



Educational training in Physical Education in the context of current technological virtuality

Formación educativa en Educación Física en el contexto de la virtualidad tecnológica actual

Formação Educacional em Educação Física no contexto da virtualidade tecnológica atual

Miguel Bennasar¹

Instituto Superior de Formación Docente Salomé Ureña
Santo Domingo - Santiago de los Caballeros, República Dominicana

 <https://orcid.org/0000-0002-3856-0279>
miguelbennasar7884@gmail.com

DOI (Generic) : <https://doi.org/10.35622/j.rie.2022.03.002>
DOI (Document in English) : <https://doi.org/10.35622/j.rie.2022.03.002.en>
DOI (Documento en español) : <https://doi.org/10.35622/j.rie.2022.03.002.es>

Received:13/12/2021 Accepted: 28/02/2022 Published:07/03/2022

KEYWORDS

virtual classes,
educational training,
educational institutions,
technological platforms,
educative technology.

ABSTRACT. The study's primary purpose focused on analyzing educational training in Physical Education and the use of technological tools in the current context as a way of perceiving the reality of the use of technological platforms in academic exchanges in a virtual way. The research is methodologically attached to descriptive field studies. The data collection instrument was the survey, made up of 12 items, with their alternatives, which allowed the informants to extract the information from which the analyzes were based. For validity, expert judgment was applied, and reliability was determined using the Cronbach Coefficient, whose result was 0.89. As conclusions, the students stated that ICTs represent a significant fact for understanding educational realities. Likewise, they showed disagreement about Physical Education being versatile under the virtual modality.

PALABRAS CLAVE

clases virtuales,
formación educativa,
instituciones educativas,
plataformas tecnológicas,
tecnología educativa.

RESUMEN. El propósito principal del estudio se centró en analizar formación educativa en Educación Física y el uso de herramientas tecnológicas en el contexto actual, como una forma de percibir la realidad del uso de las plataformas tecnológicas en los intercambios educativos de manera virtual. La investigación se anexa en lo metodológico a los estudios de campo de tipo descriptiva. El instrumento de recolección de datos fue la encuesta, conformada por 12 ítems, con sus alternativas, que permitió a través de los informantes, extraer las informaciones de donde se basaron los análisis. Para la validez se aplicó el juicio de expertos y la confiabilidad se determinó aplicando el Coeficiente de Cronbach y cuyo resultado fue de 0,89. Como conclusiones los estudiantes manifestaron que las TIC, representan un hecho significativo para la comprensión de las realidades educativas. Asimismo, evidenciaron estar en desacuerdo con relación a que la Educación Física resulte versátil bajo la modalidad virtual.

PALAVRAS-CHAVE

RESUMO. O objetivo principal do estudo se concentrou em analisar a formação educacional em Educação Física e o uso de ferramentas tecnológicas no contexto atual, como forma de perceber a

¹ Postdoctoral program: public policies and education. **Correspondence:** miguelbennasar7884@gmail.com



aulas virtuais, formação educacional, instituições de ensino, plataformas tecnológicas, tecnologia educativa.

realidade do uso de plataformas tecnológicas nas trocas educacionais de forma virtual. A pesquisa está metodologicamente atrelada a estudos descritivos de campo. O instrumento de coleta de dados foi o questionário, composto por 12 itens, com suas alternativas, o que permitiu aos informantes extrair as informações das quais se basearam as análises. Para validade, foi aplicado o julgamento de especialistas e a confiabilidade foi determinada pela aplicação do Coeficiente de Cronbach e cujo resultado foi de 0,89. Como conclusões, os alunos afirmaram que as TIC representam um fato significativo para a compreensão das realidades educacionais. Da mesma forma, mostraram-se em desacordo em relação à versatilidade da Educação Física na modalidade virtual.

1. INTRODUCTION

The reality currently being experienced, directly affected by the Covid-19 pandemic, has created educational environments where technology mediates exchanges. In this sense, this new culture will mark the use of technological tools in current and future educational processes. Today, to ignore the importance of technology in people's daily activities would be to deny the growth of digital activities that have significantly permeated social and educational statutes as a pedagogical alternative regarding the pandemic (Biesta, 2022). Moreover, in academic areas, innovations have materialized to become the quintessential projection of learning and teaching processes at all levels (A. Rodríguez et al., 2019).

The appreciations obtained from the different social and educational realities show that information and communication technologies (ICT) impose an increasingly accelerated pace. Consequently, the training scenarios have undergone essential transformations because the modality virtual has largely replaced face-to-face. Therefore, the emergence of a new way of conceiving teaching strategies and platforms that facilitate these specific circumstances is advocated (Lorenzo et al., 2019).

Considering the training processes in the current situation in all areas, particularly in Physical Education, is to be on a par with technological advances. "Taking into account the transcendental role of education for society and the complexity of the underlying processes of educational phenomena..." (Blanchar, 2020, p. 32). What imposes a new culture adjusted to the current situation.

Educational training is therefore experiencing a kind of metamorphosis where digital precepts and technological platforms are resources that have become indispensable tools. This reality that impacts the pedagogical forms of Physical Education suggests using digital resources to guarantee the educational continuity of students (Blanco et al., 2020). That is why educational institutions have implemented innovative mechanisms that put them in tune with this new reality (S. Porrás et al., 2020).

In recent years, society has experienced changes motivated by diverse social and technological advances agents. In these changes, the school occupies a preferential place as a development platform for the new generations. In this way, the teacher of the 21st century must be able to respond, with a professional attitude, to the different challenges of the new system (Jiménez et al., 2019, p. 2).

Technological tools are all those combined in the technical context and allow communication links to be established between teachers and students (Moreira & Schlemmer, 2020). This new educational culture that is

part of this new normality that characterizes the current context guides the school as an institution to assume new roles. It is also considered emotional aspects, adaptability, and understanding among educational actors (S. Porras et al., 2020).

... the need to keep the school articulated with education and technology where the objective is to educate students; Tele-education was implemented where teachers would start making changes in their methods, teaching-learning methodologies, where Information and Communication Technologies (ICT) come to occupy a primary role, becoming a tool to achieve meaningful learning,... (Inga et al., 2020, pp. 313-314).

From these perspectives, education and institutions assumed behaviors expressed in the assumption of digital resources to strengthen training processes (Arriaga & Bautista, 2021). Due to these new realities that characterize the educational processes in this reality, the primary purpose of this study was to analyze academic training and the use of technological tools in the current context at the higher education level, which suggests the interpretation of the findings that allowed to account for the intrinsic events of this conjuncture.

These widely described realities justify the realization of this study because it allows us to inquire about the phenomenological facts of academic events in the Physical Education subject, along with the review of authors who have studied the critical knots that arise in educational matters in the pandemic situation. and the search for alternatives to overcome the difficulties that have occurred. In addition, "increasingly, it is demanded that what is learned in the classroom can be used as a tool for life..." (Corrales et al., 2021, p. 5).

For these reasons of a contextual nature and the reality experienced in institutions as a result of the pandemic impacts in all curricular areas, particularly in Physical Education, the following specific objectives are proposed in this research: 1) Perception of the students of the adequacy of the platform used in the institution where they study. 2) Role of teacher support in terms of guidelines for fulfilling assignments and responsibilities. 3) Training of students in the management of the different educational technologies that circulate in the academic field.

With this orientation expressed in the purposes above, the author intends to carry out an analytical reflection described in the discussions of the analyses and the findings that underlie the realities that are explored.

2. METHOD

The applied study paradigm was quantitative due to the numerical argumentation and the inferences made from the information collected. The type of research was field since the obtaining of data, and the application of the instrument was carried out at the Higher Institute of Teacher Training Salomé Ureña, Luis Napoleón Núñez Molina Campus, in the Dominican Republic, where the study was carried out during the semester 2 -2021. Field research is oriented to collecting information or data basically in primary sources for very well-defined objectives without manipulating the intrinsic elements that characterize it (Tamayo, 2017).

When the information is extracted in an apprehensive and direct way from the investigated reality, it allows the researcher to appropriate the truths that explain the facts resulting from the characterizations that are appreciated in the future and characterize this type of study. Therefore, field research collects data directly from the reality of

the events without manipulating or controlling the variables. Instead, it studies social phenomena in their natural environment (Ríos, 2018).

By the interpretations that come from the formal appraisals of the reality that is investigated, the level of the study is descriptive, since, from the results that were obtained, a characterization of the total universe was carried out as a basis for the internal validity of the results, according to the primary purpose of the research. Descriptive research explains situations based on inquiries, giving a distinct meaning to the phenomena or facts treated (Sánchez et al., 2018).

The population consisted of 90 students, of which 20% were selected: eighteen (18) students who attended the 7th semester 2-2021 of the Bachelor of Physical Education, Luis Napoleón Núñez Molina Campus Licey al Medio, Santiago of the Knights, Dominican Republic. A. Porras (2017) defines it as the: "set of all possible observation units that are the object of the problem to be considered. It is the real object of interest of which the chosen sample constitutes a particular subset..." (p.3)

For this purpose, "intentional" non-probabilistic sampling was applied to select the 18 that make up the sample. For this purpose, the total number of students was listed, and according to the conditions suggested for the present study, the definitive group was selected. The intention to choose a particular group in field research is given by the specific interest of the researcher and the capacity in terms of the use of resources and instrumentation, which are elements to consider for the collection of information (Mishra et al., 2019).

The survey was used as a data collection instrument. In infield research, one of the most used ways to extract information from social subjects is the questionnaire and the written survey as an instrument (Schleicher, 2019).

The investigations that try to perceive how students appreciate the different digital strategies resulting from the pandemic in educational meetings were the main reason for the inquiry. The use of platforms, technology management, virtual classes, among others. "Online studies have managed to contact different profiles..."(Subinas, 2021, p. 190).

That is why the validity of the survey was determined through the expert judgment technique. In this sense, the referees thoroughly reviewed the instrument. The indications that were later recommended were incorporated to give technical consistency to the value, whose validity index was 0.80. Reliability was determined by applying the Cronbach Coefficient, whose result was 0.89, which implies that it is an instrument with sufficient consistency for the research.

For the purposes of analysis and its correlatives, the following guidelines were followed:

- Productions that addressed education and the use of platforms were selected.
- They were classified according to the findings and conclusions that became bibliographic references.
- The survey was applied to the selected sample.
- The results were recorded in tables, expressed in absolute figures and percentages.
- The results were analyzed according to the objectives of this study.

3. RESULTS

The results obtained, product of the application of the survey to the selected sample, are presented below:

Table 1

Modality used in the development of educational activities in the quarter 2-2021

Items	Option	Frequency	%
Were the educational activities in Physical Education during the quarter 2-2021 developed in a manner?	a. Face-to-face.	2	11
	b. Virtual	3	17
	c. Mixed	13	72
Total		18	100

Source: self made.

Education in the framework of the pandemic has had to migrate to different forms for educational exchanges in routine activities, which allow adequate continuity. "The current health emergency decreed worldwide is a challenge not only in the health and economic sector in Latin America, but also a challenge for the educational sector, which seeks to massify knowledge through various technological tools..." (Estela et al., 2021, p. 251). Table 1 shows that 72% of the students consulted stated that they use the Mixed modality in classes and educational exchange, 17% believe that the experience was Virtual, and 11% Face-to-face. This new reality has promoted educational mechanisms and strategies to guarantee as far as possible the learning practiced in each of the school institutions that are part of this study, which is possible if the technologies that are handled are versatile and assimilated by the students.

Technology and Physical Education converge with several functions and uses: Use of mobile devices by both teachers and students, use of digital cameras to record exercises and their subsequent analysis, blogs and different audiovisual repositories, a multitude of devices (widgets, software, Apps) that can monitor physical activity (Sebastiani & Campos, 2019).

The pandemic has involved, among other aspects, entering the technological world to transfer virtual scenarios to realities in the current context. "... The rationale for transferring the results to this area lies in the importance of being able to find new alternative resources that facilitate improvement in educational quality..." (Corso et al., 2019, p. 2).

Table 2

Knowledge of students about ICT

Items	Option	Frequency	%
Do you have knowledge about the different technologies that are used in education in this pandemic situation?	a. Yes	14	78
	b. No	4	22
Total		18	100

Source: self made.

Currently, the information circulating in the different educational institutions is related to the digital management that is carried out regarding the confinement produced by the pandemic. In this sense, Table 2 reflects that 78% of the students consulted stated that they know of the various technologies used in Physical Education. There is important information from information networks about the tools that support pedagogical exchanges in the institutions considered. In this order of ideas, 22% expressed not knowing the different suggested technologies for use in academic activities. It is essential that both educational institutions and students get involved in exploring the various technological tools that circulate in networks (Marín & Sampedro, 2016).

Arriaga and Bautista (2021) point out:

...the vertiginous evolution of society in terms of the appearance and use of information and communication technologies called ICT by its acronym of the words that make it up, a situation that has been taken advantage of in the context of the pandemic in which we live; for which university education should not and should not ignore these advances; Therefore, it is urgent to implement these resources cognitively and instrumentally without detaching from the pedagogical purposes in the training of students (s/p.).

Table 3

Orientation of the use of the Moodle Platform in the Luis Napoleón Núñez Molina Campus, semester 2-2021

Items	Option	Frequency	%
Did you receive instructions on the use and usefulness of the Moodle Platform at the Luis Napoleón Núñez Molina Campus, semester 2-2021?	a. The College taught a course	3	17
	b. Teachers provided advice	6	33
	c. take personal courses to get to know the platform	9	50
	d. Other	0	0
Total		18	100

Source: self made

One of the urgent and peremptory activities, when the use of technologies for educational activities is assumed, is the training of both teachers and students. In this sense, the implementation of the Moodle Platform was an intelligent decision by the Salomé Ureña Higher Teacher Training Institute, Luis Napoleón Núñez Molina Campus, to give continuity to the different pedagogical projects. More precisely because of the possibility of establishing an academic relationship between students and teachers (Ponce, 2016). In this order of ideas, Table 3 shows that 50% of the students stated that they carried out courses and personal activities to learn about the management of the campus platform, which implies that there is an important initiative in this regard. In comparison, 33 % received instructions from their teachers, which translates into improved communication with students. Likewise, 17% stated that the campus gave courses and workshops to inform about technological uses in the four months.

Table 4

Skills in the concept and use of virtual classes in Physical Education

Items	Option	Frequency	%
Within the concept and use of virtual classes in Physical Education, their management skills, can you qualify them as?	a. Excellent	2	11
	b. Hello good	3	17
	c. Satisfactory	9	50
	d. Improvable	4	22
Total		18	100

Source: self made.

The realization of Physical Education class in these difficult times was experienced by Covid-19. Today, there is evidence of the need for a new definition of roles in the academic context about the exchange of knowledge and the new ways of teaching and learning in virtual environments that various technological tools propose to teachers and students. Despite the uncertainties, tensions, and fears that this new reality generates, it demands a creative, innovative, responsible student profile and transforms their knowledge.

Table 4 shows that 50% of the respondents believed that the concept and use of virtual classes in Physical Education are Satisfactory. In comparison, 22% expressed that they can be improved, which represents a weakness, and this is due to the flaws that most students have in terms of educational technology. On the other hand, 17% stated their skills were Good, and 11% said they were Excellent.

Torres (2015) points out:

... if a sample of teachers knows the terms that the word ICT implies, if they use these resources in their daily practice, if they feel sufficiently trained to be able to use these tools daily in their classes, if they consider it positive to use ICT information in the area of Physical Education or if the centers have the necessary infrastructure to be able to use these educational resources... (p.86).

Table 5

Physical Education under the virtual modality and its relationship with the teaching and learning process

Items	Option	Frequency	%
Is Physical Education under the virtual modality versatile for the teaching and learning process?	a. Totally agree	3	17
	b. Agree	3	17
	c. In disagreement	8	44
	d. Totally disagree	4	22
Total		18	100

Source: self made.

The global context produced countless possibilities to replace face-to-face classes with virtual ones, and from there, virtual classes emerged to give continuity to the development of program content. In this sense, digital platforms became common spaces where most educational institutions converged (Pardo et al., 2021).

Table 5 shows that 44% of the students disagree that Physical Education under the virtual modality is versatile for teaching and learning, while 22% affirm that they oppose it. Similarly, 17% agreed, and the other 17% agreed. The virtual modality was assumed to offer an emerging educational scenario due to the forced interruption of face-to-face attendance due to the pandemic, and the selection of the Google Meet platform is a plausible option that will not necessarily solve problems of adaptability or use. However, it is required to assume it and cultivate it. In this sense, "... ICTs in education have increasingly become an essential element in the educational environment. This complement, accompanied by technological tools, must generate a growing reality and presence in society..." (Hernandez, 2017, p. 7).

Table 6

Appreciation of the use of the Moodle Platform in the quarter 2-2021

Items	Option	Frequency	%
Was the Moodle Platform used by Physical Educationa. teachers properly?	Totally agree	4	22
	b. Agree	9	50
	c. In disagreement	3	17
	d. Totally disagree	2	11
Total		18	100

Source: self made

The adequacy in the use of the Moodle Platform largely determines the effectiveness of the educational activities and the significant learning of the topics covered. "The role of information and communication technologies in the educational field is not the central problem teachers, and students face during the Covid-19 pandemic. The main challenge is learning in confinement..." (Ramirez, 2021, p. 20). Table 6 shows that 50% of the students consulted affirm that the Moodle Platform was used by Physical Education teachers accordingly. By this assessment, 22% expressed Total agreement, which implies that this view is favorable to the functions performed by teachers at this juncture. However, in contrast to what was stated, 17% of the critical informants expressed that they disagree, while 11% strongly disagree, which could cause certain restrictions regarding the quality of educational processes.

Table 7

Appreciation of the Moodle Platform used in the 2-2021 semester

Items	Option	Frequency	%
Does the Moodle platform, used by the Luis Napoleóna. Núñez Molina Campus, rate it as?	Very good	2	11
	b. Good	12	67
	c. Regular	3	17
	d. Improvable	1	5
Total		18	100

Source: self made

Due to the importance of educational platforms in the current context, it is pertinent to assess their operation to specify the continuity of their use or modification (Parra, 2020). In Table 7, it is perceived that 67% of the students consulted valued the use of the Moodle Platform in the Luis Napoleón Núñez Molina Campus as Good, which is essential that highlights its pertinent use. Likewise, 11% classify it as Very Good, which means that students have felt comfortable using it. On the other hand, 17% consider that it is Regular and 5% believe it can be improved.

An atypical situation is experienced that requires constant renewal in using different technologies. Therefore, it is recommended that institutions have alternative plans that allow the innovation of didactic strategies, given the nature of current pedagogical processes (Cifuentes, 2020).

Table 8

Adequacy of the use of educational technologies in virtual Physical Education classes

Items	Option	Frequency	%
Is it advisable to use educational technologies in virtual Physical Education classes?	ina. Totally agree	11	61
	b. Agree	5	29
	c. In disagreement	1	5
	d. Totally disagree	1	5
Total		18	100

Source: self made.

To shorten the distances that naturally arose due to the pandemic, the use of educational technologies and platforms has been a viable and expeditious alternative. According to what is evidenced in Table 8, 61% of those consulted are in total agreement with the use of educational technologies in virtual Physical Education classes. This legitimizes its application by teachers and institutions. In this order of ideas, 29% agree with the application of platforms in the current situation where face-to-face activities are restricted. In this sense "..., it is required that the structural and technological stability of educational institutions constitute a relevant education, focused on progress and modernity, with the sole purpose of responding to the requirements of today's society..." (M. Rodríguez et al., 2021, p. 416). In contrast, 5% are either disagree or disagree. However, as perceived, the majority has a positive appreciation in this regard.

Table 9*Access to educational technologies at home*

Items	Option	Frequency	%
At home or residence, do you have access to educational technologies?	a. Yes	11	61
	b. No	7	39
Total		18	100

Source: self made.

The access to the networks in the different homes would mean a promising scenario to face the restrictions of the presence of the educational activities. In this order of ideas, Table 9 shows the opinion of the students consulted, and 61% state that they have access to educational technologies from the place where they reside. However, a significant number of them, 39%, stated that they do not have access to technology, which adversely affects their learning process, academic performance, and the effective exchange of educational activities with their teachers. The current context demands technological tools that allow effective communication in the institution considered in this study. The current reality constitutes an opportunity to rethink the educational fact, its potentialities, and possibilities on the teaching processes, from which innovative alternatives arise in schools, based on the particular experiences of the students (M. Ruiz, 2020).

Table 10*Availability of internet service at home*

Items	Option	Frequency	%
Do you have continuous telephone and internet services at home?	a. Yes.	11	61
	b. Yes, but with sporadic interruptions.	5	29
	c. It rarely works	1	5
	d. No	1	5
Total		18	100

Source: self made.

Many of the activities carried out by students are carried out from their homes; hence they must have adequate internet services not to have restrictions or limitations in educational exchanges. "... These technologies allow members of the networks to work both synchronously and asynchronously, for groups that may have face-to-face or necessarily virtual sessions due to distance problems. ..." (F. Ruiz et al., 2021, p. 11). In this sense, what Table 10 shows, shows that 61% of the students consulted stated that they have the internet at home, which allows them to have access to the scheduled activities. Similarly, 29% expressed that they have the service, although with sporadic interruptions, which must be appropriately handled given the importance of virtual meetings. For 5%, this service works, but with many interruptions, or they do not have such a service. This group of students is affected by not having an adequate internet service.

Table 11

Benefits of the Moodle Platform on the creation of virtual courses and learning environments under the virtual modality

Items	Option	Frequency	%
Does the Moodle Platform offer the creation of virtual courses and learning environments under the virtual modality?	a. Totally agree	11	61
	b. Agree	3	17
	c. In disagreement	1	5
	d. Totally disagree	3	17
Total		18	100

Source: self made

The motivation to learn and use educational technology in the context is vital for the programming of activities. An attitude is required that can guarantee the effective use of the knowledge taught in each planning that is carried out. In this sense, involving the students who are the receivers of the contents is significant if the intention is to apply novel and innovative learning alternatives (M. González & Méndez, 20).

In Table 11, it is expressed that 61% of the students consulted express In total agreement that the Moodle Platform offers the creation of virtual courses and learning environments under the virtual modality. Likewise, 12% agree with this alternative. In contrast, 17% strongly disagree, and 5% disagree with implementing activities for the effective management of educational platforms.

For this reason, it is necessary to work with ICT in a didactic and not only instrumental way, that is, to generate a methodology that allows proposing activities in which these resources are present, taking advantage of their potentialities, which transcend the simple transmission of information, but also contribute or contribute to the generation of knowledge,... (C. González, 2018, p. 30).

Table 12

Accessibility and compatibility of the Moodle Platform from any web browser

Items	Option	Frequency	%
Does the Moodle Platform provide accessibility and compatibility from any web browser?	a. Totally agree	14	78
	b. Agree	2	11
	c. In disagreement	2	11
	d. Totally disagree	0	0
Total		18	100

Source: self made

Moodle is a platform that provides access and is compatible with any web browser to explore various educational resources and activities such as the forum, which allows asynchronous interaction with students to strengthen the educational process and clear up any doubts. That they show, in this activity, future assignments and their

particularities are expressed. Similarly, the forum is a resource that makes it possible to asynchronously inform students about a particular topic, which gives them the right to reply and give feedback. I use, for example, the teacher-student interaction forum for the purpose above. Both can be worked from any web browser.

Table 12 shows that 78% agree that Moodle provides accessibility and compatibility from any web browser, while 11% agree and the other 11% disagree. This result constitutes an advantage in using this educational platform for students.

Moodle is a platform to manage the teaching-learning process virtually. Therefore, there are different contents that the teacher makes available to the students, which are governed by a minimal structure (Batista et al., 2020; C. González, 2018).

4. DISCUSSIONS

The results point towards the consolidation of a new conception in educational matters. Furthermore, new spaces for knowledge exchange are evident using technologies and digital platforms, which are part of the unique culture and emerging pedagogy.

These platforms have also increased the number of young users who join the consumption of hub platforms. This behavior allows us to propose a first approximation to the principles applicable to the attention economy based on the quantitative evidence demonstrated (Fernández & Giraldo, 2021, p. 12).

Educational training in Physical Education and the use of technological tools in the current context is a reality that has prompted the creation of strategies that allow, through virtual and distance education, to establish communicative links between teachers and students. The assessments of those consulted in the information collection instrument account for this new scenario.

The pandemic in this opinion orientation introduced modifying elements in terms of establishing academic links, where the management of technological tools is part of the new reality, despite the restrictions of some sectors. Confinement has taught solidarity and commitment to each person (Castro, 2020). And since it is a condition that must be assumed with responsibility and academic promise, these events must be investigated systematically to give the different actors options for understanding. "...This has created new possibilities for student motivation, efficient learning and assessment of learning outcomes" (Ideland, 2021, p. 7).

A significant result is the use of digital platforms that were initially considered a kind of communication barrier, but once implemented, users have assumed it as a way of academic life. In this particular case, the most used is Moodle, which is very versatile and friendly, which has allowed the development of school activities in the institution of research interest and the possibilities of exchanges with other students and teachers. The changes that have driven the pandemic reality are multiple and varied but necessary for its eradication (Martínez, 2018).

There is a well-founded and valuable knowledge about why, for what, and how digital resources must be part of the school curriculum, of a true pedagogical renewal and of a particular culture

and government of the educational centers, counting on specific public policies that the changes in perspective are multiple and complex (Escudero et al., 2018, p. 59).

The vast majority of the students consulted to consider the use of different technologies to carry out academic activities favorable, which legitimizes their frequent and daily use in the institution because it allows exchanges and school routines on an ongoing basis.

Technologies are driving pedagogies towards new scenarios in which the use of specific tools can reshape pedagogical approaches and, therefore, place them in continuous discussion as a preliminary step to integrating them, especially by formal institutions (Sangrá et al., 2021, p. 24).

According to the results obtained after this investigative tour and as a way to appreciate the opinions about the preparation of teachers and students in the specialized area. In other words, there is an almost unanimous trend regarding their motivation to take courses and training systems in the management of educational platforms and technologies in general.

5. CONCLUSIONS

In the current context where a digital culture prevails, the Physical Education students of the Luis Napoleón Núñez Molina Campus stated that they know of the various technologies used in education, that is, the information that circulates in terms of technology is known and handled with some familiarity.

In the same way, the informants know what ICTs are, which can be interpreted as a significant fact for understanding educational realities.

On the other hand, some respondents confirmed that they do not have technology from their homes, which is a significant limitation. Indeed, in table 9, it can be seen that 39% of the students believed that they do not have access to the internet service, making it difficult for them to obtain the resources for their learning.

In another order of ideas, a high percentage stated that school activities are of mixed modality. A similar rate entirely agrees that the Moodle Platform offers virtual courses and learning environments under the virtual modality.

A considerable percentage of students showed disagreement about Physical Education being versatile under the virtual modality for teaching and learning. Education in these emerging spaces calls for rethinking, reinventing education and with it training as a virtual platform in the process of educating, of movement; likewise, its articulation within the current complexity process is consistent with the demands of globalization, considering all the possible actors and scenarios from which the integral formation of the man of this new time is promoted.

Education under the virtual modality must develop new skills and abilities aimed not only at the cognitive domain but also in their abilities to learn, unlearn and relearn, that is, "learn to learn" to adapt to the new demands of society, for an education that frees ways of acting, thinking and conceiving the coexistence scenarios of the future.

Conflicto de intereses / Competing interests:

El autor declara que no incurre en conflictos de intereses.

Rol de los autores / Authors Roles:

No aplica.

Fuentes de financiamiento / Funding:

El autor declara que no recibió un fondo específico para esta investigación.

Aspectos éticos / legales; Ethics / legals:

El autor declara no haber incurrido en aspectos antiéticos, ni haber omitido aspectos legales en la realización de la investigación.

REFERENCES

- Arriaga, W., & Bautista, J. (2021). Las TIC y su apoyo en la educación universitaria en tiempo de pandemia: una fundamentación factotéorica. *Revista Conrado*, 17(78), 201-206. <https://conrado.ucf.edu.cu/index.php/conrado/article/view/1665>
- Batista, C., Campins, L., & Tamayo, R. (2020). Moodle como soporte de la gestión de contenidos educativos en universidades cubanas desde la perspectiva del proyecto ELINF. *AULA Revista de Humanidades y Ciencias Sociales*, 66(2), 17-25. <https://doi.org/10.33413/aulahcs.2020.66i2.133>
- Biesta, G. (2022). Por qué la forma de la enseñanza importa: Una defensa de la integridad de la educación y del trabajo de los profesores más allá de programas y buenas intenciones. *Revista de Educación*, 395. <https://doi.org/10.4438/1988-592X-RE-2022-395-519>
- Blanchar, F. (2020). Características de la práctica pedagógica en el área de Química. *Revista Científica*, 1(37), 30-57. <https://doi.org/10.14483/23448350.14855>
- Blanco, C., Salazar, F., & Salguero, F. (2020). El papel de la innovación educativa en el contexto universitario: una experiencia pedagógica a través de la gamificación. *VII Jornadas Iberoamericanas de Innovación Educativa en el Ámbito de las TIC y las TAC (InnoEducaTIC 2020)*, 369-378. <http://hdl.handle.net/10553/76564>
- Castro, R. (2020). Coronavirus, una historia en desarrollo. *Revista médica de Chile*, 148(2), 143-144. <https://doi.org/10.4067/s0034-98872020000200143>
- Cifuentes, J. (2020). Docencia online y Covid-19: la necesidad de reinventarse. *Revista De Estilos De Aprendizaje*, 13(Especial), 13, 115-127. <http://revistaestilosdeaprendizaje.com/article/view/2149>
- Corrales, M., Sánchez, J., Moreno, J., & Zamora, F. (2021). Educar en el interés social de las ciencias sociales: una intervención didáctica. *Revista Prisma Social*, 35, 249-276. <https://revistaprismasocial.es/article/view/4357>
- Curso, C., Constable, L., Colaccioppo, N., Cragolini, A., & Mallo, A. (2019). *Integración de recursos del paradigma analítico y de la inteligencia de negocios como estrategia para el fortalecimiento del proceso*

- de toma de decisiones en un contexto educativo* [Red de Universidades con Carreras en Informática]. <http://sedici.unlp.edu.ar/handle/10915/77347>
- Escudero, J., Martínez, B., & Villacís, J. (2018). *Las TIC en la formación continua del profesorado en el contexto español*. <https://www.semanticscholar.org/paper/Las-TIC-en-la-formación-continua-del-profesorado-en-Escudero-Murcia/9674bd7d713cf7d02f49c09d9cd452990ccf5fec>
- Estela, R., Contreras, E., Incio, F., Fernández, R., Namuche, J., & Reyes, E. (2021). Método de Montecarlo como estrategia didáctica intercultural para la enseñanza universitaria de la física y matemática en el contexto de la educación no presencial. *Apuntes Universitarios*, 11(4), 250-268. <https://doi.org/10.17162/au.v11i4.770>
- Fernández, C., & Giraldo, S. (2021). Evolution of the digital attention market in the pandemic: A comparative study of young spanish university students (2019–2021). *Sustainability*, 13(21), 11837. <https://doi.org/10.3390/su132111837>
- González, C. (2018). Contribuciones de los usos didácticos de las TIC para la formación literaria de jóvenes lectores-. *Aula de Encuentro*, 20(2). <https://doi.org/10.17561/ae.v20i2.2>
- González, M., & Méndez, L. (2017). Desarrollo de un practicum virtual: fundamentos y claves. *Revista Practicum*, 2(2), 50-68. <https://doi.org/10.24310/RevPracticumrep.v2i2.9858>
- Hernandez, R. (2017). Impacto de las TIC en la educación: Retos y perspectivas. *Propósitos y Representaciones*, 5(1), 325. <https://doi.org/10.20511/pyr2017.v5n1.149>
- Ideland, M. (2021). Google and the end of the teacher? How a figuration of the teacher is produced through an ed-tech discourse. *Learning, Media and Technology*, 46(1), 33-46. <https://doi.org/10.1080/17439884.2020.1809452>
- Inga, M., Garcia, D., Castro, A., & Erazo, J. (2020). Educación y Covid-19: Percepciones docentes para enfrentar la pandemia. *Revista Arbitrada Interdisciplinaria Koinonía*, 5(1), 310-331. <https://dialnet.unirioja.es/servlet/articulo?codigo=7610725>
- Jiménez, D., Sancho, P., & Sanchez, S. (2019). Perfil del futuro docente: Nuevos retos en el marco de EEES. *Contextos Educativos. Revista de Educación*, 23, 125. <https://doi.org/10.18172/con.3471>
- Lorenzo, G., Lorenzo, A., & Lledó, A. (2019). Las TIC en el contexto educativo a través de la producción científica en español. *Revista General de Información y Documentación*, 29(2), 287-307. <https://doi.org/10.5209/rgid.66969>
- Marín, V., & Sampedro, B. (2016). Web 2.0 en la dinamización y participación familiar y comunitaria. *Journal of New Approaches in Educational Research*, 6(1), 38-43. <https://doi.org/10.7821/naer.2016.1.137>
- Martínez, F. (2018). Reflexiones sobre las políticas educativas. *Revista Latinoamericana de Estudios Educativos*, 48(2), 71-96. <https://doi.org/10.48102/rlee.2018.48.2.47>

- Mishra, P., Pandey, C., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of Cardiac Anaesthesia*, 22(1), 67. https://doi.org/10.4103/aca.ACA_157_18
- Moreira, J., & Schlemmer, E. (2020). Por um novo conceito e paradigma de educação digital onlife. *Revista UFG*, 20. <https://doi.org/10.5216/revufg.v20.63438>
- Pardo, I., Marín, D., & De Castro, A. (2021). Aprendizajes para la vida a través de la implementación de estrategias didácticas digitales: un estudio comparativo de casos. *Revista Iberoamericana de Educación*, 85(1), 17-38. <https://doi.org/10.35362/rie8514044>
- Parra, M. (2020). Actividades Lúdicas como Estrategias de Transición Educativa. *Revista Cientific*, 5(17), 143-163. <https://doi.org/10.29394/Scientific.issn.2542-2987.2020.5.17.7.143-163>
- Ponce, M. (2016). Self-managed learning in students within technology-mediated environments. *Diálogos sobre Educación*, 12. <https://doi.org/10.32870/dse.v0i12.258>
- Porras, A. (2017). *Conceptos básicos de estadística*. [https://centrogeo.repositorioinstitucional.mx/jspui/bitstream/1012/157/1/13-Conceptos Básicos de Estadística - Diplomado en Análisis de Información Geoespacial.pdf](https://centrogeo.repositorioinstitucional.mx/jspui/bitstream/1012/157/1/13-Conceptos%20Básicos%20de%20Estadística%20-%20Diplomado%20en%20Análisis%20de%20Información%20Geoespacial.pdf)
- Porras, S., Pérez, C., Checa, P., & Luque, B. (2020). Competencias emocionales de las futuras personas docentes: un estudio sobre los niveles de inteligencia emocional y empatía. *Revista Educación*, 76-90. <https://doi.org/10.15517/revedu.v44i2.38438>
- Ramirez, G. (2021). La familia y el juego como estrategia de aprendizaje a distancia durante la pandemia del Covid-19 en México: Una propuesta desde la enseñanza universitaria en ciencias de la salud. *Revista de Educación a Distancia (RED)*, 21(65). <https://doi.org/10.6018/red.456231>
- Ríos, P. (2018). *Elaboración de un plan de negocios para la empresa Rubens Sport en la ciudad de Riobamba, provincia de Chimborazo, periodo 2019-2021. Proyecto de investigación. Escuela superior politécnica de Chimborazo Facultad de Administración de Empresas, Ecuador* [Escuela Superior Politécnica de Chimborazo]. <http://dspace.esPOCH.edu.ec/handle/123456789/10248>
- Rodríguez, A., Trujillo, J., & Sánchez, J. (2019). Impacto de la productividad científica sobre competencia digital de los futuros docentes: aproximación bibliométrica en Scopus y Web of Science. *Revista Complutense de Educación*, 30(2). <https://doi.org/10.5209/RCED.58862>
- Rodríguez, M., Castellar, A., & Barrios, O. (2021). *Desafíos de las universidades ante la sociedad del conocimiento, la era digital y la electrónica para la formación profesional* [Corporación Universidad de la Costa]. <https://hdl.handle.net/11323/8402%0A%0A>

- Ruiz, F., Cebrián, V., & Cebrián, M. (2021). Redes profesionales en tiempo de Covid19: compartiendo buenas prácticas para el uso de TIC en el prácticum. *Revista Practicum*, 6(1), 7-25. <https://doi.org/10.24310/RevPracticumrep.v6i1.12283>
- Ruiz, M. (2020). Formación de formadores en el marco de la educación intercultural: estado del arte. *Hojas y Hablas*, 19, 48-66. <https://doi.org/10.29151/hojasyhablas.n19a3>
- Sánchez, H., Reyes, C., & Mejía, K. (2018). *Manual de términos en investigación científica, tecnológica y humanística* [Universidad Ricardo Palma]. <http://repositorio.urp.edu.pe/handle/URP/1480>
- Sangrá, A., Raffaghelli, J., González, M., & Muñoz, P. (2021). Primary school teachers' professional development through the learning ecologies lens: new ways for keeping up to date in uncertain times. *PUBLICACIONES*, 51(3), 21-70. <https://doi.org/10.30827/publicaciones.v51i3.20790>
- Schleicher, A. (2019). *PISA 2018: Insights and Interpretations*. <https://eric.ed.gov/?id=ED601150>
- Sebastiani, E., & Campos, J. (2019). *Gamificación en Educación Física. Reflexiones y propuestas para sorprender a tu alumnado*. Editorial INDE.
- Subinas, J. (2021). La dualidad social en los estudios de opinión en Panamá (octubre de 2019-febrero de 2021). *Revista Política*, 59(1), 183. <https://doi.org/10.5354/0719-5338.2021.61804>
- Tamayo, M. (2017). *El proceso de la investigación científica*. Editorial Limusa. https://www.gob.mx/cms/uploads/attachment/file/227860/El_proceso__de_la_investigaci_n_cient_fica_Mario_Tamayo.pdf
- Torres, M. (2015). Inclusión de las TIC en el área de Educación Física (tercer ciclo de Educación Primaria). *Revista Tecnología, Ciencia y Educación*, 84-89. <https://doi.org/10.51302/tce.2015.30>
- Arriaga, W., & Bautista, J. (2021). Las TIC y su apoyo en la educación universitaria en tiempo de pandemia: una fundamentación facto-teórica. *Revista Conrado*, 17(78), 201-206. <https://conrado.ucf.edu.cu/index.php/conrado/article/view/1665>
- Batista, C., Campins, L., & Tamayo, R. (2020). Moodle como soporte de la gestión de contenidos educativos en universidades cubanas desde la perspectiva del proyecto ELINF. *AULA Revista de Humanidades y Ciencias Sociales*, 66(2), 17-25. <https://doi.org/10.33413/aulahcs.2020.66i2.133>
- Biesta, G. (2022). Por qué la forma de la enseñanza importa: Una defensa de la integridad de la educación y del trabajo de los profesores más allá de programas y buenas intenciones. *Revista de Educación*, 395. <https://doi.org/10.4438/1988-592X-RE-2022-395-519>
- Blanchar, F. (2020). Características de la práctica pedagógica en el área de Química. *Revista Científica*, 1(37), 30-57. <https://doi.org/10.14483/23448350.14855>

- Blanco, C., Salazar, F., & Salguero, F. (2020). El papel de la innovación educativa en el contexto universitario: una experiencia pedagógica a través de la gamificación. *VII Jornadas Iberoamericanas de Innovación Educativa en el Ámbito de las TIC y las TAC (InnoEducaTIC 2020)*, 369-378. <http://hdl.handle.net/10553/76564>
- Castro, R. (2020). Coronavirus, una historia en desarrollo. *Revista médica de Chile*, 148(2), 143-144. <https://doi.org/10.4067/s0034-98872020000200143>
- Cifuentes, J. (2020). Docencia online y Covid-19: la necesidad de reinventarse. *Revista De Estilos De Aprendizaje*, 13(Especial), 13, 115-127. <http://revistaestilosdeaprendizaje.com/article/view/2149>
- Corrales, M., Sánchez, J., Moreno, J., & Zamora, F. (2021). Educar en el interés social de las ciencias sociales: una intervención didáctica. *Revista Prisma Social*, 35, 249-276. <https://revistaprismasocial.es/article/view/4357>
- Corso, C., Constable, L., Colaccioppo, N., Cragolini, A., & Mallo, A. (2019). *Integración de recursos del paradigma analítico y de la inteligencia de negocios como estrategia para el fortalecimiento del proceso de toma de decisiones en un contexto educativo* [Red de Universidades con Carreras en Informática]. <http://sedici.unlp.edu.ar/handle/10915/77347>
- Escudero, J., Martínez, B., & Villacís, J. (2018). *Las TIC en la formación continua del profesorado en el contexto español*. <https://www.semanticscholar.org/paper/Las-TIC-en-la-formación-continua-del-profesorado-en-Escudero-Murcia/9674bd7d713cf7d02f49c09d9cd452990cccf5fec>
- Estela, R., Contreras, E., Incio, F., Fernández, R., Namuche, J., & Reyes, E. (2021). Método de Montecarlo como estrategia didáctica intercultural para la enseñanza universitaria de la física y matemática en el contexto de la educación no presencial. *Apuntes Universitarios*, 11(4), 250-268. <https://doi.org/10.17162/au.v11i4.770>
- Fernández, C., & Giraldo, S. (2021). Evolution of the digital attention market in the pandemic: A comparative study of young spanish university students (2019-2021). *Sustainability*, 13(21), 11837. <https://doi.org/10.3390/su132111837>
- González, C. (2018). Contribuciones de los usos didácticos de las TIC para la formación literaria de jóvenes lectores-. *Aula de Encuentro*, 20(2). <https://doi.org/10.17561/ae.v20i2.2>
- González, M., & Méndez, L. (2017). Desarrollo de un practicum virtual: fundamentos y claves. *Revista Practicum*, 2(2), 50-68. <https://doi.org/10.24310/RevPracticumrep.v2i2.9858>
- Hernandez, R. (2017). Impacto de las TIC en la educación: Retos y perspectivas. *Propósitos y Representaciones*, 5(1), 325. <https://doi.org/10.20511/pyr2017.v5n1.149>

- Ideland, M. (2021). Google and the end of the teacher? How a figuration of the teacher is produced through an ed-tech discourse. *Learning, Media and Technology*, 46(1), 33-46. <https://doi.org/10.1080/17439884.2020.1809452>
- Inga, M., Garcia, D., Castro, A., & Erazo, J. (2020). Educación y Covid-19: Percepciones docentes para enfrentar la pandemia. *Revista Arbitrada Interdisciplinaria Koinonía*, 5(1), 310-331. <https://dialnet.unirioja.es/servlet/articulo?codigo=7610725>
- Jiménez, D., Sancho, P., & Sanchez, S. (2019). Perfil del futuro docente: Nuevos retos en el marco de EEES. *Contextos Educativos. Revista de Educación*, 23, 125. <https://doi.org/10.18172/con.3471>
- Lorenzo, G., Lorenzo, A., & Lledó, A. (2019). Las TIC en el contexto educativo a través de la producción científica en español. *Revista General de Información y Documentación*, 29(2), 287-307. <https://doi.org/10.5209/rgid.66969>
- Marín, V., & Sampedro, B. (2016). Web 2.0 en la dinamización y participación familiar y comunitaria. *Journal of New Approaches in Educational Research*, 6(1), 38-43. <https://doi.org/10.7821/naer.2016.1.137>
- Martínez, F. (2018). Reflexiones sobre las políticas educativas. *Revista Latinoamericana de Estudios Educativos*, 48(2), 71-96. <https://doi.org/10.48102/rlee.2018.48.2.47>
- Mishra, P., Pandey, C., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of Cardiac Anaesthesia*, 22(1), 67. https://doi.org/10.4103/aca.ACA_157_18
- Moreira, J., & Schlemmer, E. (2020). Por um novo conceito e paradigma de educação digital onlife. *Revista UFG*, 20. <https://doi.org/10.5216/revufg.v20.63438>
- Pardo, I., Marín, D., & De Castro, A. (2021). Aprendizajes para la vida a través de la implementación de estrategias didácticas digitales: un estudio comparativo de casos. *Revista Iberoamericana de Educación*, 85(1), 17-38. <https://doi.org/10.35362/rie8514044>
- Parra, M. (2020). Actividades Lúdicas como Estrategias de Transición Educativa. *Revista Científica*, 5(17), 143-163. <https://doi.org/10.29394/Scientific.issn.2542-2987.2020.5.17.7.143-163>
- Ponce, M. (2016). Self-managed learning in students within technology-mediated environments. *Diálogos sobre Educación*, 12. <https://doi.org/10.32870/dse.v0i12.258>
- Porras, A. (2017). *Conceptos básicos de estadística*. [https://centrogeo.repositorioinstitucional.mx/jspui/bitstream/1012/157/1/13-Conceptos Básicos de Estadística - Diplomado en Análisis de Información Geoespacial.pdf](https://centrogeo.repositorioinstitucional.mx/jspui/bitstream/1012/157/1/13-Conceptos%20Básicos%20de%20Estadística%20-%20Diplomado%20en%20Análisis%20de%20Información%20Geoespacial.pdf)
- Porras, S., Pérez, C., Checa, P., & Luque, B. (2020). Competencias emocionales de las futuras personas docentes: un estudio sobre los niveles de inteligencia emocional y empatía. *Revista Educación*, 76-90. <https://doi.org/10.15517/revedu.v44i2.38438>

- Ramirez, G. (2021). La familia y el juego como estrategia de aprendizaje a distancia durante la pandemia del Covid-19 en México: Una propuesta desde la enseñanza universitaria en ciencias de la salud. *Revista de Educación a Distancia (RED)*, 21(65). <https://doi.org/10.6018/red.456231>
- Ríos, P. (2018). *Elaboración de un plan de negocios para la empresa Rubens Sport en la ciudad de Riobamba, provincia de Chimborazo, periodo 2019-2021. Proyecto de investigación. Escuela superior politécnica de Chimborazo Facultad de Administración de Empresas, Ecuador* [Escuela Superior Politécnica de Chimborazo]. <http://dspace.esPOCH.edu.ec/handle/123456789/10248>
- Rodríguez, A., Trujillo, J., & Sánchez, J. (2019). Impacto de la productividad científica sobre competencia digital de los futuros docentes: aproximación bibliométrica en Scopus y Web of Science. *Revista Complutense de Educación*, 30(2). <https://doi.org/10.5209/RCED.58862>
- Rodríguez, M., Castellar, A., & Barrios, O. (2021). *Desafíos de las universidades ante la sociedad del conocimiento, la era digital y la electrónica para la formación profesional* [Corporación Universidad de la Costa]. <https://hdl.handle.net/11323/8402%0A%0A>
- Ruiz, F., Cebrián, V., & Cebrián, M. (2021). Redes profesionales en tiempo de Covid19: compartiendo buenas prácticas para el uso de TIC en el prácticum. *Revista Practicum*, 6(1), 7-25. <https://doi.org/10.24310/RevPracticumrep.v6i1.12283>
- Ruiz, M. (2020). Formación de formadores en el marco de la educación intercultural: estado del arte. *Hojas y Hablas*, 19, 48-66. <https://doi.org/10.29151/hojasyhablas.n19a3>
- Sánchez, H., Reyes, C., & Mejía, K. (2018). *Manual de términos en investigación científica, tecnológica y humanística* [Universidad Ricardo Palma]. <http://repositorio.urp.edu.pe/handle/URP/1480>
- Sangrá, A., Raffaghelli, J., González, M., & Muñoz, P. (2021). Primary school teachers' professional development through the learning ecologies lens: new ways for keeping up to date in uncertain times. *PUBLICACIONES*, 51(3), 21-70. <https://doi.org/10.30827/publicaciones.v51i3.20790>
- Schleicher, A. (2019). *PISA 2018: Insights and Interpretations*. <https://eric.ed.gov/?id=ED601150>
- Sebastiani, E., & Campos, J. (2019). *Gamificación en Educación Física. Reflexiones y propuestas para sorprender a tu alumnado*. Editorial INDE.
- Subinas, J. (2021). La dualidad social en los estudios de opinión en Panamá (octubre de 2019-febrero de 2021). *Revista Política*, 59(1), 183. <https://doi.org/10.5354/0719-5338.2021.61804>
- Tamayo, M. (2017). *El proceso de la investigación científica*. Editorial Limusa. https://www.gob.mx/cms/uploads/attachment/file/227860/El_proceso_de_la_investigacion_cientifica_Mario_Tamayo.pdf
- Torres, M. (2015). Inclusión de las TIC en el área de Educación Física (tercer ciclo de Educación Primaria). *Revista Tecnología, Ciencia y Educación*, 84-89. <https://doi.org/10.51302/tce.2015.30>