Descripción de criterios sobre presentaciones digitales en Power Point con estudiantes del curso postuniversitario en competencias docentes

Description of criteria on power point digital presentations with students of the post-university course in teaching competencias

Descrição de critérios em apresentações digitais em Power Point com alunos do curso pós-universitário de competências pedagógicas

Antonio Hurtado Huicochea
Centro de Actualización del Magisterio de Iguala, México
antoniohurtado80@gmail.com
https://orcid.org/0000-0002-3358-8360

Resumen

En el presente estudio, se enfocó en el material didáctico digital. El objetivo de la investigación es describir los criterios empleados por los estudiantes del segundo semestre del curso postuniversitario en competencias docentes del Centro de Actualización del Magisterio de Iguala, Guerrero, para elaborar sus presentaciones digitales en PowerPoint. La investigación es de corte cuantitativo y se llevó a cabo mediante la aplicación de dos instrumentos investigativos. El primero fue un test con escala de Likert, donde se incorporaron las categorías de pedagogía, diseño y tecnología; el segundo recurso fue una lista de cotejo en la que se analizaron los criterios de presentación y contenido adecuado para el alumno.

Los resultados evidenciaron que los docentes manejan de forma correcta los criterios correspondientes a las categorías de la escala de Likert. En cuanto a si es adecuado para el alumno, según la lista de cotejo, se obtuvo que menos de la mitad de los encuestados intercalaban la presentación con otros materiales didácticos. Sin embargo, en general, se puede considerar que los estudiantes de posgrado encuestados dominan el manejo de esta

herramienta tecnológica de la información, pero desconocen elementos teóricos que les ayuden a desarrollar de forma esquemática sus materiales didácticos digitales.

Palabras Clave: material didáctico, tecnología de la información, estudiantes posuniversitarios.

Abstract

The present study focused on the digital teaching materials, in order to aim the research to describe the criteria used by students in the second semester of the post-university course in teaching competencies of the Teacher Training Centre of Iguala, Guerrero to craft digital presentations on Power Point. The research is quantitative and was carried out through the application of two instruments, the first one was a test with Likert scale in which the categories of pedagogy, design and technology were incorporated, the second resource was a checklist, where presentation criteria and appropriate content for the student were analysed. The results showed that teachers manage in the correct form the criteria corresponding to the categories of Likert scale, in regards whether it is the right one for the student, from the checklist it was obtained, that less than half of the interviewed, used the presentation with other teaching materials. However, as a general whole, it can be considered that the postgraduate students have a great domain of this technological information tool, but they lack of theoretical knowledge that will help them to develop their digital didactic materials.

Keywords: teaching materials, postgraduate students, Information technology.

Resumo

No presente estudo, ele se concentrou no material didático digital. O objetivo da pesquisa é descrever os critérios utilizados pelos alunos do segundo semestre do curso pós-universitário em competências docentes do Centro de Atualização Docente de Iguala, Guerrero, para preparar suas apresentações digitais em PowerPoint. A pesquisa é quantitativa e foi realizada por meio da aplicação de dois instrumentos investigativos. A primeira foi um teste com escala Likert, onde foram incorporadas as categorias de pedagogia, design e tecnologia; O segundo recurso foi um checklist no qual foram analisados os critérios de apresentação e o conteúdo adequado para o aluno.

Os resultados mostraram que os professores manejam corretamente os critérios correspondentes às categorias da escala Likert. Sobre se é adequado para o aluno, de acordo com o checklist, obteve-se que menos da metade dos respondentes intercalaram a apresentação com outros materiais didáticos. No entanto, de maneira geral, pode-se considerar que os pós-graduandos pesquisados dominam o uso dessa ferramenta de informática, mas desconhecem elementos teóricos que os auxiliem a desenvolver esquematicamente seus materiais didáticos digitais.

Palavras-chave: material didático, tecnologia da informação, pós-universitários.

Introduction

This paper deals with a study in which the foundations used by teachers in the second semester of the post-university course in teaching skills to prepare digital presentations were investigated. These presentations are used to teach classes in their workplaces with the support of software called PowerPoint.

The study was carried out at the Teacher Update Center in the city of Iguala, Guerrero. The population studied was made up of teachers versus a group that taught classes at the preschool, primary, and secondary levels. The analysis arises because, during the second semester of the post-university course, the subject of didactic strategies for the development of competences is taught, where it is sought, among other things, that students acquire digital competences and, through these, promote the process of teaching-learning.

E-learning is one of the most widely used models today, as mentioned by Montoya et al. (2019), because this paradigm has reinforced the idea of conducting the study in question. With the support of information and communication technologies (ICT), teachers prepare the teaching material digitally (MDD), and its use must comply with specific characteristics, which were taken into account during the development of this work. . In line with the ideas of Area (2019), didactic resources must contain key guidelines when selecting and preparing content. Likewise, its design must be a dynamic work strategy (Real, 2019).

Given that currently teachers, in general, have seen the need to modify their teaching strategies, as expressed by Linne (2021), in the research carried out, criteria were analyzed on the structure of the didactic material prepared by the participants of the post-university

course to carry out their teaching work. For this reason, the study has sought to answer the following questions:

- Is the curriculum taken into account to structure the digital presentations?
- Are the digital presentations attached to the student's reality?
- Is the material used interactive?

Ayala (2020) mentions the existence of elements that must be taken into account when generating an electronic presentation, and these are: the text, the image and the format. Therefore, with the support of a Likert scale and a checklist, pedagogical, design and technological aspects were analyzed. All this to have a reference on the didactic material in digital format that the teachers of the post-university course prepare, with the support of the PowerPoint software.

Finally, the main objective of the study consisted of describing the criteria used by students of the post-university course to make didactic material in digital version, responding to the technical recommendations issued for this purpose. Therefore, two instruments were applied in this investigation, which have been mentioned in the previous paragraph. This action is also reinforced with the support of some ideas expressed by Lezcano and Vilanova (2017) in their article on learning assessment instruments in virtual environments.

Materials and methods

The study was based on a quantitative descriptive approach. That said, and as Baena (2017) mentions, this method helps to understand the situation as a whole by taking its properties into account. Therefore, this work proposal was based on analyzing the didactic material in digital version prepared by the group of students of the post-university course mentioned above, who served as the population to be investigated. A checklist and a Likert scale test were used, where statistical information was obtained with the support of three categories of analysis.

The research approach is descriptive, since it is intended to describe and analyze the information generated from the application of the two investigative tools mentioned in the previous paragraph. The general objective of the research is to describe the relationship between the criteria used by teachers to carry out their didactic material with the support of the software known as PowerPoint and the technical recommendations. It is intended to

identify, describe and explain how teachers in continuous training carry out their classes with the support of this digital tool.

The steps that served as a guide for the development of the research instruments are shown below:

- Define the categories of analysis that guide the collection and analysis of data.
- Systematize and process the information obtained with the support of the following categories of analysis: pedagogical, design and technological.
- Identify relationships between the information collected through the Likert scale and the digital didactic material prepared by the respondents in relation to the preparation.

Application instruments

For the development of this research, two instruments were designed. The first consists of a Likert scale made up of 12 statements that were based on three indicators: pedagogical, design and technological. It should be noted that the parameters of the instrument in question were taken from standard 71362:2020, focused on the "Quality of digital educational materials" (Spanish Standardization, 2020).

The categories, subcategories of analysis and indicators are presented below:

Table 1. Analysis categories for (MDD)

Categories of analysis	Subcategory of análisis	Indicators
Pedagogical	Contents	The content is presented in a clear, understandable manner and is up to date.
	Objectives	The instructional objectives are specified clearly and precisely.
	Prior knowledge	I identify if the students have prior knowledge and, if so, what it is.
	Generate learning	Creativity and innovation are encouraged, allowing students to generate new ideas and ways of applying them.
Design	Interactivity	It encourages student participation during reading, viewing, or interacting with the resource.
	Adaptability	The content or activity can be easily modified to accommodate different types of students.
	Design	It includes a multimodal format (variety of formats): text, image, audio, and/or video.
	Reusability	It can be used on any device (with or without an internet connection).
Technological	Technical stability	It functions correctly and does not experience any failures during use.
	Navigation	The navigation is compatible with different platforms and devices, with links that open correctly in a new window.
	Audiovisual content	There is sufficient contrast between the color of the images and the background color to ensure good visibility.
	Textual content	The text is legible and/or its size can be adjusted.

Source: self made

The Likert scale assessment was as follows:

- Always 5 points
- Almost always 4 points
- Sometimes 3 points
- Almost never 2
- Never 1 point

The second instrument that was developed was a checklist made up of 10 criteria, based on some parameters that must be taken into account to prepare the didactic material in digital version, as proposed by González et al. (2018) from the technical aspect. It should be noted that said research instrument is divided into two sections: presentation and content suitable for the student, in accordance with the proposal by Spanish Normalization (2020). The criteria used are shown below:

1. The activity has been scheduled so that the entire presentation does not contain more than 20 slides.
2. The format of the content in each of the slides is properly centered and in order.
3. There is moderate and convenient use of animation effects.
4. Care is taken not to overload the slides with unnecessary or merely decorative material.
5. The information presented is relevant to the student and to the subject in general.
6. The necessary depth is provided, according to its importance, to each of the thematic aspects developed.
7. During the presentation, the teacher avoids at all times dedicating himself only to reading the text of the slides.
8. The projection is interspersed with other didactic resources, such as group dynamics, case studies, problem solving, etc.
9. During the presentation, relevant examples, appropriate anecdotes or motivational comments are provided.
10. The teacher's main role is to interpret, comment and expand the information that appears on the slides.

The assessment to analyze the information obtained was as follows:

- Excellent: 20-18 points

- Good: 17-15 points

- Regular: 14-12 points

Sample selection

Both instruments were applied to the 20 students that make up the second semester of the post-university course in teaching skills. The type of sample was non-probabilistic for convenience. The development of the surveys was carried out with the support of the Google Forms tool.

Results

Having exposed the characteristics of the instruments used in the research, then, in the following section, the most relevant information generated by applying a form on the Google platform to the 20 students of the post-university course in teaching skills is presented. Graphs are included for ease of understanding.

**Figure 1.** The content I present is clear, understandable and updated
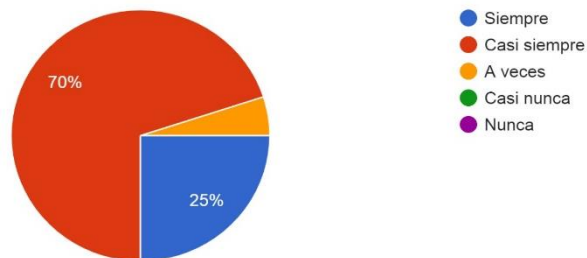
Source: self made

Figure 1 shows that 25% of respondents consider that the content of their topics is always clear, understandable and up-to-date. On the other hand, 70% argued that their content almost always presents these three attributes, and 5% answered that sometimes it meets these parameters.

Figure 2. I explain the didactic objectives clearly and precisely
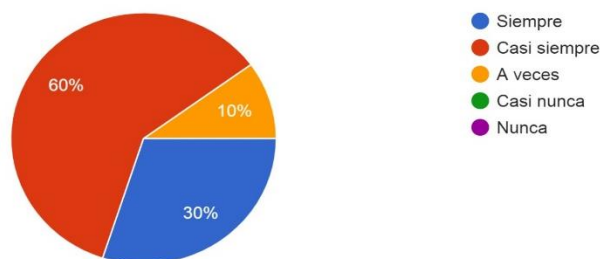
Source: self made

The result obtained from Figure 2 indicates that 30% of the respondents always explain the didactic objectives clearly and precisely, while 60% almost always perform this action. The rest, 10%, argued that sometimes they comment on the didactic objectives.

Figure 3. I encourage creativity and innovation
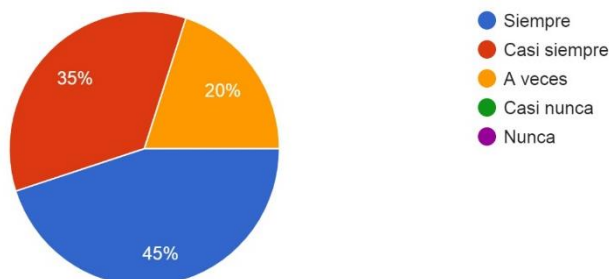
Source: self made

In Figure 3, it was obtained that 45% of the respondents always encourage creativity and innovation so that students generate ideas and ways to apply what they have learned. 35% almost always perform this action, and the remaining 20% do it sometimes.

Figure 4. I encourage student participation during the digital presentation
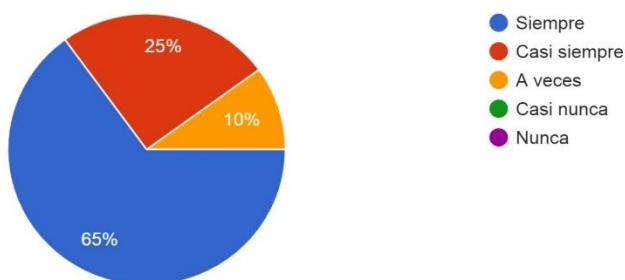
Source: self made

The percentages obtained in Figure 4 show that 65% of the respondents always encourage student participation during the digital presentation. On the other hand, 25% argued that they almost always perform this action, while 10% do it sometimes.

Figure 5. The digital presentation that I expose includes: text, image, audio and/or video
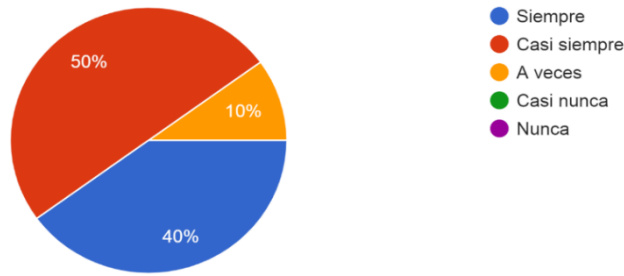
Source: self made

The results from Figure 5 show that 40% of students always include text, image, audio and/or video elements in their presentations. For their part, 50% sometimes use the four elements in their digital presentation, and 10% do so sometimes.

Figure 6. Digital presentation is compatible with different platforms and devices
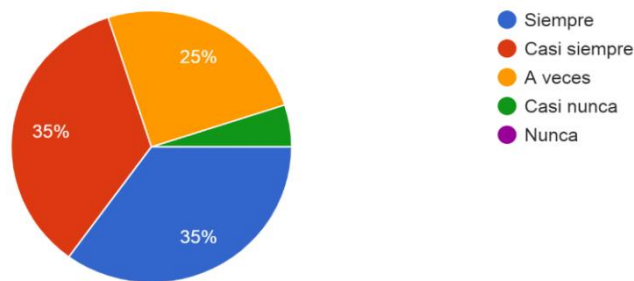
Source: self made

In the information shown in Figure 6, 35% of the respondents answered that their digital presentations are always compatible with any device and that their links always open in a window. 35% almost always apply the criteria of compatibility and functionality of links. For the 25%, they sometimes get their presentations to work correctly, and for the remaining 5%, they almost never do.
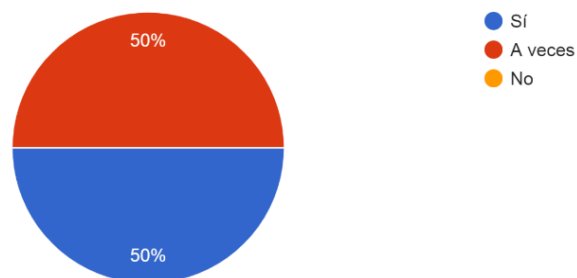
Figure 7. The information presented is relevant to students
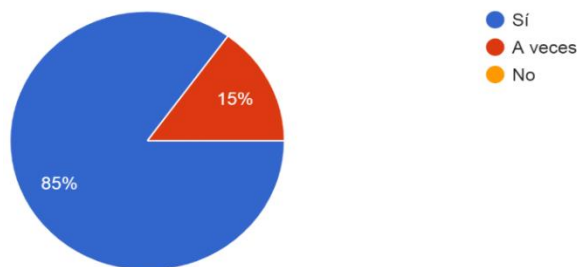
Source: self made

Figure 7 shows that 85% of those surveyed take into account that the information used in their digital presentations is relevant to students, while the remaining 15% also carry out this action.
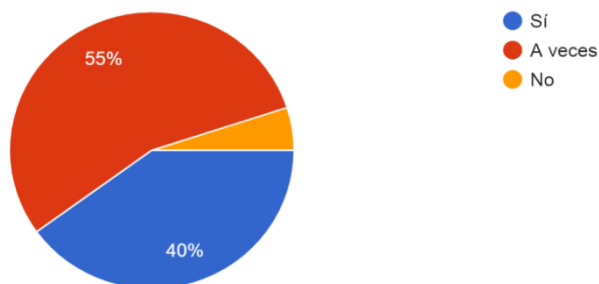
Figure 8. Provides necessary depth in topics

Source: self made

Figure 8 shows that 50% of the respondents do provide detailed explanations of the topics if necessary, while the other 50% do not carry out this task.
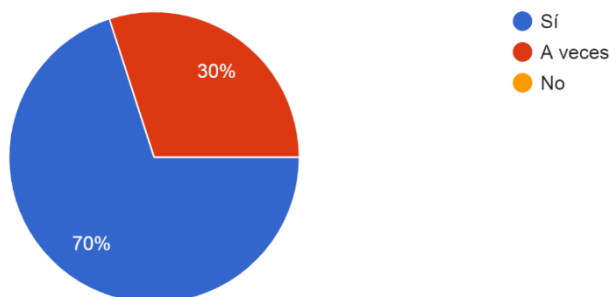
Figure 9. I combine the presentation with other didactic resources

Source: self made

Figure 9 shows that 40% of the respondents manage to mix other didactic resources with the digital presentation, 55% sometimes carry out this action, while 5% do not take this parameter into account.

Figure 10. Pertinent examples are provided during the exposition

Source: self made

Figure 10 shows that 70% of respondents provide relevant examples, while the remaining 30% do not take this action into account.

Discussion

The elaboration of digital presentations is not an easy task, as stated by Elizondo (2021), because a series of parameters must be met that favor the understanding of the subject in question. Therefore, in the following lines the results corresponding to the Likert scale are presented, as well as what refers to the checklist.

For Fuentes et al. (2019), the use of slides is not a relatively new resource for those who create didactic material digitally; However, for the development of this research, it was necessary to analyze the use of PowerPoint, since one of the limitations that was observed to carry out the study was the lack of computer equipment and internet in the educational institutions where the students of the post-university course they provide their services.

The results obtained from the Likert scale indicate that, within the category of pedagogical analysis, at least 80% of the teachers surveyed do not present problems regarding the presentation of content. However, it was evidenced that there are difficulties in terms of the generation of relevant knowledge and the promotion of creativity. In addition to this, in the part of presenting objectives, it was also exposed that they do not always carry out this action, which is essential at the beginning of a digital presentation.

This point contrasts the ideas of Barreda (2021) since, in the presentation stage of a topic with the support of didactic materials in digital version, the speaker is required to have a clear and well-structured message about what he wants to achieve. . In this case, it focuses on explaining the objectives to be achieved and, in this way, improving the learning process.

In the category of technology, at least 75% of the teachers surveyed answered that they take into account the subcategories of analysis related to audiovisual, textual and compatibility content. This is a favorable point, since Tippe and Soto (2021) suggest that teachers must have technological capabilities that adapt to the needs of students and the environment.

Taking into account the information obtained from the Likert scale, it was observed that the students of the post-university course perform a good management of information technologies, specifically in technological and design issues. However, in the pedagogical part there are areas that must be improved, hence the importance of having support materials that serve as a guide, such as the one proposed by the Spanish Standardization (2020). This allows teachers to generate better structured digital presentations that favor the teaching-learning process.

Regarding the categories of design and technology, there is a similarity to the ideas proposed by Maroto (2008), since in both investigations aspects such as the size of the text, quality of the images, etc. are taken into account. As for what the studies differ, it is in the category of pedagogical analysis, because this investigative work contemplates whether the respondents carry out the following actions: that the content is updated, the generation of a clear explanation about the objectives to be achieved, that take into account the previous learning of the students and the generation of new learning.

Using a checklist to prepare a digital presentation is useful for evaluating learning aimed at knowing how to do and knowing how to be, as mentioned by Pérez (2018). Therefore, below is a brief discussion of the results obtained in the application of the Google form.

Based on the information obtained, it was observed that the students of the post-university course do consider the number of slides to use in their digital presentations, that is, that they do not exceed 20 and, in turn, avoid using material loaded with images.

Regarding the aspect of using appropriate content for the student, it was observed that approximately 50% of the teachers surveyed care about presenting relevant content in their classes. This information shows that the other half of the sample fails to carry out this action. The results obtained coincide with a study on digital skills carried out by Guillén et al. (2020),

since they mention that these types of processes are due to failures in teacher training, because they continue to use traditional methods in the teaching-learning processes.

Regarding the parameter of inserting the presentation with other digital resources, the results showed that 55% of the students of the post-university course present difficulties, since they do not always take this action into account. I believe that this factor is also related to what was exposed by Guillén et al. (2020), because teachers sometimes present a low level of attitude towards the use of ICT and a lack of will regarding the subject of innovation.

In the information obtained from the last graph, it can be seen that the students of the post-university course adhere to the reality of the student, taking into account relevant examples when making an explanation. At the same time, they try to expand the subject in an appropriate way and are flexible with the explanations to the students when necessary. According to Di Pizzo and Cabrera (2021), this fact makes them dynamic agents in the educational field. However, in relation to what was mentioned in the previous paragraph, despite providing feedback, they lack in innovation issues.

Conclusions

It is prudent to mention that, although it is true that the students of the post-university course show a mastery in the design and technological use part, they must strengthen the pedagogical aspect, since they must always expose the objectives to be achieved of the topic to be exposed, and the information Likert scale showed that they sometimes omitted this action. Another part to be strengthened is the one related to the subcategory of generating learning, because the respondents presented difficulties in terms of the creative and innovative part.

In order to answer the first question posed at the beginning of this investigation and taking into account the data obtained from the applied instruments, it is concluded that the students of the post-university course take into account the curriculum to develop their presentations, which is beneficial for the development of learning in students. On the other hand, it was possible to appreciate that they do not have theoretical references that serve as support to develop a better structured didactic material in digital format.

Regarding the third question, which refers to interactivity, it is shown that post-university course students take into account the use of animation effects, images, audio and/or videos, as well as the compatibility of presentations with different devices. This shows that they make effective use of information and communication technologies.

Finally, it was possible to appreciate that, despite the deficiencies in terms of the availability of internet connection in most of the workplaces, the students of the post-university course make their best effort in terms of the development of didactic material in digital format. A proposal that emerges as a result of this study is to grant training in the subject that is taught in the second semester of the master's degree, called "Didactic Strategies", on the use of pedagogical references to improve their presentations.

Future lines of research

Finally, it is worth mentioning that this research can be useful in future research if the Likert scale and the checklist are taken as references, since they contain valuable and useful elements as references to analyze teacher training processes, educational practices, materials didactics elaborated in technological platforms and management of software focused on digital presentations.

References

Area, M. (2019). La Escuela de la Sociedad Digital: Análisis y propuestas para la producción y uso de materiales didácticos digitales. *RIULL*.

Ayala, M. (9 de septiembre 2020). Presentaciones electrónicas: para qué sirven, características y elementos. *Lifeder*. https://www.lifeder.com/presentacion-electronica/.

Baena, G. (2017). Metodología de la investigación (3ra ed). *Patria*.

Barreda, D. (2021). El formador 5.0. *LID*.

Di Pizzo, M. y Cabrera, B. (2021). ¿Ejecutores, implementadores o agentes curriculares? Perfiles docentes en relación al curriculum. *Cuadernos de Investigación Educativa*, 12(2), 1-26.
https://doi.org/10.18861/cied.2021.12.2.3048

Elizondo, J. (2021). Creación de presentaciones digitales como recurso efectivo para el aprendizaje. Centro de Capacitación en Educación a Distancia (CECED), de la *Universidad Estatal a Distancia* (UNED).

Fuentes, A., López, J., y Pozo, S. (2019). Análisis de la Competencia Digital Docente:Factor Clave en el Desempeño de Pedagogías Activas con Realidad Aumentada. *Revista Iberoamericana sobre Calidad, Eficacia y Cambio en Educación*, 17 (2).
https://doi.org/10.15366/reice2019.17.2.002

Guillén, F. D., Mayorga, M., y Álvarez, F. J. (2020). A study on the actual use of digital competence in the practicum of education degree. *Technology, Knowledge and Learning,* 25(4), 667-684.
https://doi.org/10.1007/s10758-018-9390-z

González, C., Martín, S. y Vega, A. (2018). Portales educativos: la producción de materiales didácticos digitales. @*tic. revista d'innovació educativa*, 1(13),89-97.
https://doi.org/10.7203/attic.20.12139

Lezcano, L., y Vilanova, G. (2017). Instrumentos de evaluación de aprendizaje en entornos virtuales. Perspectiva de estudiantes y aportes de docentes. *Informe Científico Técnico UNPA*, 9(1), 1-36.

Linne, J. (2021). La educación del siglo XXI en tiempos de pandemia. *Ciencia, Docencia y Tecnología*, 32 (62), 1-18.

Montoya, A., Parra, C., Lescay , A., Cabello , A. y Coloma , R. (2019). Teorías pedagógicas que sustentan el aprendizaje con el uso de las Tecnologías de la Información y las Comunicaciones. *Revista Información Científica*, 98(2), 241-255.

Pérez, C. (2018). Uso de lista de cotejo. Colección docente: "Serie apoyo a la docencia No. 1". *Universidad Tecnológica Metropolitana*.

Real, T. (2019). Materiales didácticos digitales: un recurso innovador en la docencia del siglo XXI. *3C TIC*. *Cuadernos de desarrollo aplicados a las TIC*, 8(2), 1-15. http://dx.doi.org/10.17993/3ctic.2019.82.12-27

Tippe, S., y Soto, S. (2021). Política educacional para una modalidad e-learning en la universidad a partir de la pandemia. *Revista Digital de Investigación en Docencia Universitaria*, 15(2),1-13.
https://doi.org/10.19083/ridu.2021.1306

Maroto, O., (2008). El uso de las presentaciones digitales en la educación superior: una reflexión sobre la práctica. *Revista Electrónica "Actualidades Investigativas en Educación",* 8(2), 1-21.

Normalización Española. (2020). *Norma UNE 71362:2020* de Calidad de los materiales educativos digitales. https://www.une.org/encuentra-tu-norma /busca-tu norma/norma/?c=N0063263.