroom for personal professional purposes, using word processors and the Internet, and with students they use them to organize school work and very little for interactive activities with children and adolescents. It is also evident that there is a low relationship between teachers' digital competencies and the frequency of educational use of ICT; however, the correlation is maximized with more complex competencies.

This work had a descriptive methodology, and its purpose was to know the attitude of teachers towards information and communication technologies (ICT). The 220 teachers who were part of the sample provided socio-demographic information such as years of service in teaching, gender and age. They answered a 72-question questionnaire with a Likert scale, which collects information on the components of cognitive, affective and behavioral attitudes. The reliability of the instruments is 0.88 on the Cronbach scale. The results indicate a positive attitude towards ICT by presenting beliefs and a favorable emotional disposition towards information and communication technologies. By establishing a favorable affective attitude, the teachers surveyed feel a degree of satisfaction with the use of technology, thus diminishing the limitations of technological imposition on the activity of teachers. They see technology as an element that could facilitate and improve their work, so it can be established that there is a good predisposition on the part of teachers to the use of technology, for which they would be willing to be trained and to change their pedagogical practices. On the other hand, it was found that factors such as age, gender or years of teaching experience do not influence the behavioral, affective and cognitive attitude towards ICT. (9)

1.2 Digital skills:

The author in (10) defines competence as the ability to respond to complex demands, carrying out various tasks appropriately. It involves a combination of practical skills, knowledge, motivation, ethical values, attitudes, emotions and other social and behavioral components that are mobilized together to achieve effective action.

Consequently, competencies are considered as complex sets of knowledge, skills, attitudes, values, emotions and motivations that each person or each group puts into action in a given context in order to face the characteristic demands of each situation. Furthermore, it considers that the fundamental competencies are those essential competencies that all human beings need in order to face the demands of the different contexts of their lives as citizens. Fundamental competencies or *key competencies* are those competencies that are important for many areas of life, that contribute to a satisfactory life and to the good functioning of the social community.

DeSeCo's proposal is based on an open, integrated, holistic and relational interpretation of the concept of competencies; gathering the contributions of sociocultural and constructivist studies on human development and learning, it affirms that individuals make judgments, review, reflect and change behavior, by continuously reconstructing their useful and relevant knowledge, when they interact with other people and objects in the complex contexts of social interaction. The most recent studies show that individual skills are social constructions, reflecting the cultural practices that dominate the contexts and concrete situations that surround the lives of individuals (11). (11).

For (12), ICT competencies are those socio-cognitive competencies that are essential for developing in the knowledge society, such as learning to search for information and learn, learning to communicate, learning to collaborate and learning to participate.

This vision of competencies coincides with the vision that social constructivism, as a psychological theory, has of learning as a social act, a process that develops in concrete social situations where the tools of the culture of that community are used. The individual learns, incorporates new meanings, from birth, in the daily scenarios where he satisfies his needs, precisely because in order to satisfy those needs in that context he needs to learn gestures, symbols and codes to correctly interpret the demands and react adequately to the possibilities.

For (10), the learning of human beings is situated in physical and cultural scenarios that are configured as symbolic networks that each subject must learn in order to be able to manage effectively first and then autonomously. These symbolic networks that constantly evolve with social development make up the tools of the culture that each person must learn.

With the emergence of Web 2.0 a new interaction is taking place that results in, and at the same time uses, other symbolic systems different from those that had been common until now; the interaction with a technology, and more specifically with its symbolic systems, transforms our way of understanding and interacting with the environment, and such a relationship has repercussions on the strengthening or weakness of our specific cognitive or meta-cognitive abilities (13).

It is here where research in education makes sense, the purpose of which is to analyze the impact that web 2.0 applications are having on the development of skills in students, how these tools determine the change in the styles of information processing and, in turn, condition the acquisition of basic skills.

1.3 Main characteristics of the basic competences:

Taking into consideration the core work underpinning the DeSeCo document, and its subsequent critical developments, we can highlight the following main characteristics that shape this concept of core competencies (11).

The competence dimensions involved in digital literacy.

According to (10), he points out that the integral and globalizing educational model for literacy in the use of Information and Communication Technologies requires the development of five areas or competency dimensions that are developed simultaneously in the individuals who learn. These are: instrumental dimension, cognitive-intellectual dimension, cognitive-intellectual dimension, socio-communicational dimension, axiological dimension and emotional dimension.

- **Instrumental dimension:** It is simply referred to the practical knowledge and skills for the use of hardware and software. It is the first, basic stage, to which this study referred earlier, insufficient for an adequate methodological use of web 2.0.

- *Cognitive-intellectual dimension:* This is related to the acquisition of knowledge and specific cognitive skills that allow searching, analyzing and selecting the enormous amount of information available on the network, giving it a meaning, analyzing it critically and reconstructing it personally.

- *Socio-communicative dimension:* It implies the "development of a set of skills related to the creation of texts of diverse nature (hypertextual, audiovisual, iconic, three-dimensional, etc.), disseminating them through different languages and being able to establish fluid communications with other subjects through technologies. It also involves acquiring and developing behavioral norms that imply a positive social attitude towards others, such as collaborative work, respect and the company in social networks".

- *Axiological dimension:* This would be the aspect most related to the ethical values involved in the use of these technologies.

- *Emotional dimension:* Within the emotional education, so much in vogue lately, but ignored in the project of the new Organic Law of Education, this dimension has to do with learning to control negative emotions, with the development of empathy and with the construction of a general and digital identity, "characterized by balance".

Also, (10) takes into account these dimensions of digital literacy and curriculum development for Secondary Education, which has introduced "digital competence and information processing", the author points out that learning three sub-competence domains is necessary:

- Acquisition and understanding of information. Searching for information, selecting it, analyzing it and drawing conclusions.
- Communication and social interaction. Collaborative work between classes and centers, discussion forums, e-mail.
- Expression and dissemination of information. Elaborate web pages, blogs, multimedia presentations, video clips using new tools that are emerging every day.

At another point in his report he recalls that this learning model involves developing a model of educational practice of teaching-learning supported by ICT.

Incorporate and understand literacy not only in reading and writing, but also in the development of audiovisual, digital and informational skills. This means training students to be able to reconstruct and give meaning to the multitude of information they obtain out of school through the multiple digital technologies of the society of the century and to develop the competences to use and express it intelligently, critically and ethically. (10)

1.4 Concept of competencies:

It is extremely important to delimit very clearly that of competencies, in order to adequately address the meaning and representation of ICT competencies. It should be noted that most countries' education systems use competencies as one of their educational pillars and objectives.

On the subject, (14) states that competencies are processes that people put into action-action-creation to solve problems and carry out activities in their daily lives and in the work or professional context, contributing to the construction and transformation of reality, for which they integrate knowing how to be (self-motivation, initiative and collaborative work with others), knowing how to know (observe, explain, understand and analyze) and knowing how to do (performance based on procedures and strategies). Competencies, in such a perspective, are constituted as underlying cognitive-affective processes, as well as public and demonstrable processes, insofar as they imply elaborating something of oneself for others with rigor.

The OECD's Definition and Selection of Competencies Project (DeSeCo) cited by (14) defines competency as the ability to respond to complex demands and to carry out diverse tasks appropriately. It involves a combination of practical skills, knowledge, motivation, ethical values, attitudes, emotions and other social and behavioral components that are mobilized together to achieve effective action. He also points out that competencies are repertoires of behaviors that some people master better than others, which makes them effective in a given situation. Thus, when handling new ICTs, there will be people who are more proficient in the use of the Internet and other people will be in the process of learning. In this way, it is necessary to specify which are those competences that people should handle adequately. A fundamental characteristic is that technological competencies are universal, that is to say, there are no northern or southern competencies, since the use of computers and the Internet has a unique language that is hypertextual in any part of the world. It is like mathematics, which is the same all over the world.

Furthermore, (14) suggests that one of the main purposes of education is obviously the development of competencies. Competence from the educational point of view is the ability to apply knowledge, as efficiency, efficacy and satisfaction on some aspect of personal, social, natural or symbolic reality. Each competence is understood as the integration of three types of knowledge: conceptual (knowing), procedural (knowing how to do) and attitudinal (being).

1.5 Competences:

In order to plan and think about teaching and learning today, it is essential for teachers to develop certain skills and competencies.

According to (15), all competencies require the mastery of specific information, at the same time as they require the development of a series of skills derived from information processes.

For example, to search for information on Google, certain skills are required: what words to write, how to link them, select the type of font.

(16) point out some characteristics that define when a subject is considered to be technologically competent:

A person is technologically competent to the extent that he/she can perform an autonomous act, being able to make decisions without outside intervention, to carry out personal projects, to act in the whole situation independently defending his/her actions, among others. An interactive use of tools or resources, using language, symbols, texts, information and technology and an adequate functioning in heterogeneous groups, maintaining interrelationships with others, collaborating, managing and resolving conflicts.

Being competent, he/she is able to: know basic programs and applications to make use of the different possibilities offered by the Web, search and find relevant information on the Net, develop criteria to value that information, considering quality indicators, work in a team to elaborate new sources, make decisions based on contrasted information, with portability, mobility and the growing increase of wireless connectivity, the relationship with technology is modified, showing that ubiquity is already inserted in society.

The overabundance of information and devices is such that it is difficult to use them to integrate them into knowledge and the educational task. Therefore, sharing with other teachers broadens the spectrum of possibilities and, with it, personal and professional growth.

There are examples of practices that have been carried out in different places, such as organizing networks of novice teachers to share their practices, positive or negative, with a sense of community, which allows them to be in contact and committed to similar objectives.

For (17), technology is a priority objective of teacher professional development and one more means for it to be achieved. (...) Distance learning, non-presential collaborative work, online learning communities, access to unlimited databases are only some of the possibilities that technology brings to the teaching profession and that enrich the possibilities for its development.

A modular digital competence program is a sequence of relevant activities to address specific skills around digital competences. Modular work has been chosen as it enables the systematisation and reinforcement of specific learning.

For (18), digital competences will be the set of knowledge and skills that enable the safe and efficient use of information and communication technologies.

Digital skills are defined as the critical and confident use of information society technologies for work, study, communication and recreation. It relies on the skills of using computers to retrieve, evaluate, store, produce, present and exchange information, as well as to communicate and participate in collaborative networks via the Internet. (18).

It involves a set of knowledge, skills, attitudes and strategies that are required for the use of digital media and information and communication technologies.

The author in (18) points out that digital competence involves the confident and critical use of information society technologies (IST) for work, leisure and communication. It is underpinned by basic ICT skills: the use of computers to obtain, evaluate, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet.

Therefore, by training managers through workshops on digital competencies, it generates a large-scale communication capacity, which they can use for a more efficient educational management in their institution.

1.6 Dependent variable: Good managerial performance according to the Ministry of Education:

According to (19), managerial performance begins in pedagogical management. Management, in an environment such as the school where educational processes cross various actions and organizational spaces, needs to have a reference that reorients the work of principals in all its dimensions: from the classroom to institutional life, from the "strictly pedagogical" to the various organizational issues that make possible or not a teaching-learning process with certain characteristics, moving from administrative work to work centered on pedagogical processes and within the framework of a proposal for good performance.

School reform requires configuring the management role from the perspective of a leader who influences, inspires, and mobilizes the actions of the education community in terms of pedagogy. This is a necessary and pertinent option in order to create a school that is organized and led in terms of learning, and that for this purpose is able to link the work of teachers, a welcoming school climate, and the participation of families and the community.

According to (20), research on effective schools focuses on the need to place the educational institution and students at the center of the design of educational policies, thus strengthening teaching processes, the quality of leadership, and school management, in processes as complex as the achievement of school autonomy or the strengthening of social participation.

In this sense, the school proposes to achieve a set of desirable results, both at the level of student learning as well as at the level of the school itself. Thus, the school model is organized into three components whose synergy will make it possible to achieve the expected results in terms of quality learning for all students: first, the management of pedagogical processes; second, democratic and intercultural coexistence; and third, the link between the school, the family and the community.

- *Dimension 1: The management of pedagogical processes:* "This is defined as the set of planned, organized, and inter-related actions undertaken by the staff of a school -led by the management team- in order to promote and guarantee the achievement of learning. In this scenario, schools assume responsibility for managing change in pedagogical processes" (19).

Within the framework of an ethical and participatory culture, a common vision of the entire educational community is built that inspires, guides and accompanies the strengthening of capacities and the commitment of its members to create favorable conditions and to take responsibility for the achievement of student learning.

The school also redefines its organization to make it more open, informed and democratic, promoting student ownership and adapting to the needs of its students and the context. In addition, it continuously and collectively self-evaluates itself in order to draw lessons based on its own experience.

- *Dimension 2. Democratic and intercultural coexistence:* This is defined as the set of conditions that allow the exercise of democratic and civic participation of all students and that promotes the construction of a safe, welcoming and collaborative environment. Thus, interpersonal relations -based on good treatment- are recognized as interactions that develop between members of the educational community with an intercultural and inclusive character with respect for diversity.

These strengthen emotional bonds from a democratic organizational model that considers effective communication as a timely and relevant practice. In the school, consensual norms are constructed and conflict is managed as a learning opportunity to prevent, deal with and contain possible situations of contradiction and/or confrontation. In this way, the development of personal skills and favorable attitudes is promoted in order to achieve a climate that benefits the development of fundamental learning.

- *Dimension 3. The link between school, family and community:* This implies that the school gives a leading role to the other two actors, establishing an alliance that contributes both to the improvement of learning and to the promotion of local development. This link is part of a shared responsibility. For this reason, in school management -focused on pedagogical processes- it is key to strengthen family participation through various democratic spaces, directing their contributions toward the achievement of learning and the comprehensive training of students based on their own role.

Likewise, the school is encouraged to have an open attitude towards the community, as a strategy that allows it to share its resources and learning in order to promote mutual collaboration, establishing agreements and alliances that contribute to the construction of a common development project. Local knowledge is incorporated into the pedagogical processes, thus facilitating joint and organized work with community members.

Therefore, the strategy is to generate and trigger a set of processes in the field of school management, coexistence and school relations with parents and the community, aimed at:

- Renew and refocus the practices of the actors involved.
- Develop the necessary skills.
- To provide protocols and instruments for the development of innovative actions and routines.
- Establish support, monitoring and evaluation mechanisms for key processes.
- Disseminate relevant information about the meaning of the new practices and the expected results.
- Build basic consensus in relation to the new mission of the school and the characteristics of the teaching that is provided.

How to define a person who is competent in ICT. To be digitally competent you need to develop a set of knowledge, skills and attitudes organized around five broad areas:

Information, information literacy and data processing: identifying, locating, retrieving, storing, organizing and analyzing digital information, assessing its purpose and relevance.

Communication and collaboration: communicating in digital environments, sharing online resources, connecting and collaborating with others using digital tools, interacting and participating in communities and networks; intercultural awareness.

The creation of digital content: creating and editing new content (texts, images, videos...), integrating knowledge and reworking previous content, making artistic productions, multimedia content and computer programming, knowing how to apply rights.

Security: personal protection, data and digital identity protection, security use, safe and sustainable use.

Problem solving: identifying digital needs and resources, making decisions to select appropriate digital tools according to need or purpose, solving conceptual and technical problems through digital means, creative use of technology, updating one's own and others' competence.

2. Identification of Variables:

According to (21), he points out that "a variable is some property that is assigned to the phenomena or events of reality susceptible of assuming two or more values". In other words, it will be a variable insofar as it has the capacity to vary, to assume diverse values.

2.1 Independent variable:

Training Program for Executives in Digital Competencies in the Framework of Good Performance.

Digital Competences Program.

MODULE I: Initial technological literacy.

MODULE II: Use of basic digital tools.

MODULE III: Collaborative work in synchronous and asynchronous mode.

MODULE IV: Participation and production in virtual spaces.

2.2 Dependent variable:

Improvement of the performance of directors of the Networks 13, 14 and 15 of the UGEL 02.

Sub-variables or dimensions:

- Improvement of the management of pedagogical processes.
- Improvement of democratic and intercultural coexistence.
- Improving the link between school, family and community.

3. Research Hypothesis

3.1 General hypothesis:

The application of the Training Program for Managers in Digital Competencies in the Framework of Good Performance is a factor that significantly influences the improvement of the performance of managers of Networks 13, 14 and 15 of UGEL 02.

3.2 Specific hypotheses:

The implementation of the training program for managers in digital competencies in the framework of good performance, is a factor that significantly influences the improvement of the management of the pedagogical processes of managers of Networks 13, 14 and 15 of UGEL 02.

The application of the training program for managers in digital competencies in the framework of good performance is a factor that significantly influences the improvement of democratic and intercultural coexistence of managers of Networks 13, 14 and 15 of UGEL 02.

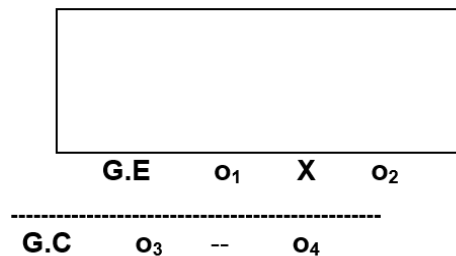
The implementation of the training program for managers in digital competencies in the framework of good performance is a factor that significantly influences the improvement of the link between school, family and the community of managers of Networks 13, 14 and 15 of UGEL 02.

4. Methodology

The research is applied-type, because it was oriented to the manipulation of variables: one of cause and another of effect, to compare the factors that, related to the good managerial performance, from the training in digital competences.

It is technological because it considers the use of technological resources (digital competences) during its managerial performance, hoping for its viability.

It corresponds to the quantitative approach, since the data collected will be treated statistically, under a numerical treatment, with a quasi-experimental design and is explained by the following diagram:



Where:

- G.E** : Experimental Group - 21 directors
- G.C** : Control Group - 22 directors
- O1 and O3**: PreTest - Checklist on Entry
- O2 and O4**: PostTest - Exit Checklist
- X** : Digital Skills Programme

4.1 Population and Sample

The population consisted of a total of 43 directors of networks 13, 14 and 15 of UGEL 02 of Metropolitan Lima.

The sample is of a non-probabilistic type since no statistical method or technique has been used for its selection, but only by the researcher's criteria.

Thus, the sample consisted of the total study population, distributed in two groups. A control group and an experimental group, being:

- Control group: 22 directors
- Experimental group: 21 directors
- n= 43 directors.

For this research, survey technique was employed for data collection. The instrument used in the research was a questionnaire. The validity of the instrument was done by expert judgment technique, as the items were evaluated on their internal consistency, under the opinion of experts in the topic. In order

to obtain the reliability value, the KR-20 statistical test called Kuder-Richardson was used, which by means of a pilot test on 15 directors offers a KR-20 value of 0.908, indicating that the instrument has high reliability.

4.2 Data Processing

The procedures followed are:

- The sessions and their practical implementation materials were designed.
- The study sample was selected and informed about their participation in the research.
- The measurement instruments were designed, validated and subjected to reliability tests before being applied.
- Input tests were applied prior to experimentation with digital competencies.
- The sessions were conducted only with the experimental group, while the control group continued in their routine methods.
- The exit tests were applied to the two groups, both experimental and control.
- Statistical techniques (descriptive and inferential) were applied to test the effect of the modular program (experimental treatment on digital skills).

5. Results and Discussion

5.1 Results

Table 1.

Level of good managerial performance in the pretest and posttest in the control and experimental groups.

Level	Group							
	Control				Experimental			
	Pretest		Posttest		Pretest		Posttest	
	N	%	n	%	N	%	n	%
Basic	1.0	4.5	0.0	0.0	5.0	23.8	0.0	0.0
Competent	21.0	95.5	21.0	95.5	16.0	76.2	0.0	0.0
Featured	0.0	0.0	1.0	4.5	0.0	0.0	21.0	100.0
Total	22.0	100.0	22.0	100.0	21.0	100.0	21.0	100.0

From Table 1, it can be seen that out of the total number of managers belonging to the experimental group, 76.2% present a competent level of good performance before Digital Competencies Program in the framework of good managerial performance, while after the Digital Competencies Program in the framework of good managerial performance, 100% of presented outstanding level of good performance.

Table 2.

Level of good managerial performance according to the management of pedagogical processes in the pretest and posttest in the control group and experimental group.

Level	Group							
	Control				Experimental			
	Pretest		Posttest		Pretest		Posttest	
	N	%	n	%	n	%	n	%
Basic	8.0	36.4	7.0	31.8	9.0	42.9	0.0	0.0
Competent	14.0	63.6	14.0	63.6	12.0	57.1	1.0	4.8
Featured	0.0	0.0	0.0	0.0	0.0	0.0	20.0	95.2
Total	22.0	100.0	21.0	95.5	21.0	100.0	21.0	100.0

From Table 2, it can be seen that of the total number of managers belonging to the experimental group, 57.1% present a competent level of good performance according to the management of pedagogical processes before Program on digital competencies in the framework of good managerial performance, while after the Program on digital competencies in the framework of good managerial performance, 95.2% of presented outstanding level of good performance according to The management of pedagogical processes.

Table 3.

Level of good managerial performance according to democratic and intercultural coexistence in the pretest and posttest in the control group and experimental group.

Level	Group							
	Control				Experimental			
	Pretest		Posttest		Pretest		Posttest	
	n	%	n	%	n	%	n	%
Basic	3.0	13.6	1.0	4.5	8.0	38.1	0.0	0.0
Competent	19.0	86.4	20.0	90.9	13.0	61.9	0.0	0.0
Featured	0.0	0.0	1.0	4.5	0.0	0.0	21.0	100.0
Total	22.0	100.0	22.0	100.0	21.0	100.0	21.0	100.0

From Table 3, it is observed that of the total number of managers belonging to the experimental group, 61.9% present a competent level of good performance according to democratic and intercultural coexistence before the Program on digital competences in the framework of good managerial performance, while after the Program on digital competences in the framework of good managerial performance, 100% of presented outstanding level of good performance according to Democratic and intercultural coexistence.

Table 4.

Level of good managerial performance according to the link between school, family and community in the pretest and posttest in the control and experimental groups.

Level	Group							
	Control				Experimental			
	Pretest		Posttest		Pretest		Posttest	
	n	%	n	%	n	%	n	%
Basic	0.0	0.0	0.0	0.0	9.0	42.9	0.0	0.0
Competent	21.0	95.5	22.0	100.0	12.0	57.1	0.0	0.0
Featured	1.0	4.5	0.0	0.0	0.0	0.0	21.0	100.0
Total	22.0	100.0	22.0	100.0	21.0	100.0	21.0	100.0

From Table 4, it can be seen that of the total number of managers belonging to the experimental group, 57.1% present a competent level of good performance according to the link between school, family and community before the Program on digital competencies in the framework of good managerial performance, while after the Program on digital competencies in the framework of good managerial performance, 100% of them presented an outstanding level of good performance according to the link between school, family and community.

5.2 Hypothesis Testing

5.2.1 General hypothesis

The application of the Training Program for Managers in Digital Competencies in the Framework of Good Performance is a factor that significantly influences the improvement of the performance of managers of Networks 13, 14 and 15 of UGEL 02.

Table 5.

Comparison of means of good managerial performance score in control and experimental group according to pretest and posttest.

	N	Pretest		n	Posttest		Wilcoxon	p
		Media	S		Media	S		
Control	22	23.5	1.4	22	25.7	6.7	1.65	0.09
Experimental	21	22.2	1.3	21	52.8	2.4	-4.02	0.000*
Mann Whitney		-2.97			-5.24			
P		0.03*			.000*			

Significant differences exist

From Table 5, it is observed in the analysis of related samples applying the Wilcoxon test that in the experimental group before the program the mean score is 22.2±1.3 while the mean of the good performance score after the program is 52.8±2.4. It is also observed that there is a statistically significant increase after the program of the good performance score in the experimental group (p<0.05).

Also, it is appreciated in the analysis of independent samples applying the Mann Whitney test, it is observed that in the pretest the mean of the good performance score of the control group is $25,7\pm 6,7$ while the mean of the good performance score in the experimental group is $52,8\pm 2,4$. It is also observed that after the program there is a significantly higher mean ($p < 0.05$) of the good performance score in the experimental group in relation to the control group.

5.2.2 Specific hypothesis

- Hypothesis 1

The implementation of the training program for managers in digital competencies in the framework of good performance, is a factor that significantly influences the improvement of the management of the pedagogical processes of managers of Networks 13, 14 and 15 of UGEL 02.

Table 6.

Comparison of means of the pedagogical processes management score in the control and experimental groups according to the pretest and posttest.

	Pretest			Posttest			Wilcoxon	p
	n	Media	S	n	Media	S		
Control	22	7.7	0.6	21	8.4	2.9	4.1	0.000*
Experimental	22	7.8	0.8	21	18.6	2.1	4.028	0.000*
Mann Whitney		-0.02			-5.2			
P		0.97			0.000*			

Significant differences exist

From Table 6, it can be seen in the analysis of related samples applying the Wilcoxon test that in the experimental group before the program, the mean score of the management of pedagogical processes is 7.8 ± 0.8 , while the mean score of the management of pedagogical processes after the program is 18.6 ± 2.1 . Likewise, it can be seen that there is a statistically significant increase after the program of the good performance in the experimental group ($p < 0.05$).

In addition, it is observed in the analysis of independent samples applying the Mann Whitney test that the mean score of the management of pedagogical processes in the control group is 8.4 ± 2.9 , while the mean score of the management of pedagogical processes in the experimental group is 18.6 ± 2.1 . It is also appreciated that after the program there is a significantly higher mean ($p < 0.05$) of the pedagogical processes management score in the experimental group in relation to the control group.

- Hypothesis 2

The application of the training program for managers in digital competencies in the framework of good performance is a factor that significantly influences the improvement of democratic and intercultural coexistence of managers of Networks 13, 14 and 15 of UGEL 02.

Table 7.

Comparison of means of democratic and intercultural coexistence score in the control and experimental groups according to pretest and posttest.

		Pretest			Posttest		Wilcoxon	p
	N	Media	S	n	Media	S		
Control	22	8.2	0.8	22	9.0	2.1	-4.06	0.000*
Experimental	21	7.8	0.8	21	18.5	1.5		
Mann Whitney		-1.7			-5.4			
P		0.07			0.000*			

Significant differences exist

From Table 7, it can be seen in the analysis of related samples applying the Wilcoxon test that in the experimental group before the program the mean of the democratic and intercultural coexistence score is 7.8 ± 0.8 while the mean of the democratic and intercultural coexistence score after the program is 18.5 ± 1.5 . It is also observed that there is a statistically significant increase in the mean of the democratic and intercultural coexistence score after the good performance program in the experimental group ($p < 0.05$). However, it is also observed in the analysis of independent samples applying the Mann Whitney test that in the pretest the mean of the democratic and intercultural coexistence score in the control group is 9.0 ± 2.1 , while the mean of the democratic and intercultural coexistence score in the experimental group is 18.5 ± 1.5 . Also, it is appreciated that after the program there is a significantly higher mean ($p < 0,05$) of the democratic and intercultural coexistence score in the experimental group in relation to the control group.

- *Hypothesis 3*

The implementation of the training program for managers in digital competencies in the framework of good performance is a factor that significantly influences the improvement of the link between school, family and the community of managers of Networks 13, 14 and 15 of UGEL 02.

Table 8.

Comparison of means of the school-family-community bonding score in the control and experimental groups according to pretest and posttest.

		Pretest			Posttest		Wilcoxon	p
	n	Media	S	n	Media	S		
Control	22	7.6	0.7	22	8.2	1.9	-1.2	0.21
Experimental	21	6.7	0.7	21	15.7	1.2	-4	0.000*
Mann Whitney		5.23			-5.24			
P		0.000*			.000*			

Significant differences exist

From Table 8, it can be seen in the analysis of related samples applying the Wilcoxon test that in the experimental group before the program, the mean of the school-family-community bonding score is 6.7 ± 0.7 while the mean of the school-family-community bonding score after the program is 15.7 ± 1.2 . It can also be seen that there is a statistically significant increase in the mean of the democratic and intercultural coexistence score after the good performance program in the experimental group ($p < 0.05$). In addition, it is observed in the analysis of independent samples applying the Mann Whitney test that in the

pretest the mean score of the bond between school, family and community in the control group is 8.2 ± 1.9 , while the mean score of the bond between school, family and community in the experimental group is 15.7 ± 1.2 . Likewise, it can be seen that after the program there is a significantly higher mean ($p < 0.05$) of the democratic and intercultural coexistence score in the experimental group in relation to the control group.

5.3 Discussion

One of the purposes of this study is to determine the effects of the Digital Skills Program and, on the other hand, to evaluate if there are significant differences in this variable between the control and experimental groups.

In reference to the general objective, the descriptive results point out that indicate that of the total number of managers belonging to the experimental group 76.2% present a competent level of good performance before Program on digital competencies in the framework of good managerial performance, while after the Program on digital competencies in the framework of good managerial performance, 100% of presented outstanding level in good performance. Also, in the hypothesis test is evidenced in the analysis of related samples by applying the Wilcoxon test it is observed that in the experimental group before the program the mean score is 22.2 ± 1.3 while the mean score good performance after the program is 52.8 ± 2.4 . It is also observed that there is a statistically significant increase after the program of the good performance score in the experimental group ($p < 0.05$).

Likewise, it is observed in the analysis of independent samples applying the Mann Whitney test, that in the pretest the mean of the good performance score of the control group is 25.7 ± 6.7 , while the mean of the good performance score in the experimental group is 52.8 ± 2.4 . Also, it is appreciated that after the execution of the program there is a significantly higher mean ($p < 0.05$) of the good performance score in the experimental group in relation to the control group. This coincides with Arrieta (2017) who found that the ICT integration workshop contributes to strengthen the digital competence of its participants. Mayurí et al. (2016) and Acevedo (2018) found that digital competencies are related to teaching performance, while Perlaza (2019) found that digital competencies do not influence teachers' professional performance.

In relation to the first specific objective, the descriptive results show that of the total number of managers belonging to the experimental group, 57.1% present a competent level of good performance according to the management of pedagogical processes before the Program on digital competences in the framework of good managerial performance, while after the Program on digital competences in the framework of good managerial performance, 95.2% of presented an outstanding level of good performance according to the management of pedagogical processes. It can be seen in the analysis of related samples applying the Wilcoxon test, that in the experimental group before the program the mean score of the management of pedagogical processes is 7.8 ± 0.8 while the mean score of the management of pedagogical processes after the program is 18.6 ± 2.1 . It is also appreciated that there is a statistically significant increase after the program of good performance in the experimental group ($p < 0.05$). In the analysis of independent samples applying the Mann Whitney test, it is observed that in the pretest, the mean score of the management of pedagogical processes in the control group is 8.4 ± 2.9 , while the mean score of the management of pedagogical processes in the experimental group is 18.6 ± 2.1 . It can also be seen that after the program there is a significantly higher mean ($p < 0.05$) of the pedagogical processes management score in the experimental group in relation to the control group. Arrieta (2017) found that

the ICT integration workshop contributes to the strengthening of digital competencies in the participants of the workshops. Perlaza (2019) found that digital competencies do not influence the professional performance of teachers.

On the second specific objective, the descriptive results show that of the total number of managers belonging to the experimental group, 61.9% present a competent level of good performance according to the democratic and intercultural coexistence before Program on digital competences in the framework of good managerial performance, while after the Program on digital competences in the framework of good managerial performance, 100% of presented outstanding level in good performance according to the democratic and intercultural coexistence. In the analysis of related samples applying the Wilcoxon test, it is observed that in the experimental group before the program, the mean of the democratic and intercultural coexistence score is 7.8 ± 0.8 , while the mean of the democratic and intercultural coexistence score after the program is 18.5 ± 1.5 . It is also observed that there is a statistically significant increase in the mean of the democratic and intercultural coexistence score after the program of good performance in the experimental group ($p < 0.05$). In the analysis of independent samples applying the Mann Whitney test, it is observed that in the pretest the mean of the democratic and intercultural coexistence score in the control group is 9.0 ± 2.1 , while the mean of the democratic and intercultural coexistence score in the experimental group is 18.5 ± 1.5 . It can also be seen that after the program there is a significantly higher mean ($p < 0.05$) of the democratic and intercultural coexistence score in the experimental group in relation to the control group. Arrieta (2017) found that the ICT integration workshop contributes to the strengthening of digital competencies in the participants of the workshops. Perlaza (2019) found that digital competencies do not influence the professional performance of teachers.

In relation to the third specific objective, the descriptive results show that of the total number of managers belonging to the experimental group, 57.1% present a competent level of good performance according to the link between school, family and community before the Program on digital competences in the framework of good managerial performance, while after the Program on digital competences in the framework of good managerial performance, 100% of presented outstanding level of good performance according to the link between school, family and community. It was observed in the analysis of related samples applying the Wilcoxon test that in the experimental group before the program, the mean score of the link between school, family and community is 6.7 ± 0.7 , while the mean score of the link between school, family and community after the program is 15.7 ± 1.2 . It is also appreciated that there is a statistically significant increase in the mean of the democratic and intercultural coexistence score after the program of good performance in the experimental group ($p < 0.05$). In the analysis of independent samples, applying the Mann Whitney test, it was observed that in the pretest, the mean of the school-family-community bond score in the control group was 8.2 ± 1.9 , while the mean of the school-family-community bond score in the experimental group was 15.7 ± 1.2 . It is also observed that after the application of the Program, there is a significantly higher mean ($p < 0.05$) of the democratic and intercultural coexistence score in the experimental group in relation to the control group. Arrieta (2017) found that the ICT integration workshop contributes to the strengthening of digital competencies in the participants of the workshops. In contrast, Perlaza (2019) found that digital competencies do not influence the professional performance of teachers.

6. Conclusions and Recommendations

6.1 Conclusions

1. In reference to the general objective, the descriptive results indicate that of the total number of managers belonging to the experimental group, 76.2% present a competent level of good performance before the program on digital competencies in the framework of good managerial performance, while after the program on digital competencies in the framework of good managerial performance, 100% of presented outstanding level in good performance. In the hypothesis test in the analysis of related samples by applying Wilcoxon test in the experimental group before the program, the mean score is 22.2 ± 1.3 , while the mean score good performance after the program is 52.8 ± 2.4 . There is a statistically significant increase after the program of the good performance score in the experimental group ($p < 0.05$). In the analysis of independent samples applying the Mann Whitney test, it is observed that in the pretest the mean of the good performance score of the control group is 25.7 ± 6.7 , while the mean of the good performance score in the experimental group is 52.8 ± 2.4 . Finally, there is a significantly higher mean ($p < 0.05$) of the good performance score in the experimental group in relation to the control group.

2. In relation to the first specific objective, the descriptive results show that of the total number of managers belonging to the experimental group, 57.1% present a competent level of good performance according to the management of pedagogical processes before the program on digital competences in the framework of good managerial performance, while after the program on digital competences in the framework of good managerial performance, 95.2% of presented outstanding level of good performance according to the management of pedagogical processes. In the analysis of related samples applying the Wilcoxon test, it is observed that in the experimental group before the program, the mean score of the management of pedagogical processes is 7.8 ± 0.8 , while the mean score of the management of pedagogical processes after the program is 18.6 ± 2.1 . It was found that there is a statistically significant increase after the program of good performance in the experimental group ($p < 0.05$). In the analysis of independent samples applying the Mann Whitney test, it is observed that in the pretest, the mean score of the management of pedagogical processes in the control group is 8.4 ± 2.9 , while the mean score of the management of pedagogical processes in the experimental group is 18.6 ± 2.1 . Finally, there is a significant ($p < 0.05$) higher mean of the pedagogical processes management score in the experimental group in relation to the control group.

3. On the second specific objective, the descriptive results show that of the total number of managers belonging to the experimental group, 61.9% present a competent level of good performance according to democratic and intercultural coexistence before the program on digital competences in the framework of good managerial performance, while after the program on digital competences in the framework of good managerial performance, 100% of presented outstanding level of good performance according to democratic and intercultural coexistence. In the analysis of related samples applying the Wilcoxon test, it is observed that in the experimental group before the program, the mean of the democratic and intercultural coexistence score is 7.8 ± 0.8 , while the mean of the democratic and intercultural coexistence score after the program is 18.5 ± 1.5 . There is a statistically significant increase in the mean of the democratic and intercultural coexistence score after the good performance program in the experimental group ($p < 0.05$). In the analysis of independent samples applying the Mann Whitney test, it is observed that in the pretest the mean of the democratic and intercultural coexistence score in the control group is 9.0 ± 2.1 , while the mean of the democratic and intercultural coexistence score in the experimental group is

18.5±1.5. Finally, there is a significantly higher mean ($p<0.05$) of the democratic and intercultural coexistence score in the experimental group in relation to the control group.

4. In relation to the third specific objective, the descriptive results show that of the total number of managers belonging to the experimental group, 57.1% present a competent level of good performance according to the link between school, family and community before the Program on digital competences in the framework of good managerial performance, while after the Program on digital competences in the framework of good managerial performance, 100% of presented outstanding level of good performance according to the link between school, family and community. In the analysis of related samples applying the Wilcoxon test, it is observed that in the experimental group before the program the mean score of school-family-community linkage is 6.7 ± 0.7 , while the mean score of school-family-community linkage after the program is 15.7 ± 1.2 . There is a statistically significant increase in the mean of the democratic and intercultural coexistence score after the good performance program in the experimental group ($p<0.05$). In the analysis of independent samples applying the Mann Whitney test, it was observed that in the pretest, the mean of the school-family-community bonding score in the control group is 8.2 ± 1.9 , while the mean of the school-family-community bonding score in the experimental group is 15.7 ± 1.2 . Finally, there is a significantly higher mean ($p<0.05$) of the democratic and intercultural coexistence score in the experimental group in relation to the control group.

6.2 Recommendations

1. In relation to the purpose of the research and the conclusion reached, it was found that managers can strengthen their digital competencies by attending programs on digital competencies in the framework of good managerial performance organized by the governing body of the education sector MINEDU.

2. It is suggested that the Training Programs for Executives in Digital Competences show strategies and activities that promote the improvement of the management of the pedagogical processes developed in the educational institutions.

3. It is suggested that Training Programs for Executives in Digital Competences show strategies and activities that promote the improvement of democratic and intercultural coexistence in educational institutions.

4. It is suggested that the Digital Competencies Training Programs for Directors show strategies and activities that promote the improvement of the link between the school, the family and the community.

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