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Talleres metodológicos para el desarrollo de habilidades en el uso de herramientas tecnológicas para docentes

Methodological workshops for the development of skills in the use of technological tools for teachers

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Palabras claves:
Herramientas tecnológicas, enseñanza – aprendizaje, docentes, comunicación

Resumen

Introducción: Esta investigación se la hace pensada en mejorar el proceso de enseñanza-aprendizaje mediante el uso de la tecnología, siendo esta una herramienta de gran valor en la actualidad. Mediante una observación y encuesta se pudo notar el escaso uso y conocimiento de recursos tecnológicos por parte de los docentes de la Unidad Educativa Severo Espinosa, siendo este el punto de partida para motivar e incursionar a educadores a aprovechar las herramientas digitales, ofreciente al estudiantado entornos creativos y un proceso de enseñanza más eficiente e innovador. **Objetivos:** Por consiguiente, el objetivo se centra en capacitar a docentes de la Unidad Educativa Severo Espinoza acerca del uso y aplicación de las herramientas tecnológicas significativas para el proceso enseñanza – aprendizaje. **Metodología:** La investigación obedece un enfoque epistemológico mixto, no experimental de alcance descriptivo y de cohorte transversal, se recolectaron los datos a través de encuestas dirigidas a los docentes donde mediante un análisis estadístico descriptivo se establecieron lo principales hallazgos que sirvieron de base para la generación de una propuesta en torno al problema abordado. **Resultados:** Se evidenció que los docentes están predispuestos, por estar el día con la tecnología y que, con las diferentes aplicaciones tecnológicas despertarían la curiosidad y la motivación en los estudiantes y así se mejoraría dicho proceso de enseñanza-aprendizaje. **Conclusiones:** Es indispensable que se use la tecnología para el aprendizaje y la adquisición del conocimiento en cada una de las asignaturas para mejorar el proceso de enseñanza aprendizaje y es importante que los docentes enseñen las diferentes asignaturas con el apoyo de recursos didácticos tecnológicos. **Área de estudio general:** Educación. **Área de estudio específica:** Competencias tecnológicas.

Keywords:
Technological tools, teaching-learning, teacher, communication

Abstract

Introduction: This research is intended to improve the teaching-learning process through the use of technology, this being a tool of great value today. Through an observation and survey, it was possible to notice the limited use and knowledge of technological resources by the teachers of the Severo Espinosa Educational Unit, this being the starting point to motivate and encourage educators to take advantage of digital tools, offering students environments

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creativity and a more efficient and innovative teaching process. Objectives: Therefore, the objective focuses on training teachers from the Severo Espinoza Educational Unit about the use and application of significant technological tools for the teaching-learning process. Methodology: The research obeys a mixed, non-experimental epistemological approach with a descriptive and transversal cohort scope. The data were collected through surveys directed at teachers where, through a descriptive statistical analysis, the main findings that served as the basis for the study were established. generation of a proposal around the problem addressed. Results: It was evident that teachers are predisposed, because they are up to date with technology and that, with the different technological applications, they would awaken curiosity and motivation in the students and thus the teaching-learning process would be improved. Conclusions: It is essential that technology be used for learning and the acquisition of knowledge in each of the subjects to improve the teaching-learning process and it is important that teachers teach the different subjects with the support of technological teaching resources. General Study Area: Education. Specific study area: Technological competencies.

Introduction

This research will focus on the learning of basic education students in pavilion 2 of the Severo Espinosa Educational Unit of the Ducur parish, due to the advancement of technology. In addition, being a very useful tool in these times that better take advantage of it for the benefit of the learning of our students, this use will enhance learning in students, since many times being something new they like the novelty. This work will allow students not to miss many classes and awaken curiosity to learn more, something new and fun.

This research work is aimed at the basic education teaching staff of the Severo Espinosa Educational Unit, so that the use of technological tools is applied in the teaching-learning process, the main motivation will be the favorable result obtained when applying it.

Based on the results obtained, it will be possible to verify whether technology in students will have significant results in their learning with emphasis on the use of the same by creating a digital educational culture.

Therefore, this proposal is made to raise awareness among teaching staff and provide modern, fun, enjoyable and quality learning to students and thereby improve the sciences taught by promoting a culture in the use of technological tools. With this proposal, we will be contributing academically to the generation of new skills in the application of the use of digital instruments, the results of which may become a high-impact scientific precedent to implement them in all areas of knowledge and jointly forge new and updated wisdom.

In this context, this project will contribute to students acquiring understanding in each of the stages of the teaching-learning process, making basic training meaningful at all levels of basic education, improving academic instruction in the Educational Unit.

This research is carried out to enhance learning in students through the use of technological tools by the basic education teaching staff of the Severo Espinosa Educational Unit. Nowadays, the use of technology is of great importance since today we have it at our fingertips, in addition, it will facilitate the teaching-learning process, allowing us a favorable result in the learning of our students; All teachers must have various skills in the management of technological tools and digital applications that will allow effective interaction and communication between the teacher and the student. In my opinion, I think that technology should not only focus on the teacher who works in the virtual environment, but also on the teacher who imparts knowledge on a daily basis in the face-to-face setting, because he or she makes continuous use of these support tools in their planning, microcurricular projects and study program.

State of the Art

Technological tools in general are of great support when it comes to imparting skills to our students as they help improve the quality of teaching-learning, through the application of various tools, since at present education becomes more competitive and to reach levels in line with the time we have to prepare ourselves and what better than to support ourselves with technological tools, as it also tells us:

Sanchez et al. (2014)As we make use of these resources at every moment, there is no doubt that all these tools have become increasingly indispensable, especially for the different educational organizations around the world, which currently face the challenge of using Information and Communication Technologies to provide their students with the necessary tools and knowledge they require in the 21st century.(p. 185).

As the authors argue, the use of technological tools has become indispensable, which is why we can observe their use at all times and everywhere, without any discrimination, and what is better if we give it a good use, such as the application of different technological tools in education, with the aim of optimizing learning processes.

Nowadays we have a number of digital applications on the Internet which facilitate different tasks in a practical way and in real environments, for all the basic areas of education, thus also confirming: "We can say then that a teaching material is the set of material means that intervene and facilitate the teaching-learning process, these materials can be both physical and virtual"(Sánchez et al., 2014 p. 188).

Teachers spend a lot of time at home selecting teaching materials. Nowadays, this is a thing of the past because we can just log on to Google and find the material that matches the skills we want to develop, according to: “Students can use technology because it can greatly enhance a student’s learning by helping them process information in a comprehensive manner.”(Sánchez et al., 2014, p. 189).

It is important to analyze that in these times there are many students who know how to use technology, that is why, teachers have to master the basic concepts, that is why it is essential that the teaching staff is in constant training, especially in technology, acquiring new knowledge in technological applications.

According toGallego-Arrufa et al. (2010),lDigital skills have been associated with two key objectives in the preparation of future teachers: on the one hand, knowing and reflecting on the technological context in which their students operate, and on the other, developing new skills that allow them to use technologies to promote meaningful learning.(p. 3).

This is why teachers must always have the attitude of a researcher and transformer, constantly acquiring new knowledge, since they are the spokespersons of knowledge, and students build their own concepts, discover facts and take ownership of their knowledge, solve problems, develop critical thinking, use their creativity, and find solutions to problems. As he says: “Ultimately, digital competence involves making regular use of available technological resources to solve real problems efficiently.”(Gallego-Arrufa et al., 2010, p. 16).

In recent years we have experienced rapid technological advances that have profoundly changed societies and labor markets in Latin America and the world, our lives revolve around technology, what better than to motivate our students at an early age as stated in the author's text saying that: The student is a generator of new knowledge from his previous knowledge or known knowledge(Cueva-Gaibor & Cueva-Gaibor, 2020, p. 346).

Nowadays there are teachers who still use the traditional teaching-learning method, perhaps because they are unaware of the use of some technological tools in the educational field or do not know how to apply them or simply the Institution lacks many technological resources as stated by Moreno-Padilla (2019), in his view, the teaching staff recognizes as an urgent need to train in the proper use of these tools, because the new

curriculum contemplates them as a pillar of their professional training, in addition they always ask us for reports, projects, matrices and digital planning, that is why I believe that the teaching staff of all educational institutions must be prepared, trained in the use of technological tools and use them in the teaching-learning process with students.

In recent years, Flores-Vivar and García-Peñalvo (2023) state that education has been affected, to such an extent that teachers have trained themselves, using digital tools, to continue with educational processes; in general, it is technology that has facilitated schooling to such an extent of reducing school dropouts, along the same lines there are students with little socialization with classmates, technology being the one that boosted the well-being, ease, and speed of the human being, technology has revolutionized the way we communicate, therefore its management must be supervised by adults.

Continuing education process for teachers

Teacher training in all pedagogical fields is essential for the transformation of education into a permanent search for the being and duty of the culture of the subjects of development. The demands for change in today's society and the hope that education will improve and contribute to overcoming economic and social limitations force educational institutions that train teachers to introduce innovation in their programs that guarantee wide-ranging and high-quality participation, linking classroom practice with academic training. In this way, teachers investigate their own practice and become direct protagonists in the construction of pedagogical knowledge. Advances in information and communication technologies allow the use of more interactive programs, and therefore, entertaining learning. "Learning in continuous training enables the conscious appropriation of the experience and culture developed by society, which implies not only knowledge, but also the practices and values associated with them."(Lalangui-Pereira et al., 2017, p. 33).

Here the author talks to us about the importance of continuous training, how we appropriate experience and culture, continuous training being so important since it is also the acquisition of attitudes, concepts, knowledge, skills that imply an improvement in learning that is then put into practice with students, and what better way to do it than with technology, since changes are increasingly faster.

Development of skills in the use of technological tools

Skill being the ability that we people have to do something correctly with ease, there are people who are born with extraordinary gifts to carry out this or that activity, thus there are people with great skill in the use of technological tools, technological skills are the attitudes and knowledge, mainly technical, practical that allow us to carry out tasks related to technology and the virtual environment.

According to Antúnez-Sánchez et al. (2020),Today's society and the influence of Information and Communication Technologies on Higher Education processes requires teachers to develop flexible, critical, creative and innovative thinking that allows them to assume new roles, increase information culture and use the skills to work on a scientific management process.

Over time, technological advances have influenced our society both negatively and positively, to such an extent that, as Porrúa-Perea (2022) indicates, technology has managed to satisfy us in many ways, with the creation of remote communication, video calls, great applications, smart devices, among others, but it has not yet been possible to extract its maximum benefit for the benefit of society and more specifically for education.

Although technology has brought many advances to daily life, it has contributed to many disenchantments that are increasingly developing in society, Technology is distancing us more and more from the people close to us while it brings us closer to those who are far away, since people are spending more time using it than sharing and appreciating moments with family and friends. Technology has influenced us in all aspects of life and is always in constant evolution, with new devices and inventions appearing that make our lives easier and easier.In the academic field it is used to store data, virtual classes, virtual books, etc. can also be given and it is alwaysis innovating inInclude technology in studies (Rodriguez-Terrones, 2022).

Technological tools

Technology has become a necessity nowadays, since thanks to it it is possible to adapt or direct different jobs, knowledge, serving to enhance and increase the results in our work activities, the world of today cannot be understood without a minimum of culture in technological knowledge, how information is transmitted and how it is accessed makes communication faster.

According toRomero et al. (2020)This is why technologies are conceived as mediators in the teaching and learning processes and assume that capabilities are not something fixed, but are also defined in the interaction between the student's capabilities and the tools they use in these processes..

Analyzing what the author tells us that technological tools must be conceived as mediators must be, that is, they must be integrated into the teaching processes, with the aim of improving the spaces, environments or teaching and learning environments, a professional must be able to transmit knowledge, must also have a vocation to teach, must have the ability to dialogue and know how to listen, educate by example, but without aggression, education is a complex phenomenon that involves two subjects, the student and the educator, the objective of the use of technological tools in teachers is to create an

environment of inter-learning in their students, use applications that are within reach of their students, adding exercises on their screens and online games, such as question tests, where it is only necessary to select, drag, join and edit the desired elements.

Importance of technological training for teachers

We are immersed in a digital age, where many times we depend on technology to carry out many activities, and as such the digital age has influenced the role of teaching-learning, technology has caused skills and competencies to be enhanced that years ago were impossible to perform, as it tells us:

ForCastro et al. (2007) and Antúnez-Sánchez et al. (2020), Education must meet the challenges posed by new opportunities opened up by technologies, which improve the way knowledge is produced, organised, disseminated, controlled and accessed. Equitable access to these technologies must be guaranteed at all levels of education systems.

In agreement with Villalba-Gómez (2016), technology contributes one of the most basic teaching functions, such as effective communication between teachers and their students, the assessment of learning in real time and making informed pedagogical decisions, or the exchange of best practices, which is why I believe it is very important for teachers to have this knowledge in the use of technology, since it can reduce the disproportionate time that teachers have to dedicate to administrative tasks and thus maximize their impact on their students' learning.

This is also what Castro et al. (2007) tells us:,that all this with good guidance from the teacher, without guidance students may present limitations such as: distractions, dispersion, loss of time, the collection of unreliable information, incomplete and superficial learning, very rigid dialogues, partial vision of reality, anxiety and dependence on others.

According to Ocaña-Fernández (2019) teachers should know that the use of technology improves the classroom experience in various ways, including creating more opportunities for research projects, it also helps the student learn through a combination of direct instruction and learning on their own.

Nowadays there are many concepts related to the characteristics and potential that new technologies present as instructional media.(Castro et al., 2007),Not hearing the word technology in recent times is inevitable, since they are everywhere and in our daily lives. They are also an unstoppable fact that brings us important benefits whether in our work activities, in communication, in education, it facilitates the teaching-learning process making it more dynamic, flexible, entertaining since we can adapt it to our needs.

Since it is a challenge for teachers to reconstruct this information and turn it into comprehensible and meaningful knowledge that can be used well in student learning, enhancing its usefulness, teacher training programs must undergo changes in order to ensure that new educators are trained to apply new educational practices. Only then can we ensure that teachers will perform a more creative, efficient and effective job in relation to the needs of students and the demands of society, as stated by the authors in their study.

ForRoblizo-Colmenero and Cózar-Gutiérrez (2015),andThe school world has had to face numerous challenges to cope with new changes, proposing new learning models, new procedures and teaching strategies, new methodologies and new resources that facilitate integration. The author points out the importance of teachers updating their skills; this need to implement knowledge in technology means that the student does not always depend only on the teacher to acquire science, but rather on the teacher, the bearer of instruments so that the student can exploit the knowledge he has with him and that the teacher can feel more satisfied in the performance of his professional role (Narváez-Zurita et al., 2022).

Going deeper into what these authors tell us, the teacher must have the necessary skills to motivate students to continue learning on their own, the teacher diagnoses the student's learning problems, encourages critical thinking, stimulates students' curiosity and creativity, teachers must stay informed about new findings and advances in the field of technology, according to what they tell us: "In this sense, education has been considered an essential link that integrates culture, society and productive development."(Cueva-Gaibor & Cueva-Gaibor, 2020, p. 342)

Based on the above, education is a right of every human being, it is an educational process in which we begin at an early age in which we begin to transmit or teach values, building us as citizens, teaching us our culture and each time we learn to acquire more knowledge, to reason and find solutions to problems, it helps us to learn, to think by participating in the processes, to live with awareness, learning more every day considering new technologies as a fundamental support to grow as stated by Zavala-Cárdenas (2023).

With all these premises, the present research is framed in developing a proposal for methodological workshops to enhance the development of skills in the use of technological tools for the treatment of content in teachers of the Severo Espinosa Educational Unit.

Methodology

The present research guides its execution with a mixed epistemological, non-experimental and cross-sectional cohort approach, reaches the descriptive level, was supported by the historical logical method to conceptualize its variables (Calle-Chacón et

al., 2020), a structured survey was applied on a Likert scale to 11 teachers from the Severo Espinosa Educational Unit, this survey was varied through Cronbach's Alpha reliability coefficient reaching a value of 0.726; data processing and analysis was executed through the use of descriptive statistics with contingency tables and JASP software.

Results

According to Shapiro Wilk's normality analysis, it is evident that variables 1 to 10 and 13 are non-parametric because p. value less than 0.05, while variables 11 and 12 are parametric variables because they have a p. value greater than 0.05.

Table 1

Most relevant data from the survey

	P1	P4	P5	P7	P10	P11	P12
Absent	0	0	0	0	0	0	0
Average	1.091	1.455	1.636	1.636	1.636	2.636	2.818
Standard deviation	0.302	0.522	0.505	0.674	0.674	1.120	1.328
Shapiro-Wilk	0.345	0.649	0.625	0.786	0.786	0.889	0.927
Shapiro-Wilk p-value	< .001	< .001	< .001	0.006	0.006	0.135	0.379
Minimum	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Maximum	2.000	2.000	2.000	3.000	3.000	4.000	5.000

Table 2

Relationship between the use of technology and the use of technology to motivate

P1 *The use of technology increases learning curiosity in students.*	**P7** *The use of technology motivates to continue learning*			
	Totally agree	**OK**	**Neutral**	**Total**
Totally agree	5	5	0	10
OK	0	0	1	1
Total	5	5	1	11

As can be seen in Table 2, we can see that teachers agree that the use of technological tools motivates students and increases their curiosity to learn. In Table 3, we can see that

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teachers agree on the gradual integration of technology in different subjects, and they also consider it positive that the use of technological tools improves their learning.

Table 3

Relationship between technological tool management and technology integration

P5	**P4** *Gradual integration of technology into the subjects*		
By using technological tools, students improve their learning	**Totally agree**	**OK**	**Total**
1 totally agree	4	0	4
2 agree	2	5	7
Total	6	5	11

By analyzing tables 4 and 5, it is clear that teachers consider technology important at the present time, since it brings with it great advantages, they also believe that its use increases the curiosity to learn more. Meanwhile, table 5 shows that teachers believe that it is difficult to train in technology, and they also believe that a good technological education cannot be given without technological devices.

Table 4

Technology is important and generates curiosity

P10	P1 *The use of technology increases learning curiosity in students.*		
They consider that the use of technology is important for teaching at the present time.	Totally agree	OK	Total
1 totally agree	5	0	5
2 agree	5	0	5
3 neutral	0	1	1
Total	10	1	11

Chi-square contrasts

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Table 5

Relationship between training and device-free education

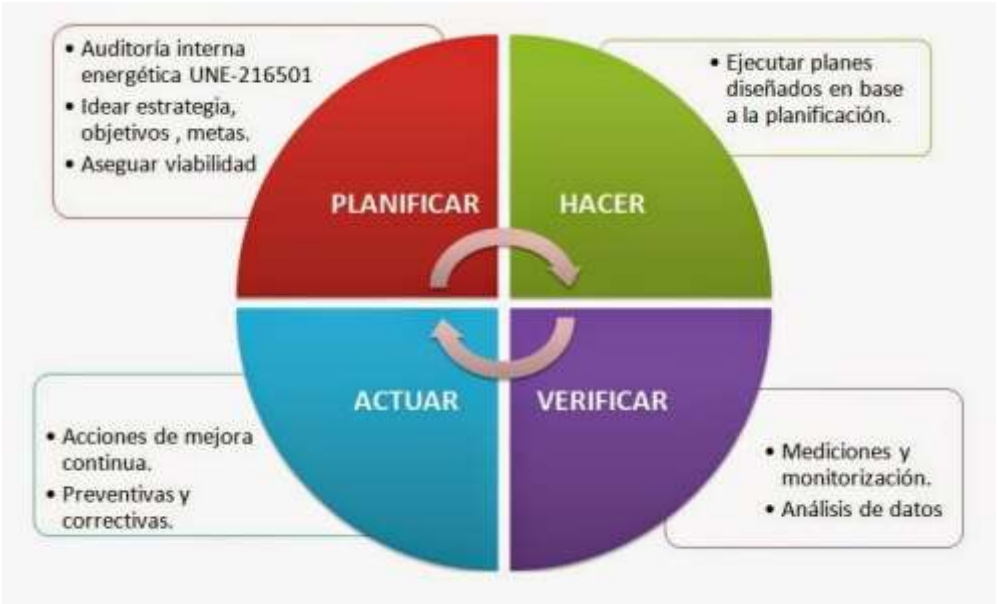
P11	P12 *Technology education without devices*					
It is difficult to train in technological tools	Totally agree	OK	Neutral	Disagree	Strongly disagree	Total
1 totally agree	2	0	0	0	0	2
2 agree	0	1	1	0	1	3
3 neutral	0	1	1	1	0	3
4 disagree	0	1	0	2	0	3
Total	2	3	2	3	1	11

Proposal

For the implementation of this proposal, the PDCA CYCLE was selected, since this cycle constitutes one of the main tools for continuous improvement in organizations, widely used by quality management systems, which means: plan, do, verify and act (figure 1).

Figure 1

The PDCA cycle or Deming cycle



Plan: Based on the results obtained in the survey, which show an interest on the part of the teaching staff in learning and knowing more about the different technological tools, since by using them we would be significantly improving the teaching-learning process,

it is proposed to hold a dialogue with the authorities of the Severo Espinoza Educational Unit, for the training of teachers. The objectives set for the preparation of the proposal presented will be presented to the respective authorities.

General Objective: To train teachers from the Severo Espinoza Educational Unit on the use and application of significant technological tools for the teaching-learning process.

Specific Objectives

- Contribute to the development of education through the inclusion of digital technology as support in curricular development.
- Stimulate student development and learning through the application of ICT as an innovative method in the teaching-learning process, which responds to the demands of the productive scenario.

Do: This proposal seeks technological education, for which the following necessary resources are proposed:

- Approval by the competent authorities for financing and initiation of the same.
- Computer equipment for exclusive use by teachers, which will be used for training and the development of activities required by educational professionals.
- Hiring a teacher who will provide training and technological knowledge and create the digital channel for the teachers of the educational unit with the steps and guides.

Verify: Once the training process has begun, the authorities, together with the contracted professor, will carry out gradual evaluations to verify the use of the different technological tools by each of the school's teachers.

It will be possible to verify the fulfillment of objectives, as well as the degree of satisfaction on the part of teachers and students.

Act: Define the achievements that will allow us to connect with other educational centers in the country to create similar proposals that contribute to the integration of information systems with technology to strengthen the teaching-learning process.

Finally, based on the proposal presented, it is expected to achieve an optimal level of education by the teachers of the Severo Espinoza Educational Unit, which will contribute with their knowledge and facilitate the education provided to their students.

Conclusions

- In order to have a permutation in teaching-learning within the Educational Institution, it should start by raising awareness among the Institutional authorities

of its importance, currently so that they train the teaching staff in the different technological tools since these have currently become a necessity, in addition to that they allow greater interaction between the teacher and the student making this teaching process dynamic and fun, it is required that this be seen in a broader and more integrative way, which is why it is necessary to incorporate ICT in the curriculum of the teaching career such as the use of (e-mail, Chat, spaces, blog, discussion forums, use of web-based environments, presentations, educational software, online courses, web pages, among others).

- It is clear that technologies applied to the educational process generate motivation in the process since they encourage certain aspects such as curiosity, discovery and active participation in class.
- Ongoing teacher training is essential to effectively include technologies in educational processes and, above all, to ensure that teachers are able to apply them in their classrooms, not only from a procedural perspective, but also to add didactic and pedagogical aspects that support and reduce inter-learning and therefore generate educational quality.

Conflict of interest

There is no conflict of interest in relation to the submitted article.

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