

Approach to the theoretical foundation of the elements that intervene in communication interactivity in online classes

Aproximación a la fundamentación teórica sobre los elementos que intervienen en la interactividad comunicacional en las clases online

Abordagem à fundamentação teórica dos elementos que intervêm na interatividade comunicacional em aulas online

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Abstract

The purpose of this work is to build the theoretical foundation that guides the construction of the elements that intervene in the communication development of virtual classes. For the development of this research, a bibliographic review has been carried out, which has served as a basis for the theoretical framework of the research. A type of qualitative information was followed for the argumentative design of the internal and external elements that intervene in online educational communicational interactivity. This article constitutes a preview of the conceptual contributions to the Communication and Information Technologies research line of the Tecnológico Universitario Espíritu Santo and responds to a result of the research project: Post-Pandemic Virtual Communicational Learning Environments at the Tecnológico Universitario Espíritu Santo and Unidad Educativa Letras y Vida

Keywords: Information and Communication Technologies, Communication, Education.

Resumen

El presente trabajo tiene como propósito construir la fundamentación teórica que oriente a la construcción de los elementos que intervienen en el desarrollo comunicacional de las clases virtuales. Para el desarrollo de esta investigación se ha realizado una revisión bibliográfica, la cual ha servido de base para el marco teórico de la investigación. Se siguió un tipo de indagación cualitativa para el diseño argumentativo de los elementos internos y externos que

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intervienen en la interactividad comunicacional educativa online. Este artículo constituye un avance de los aportes conceptuales a la línea de investigación de Comunicación y Tecnologías de la Información del Tecnológico Universitario Espíritu Santo y responde a un resultado del proyecto de investigación: Entornos Virtuales Comunicacionales de Aprendizaje Post Pandemia en el Tecnológico Universitario Espíritu Santo y Unidad Educativa Letras y Vida

Palabras clave: Tecnologías de la Información y Comunicación, Comunicación, Educación.

Resumo

O objetivo deste trabalho é construir a fundamentação teórica que norteia a construção dos elementos que intervêm no desenvolvimento comunicacional das aulas virtuais. Para o desenvolvimento desta pesquisa, foi realizada uma revisão bibliográfica, que serviu de base para o referencial teórico da pesquisa. Seguiu-se um tipo de informação qualitativa para a conceção argumentativa dos elementos internos e externos que intervêm na interatividade comunicacional educativa em linha. Este artigo constitui uma antevisão dos contributos conceptuais para a linha de investigação Tecnologias da Comunicação e da Informação do Tecnológico Universitario Espíritu Santo e responde a um resultado do projeto de investigación: Ambientes Virtuales Comunicacionales de Aprendizagem Pós-Pandémicos do Tecnológico Universitario Espíritu Santo e da Unidade Educativa Letras y Vida

Palavras-chave: Tecnologias da Informação e Comunicação, Comunicação, Educação.

INTRODUCTION

Ecuador is the seventh country in Latin America in terms of estimated investment in educational connectivity, taking into account that this progress responds to the mandatory closure that occurred during the first year of the Pandemic. Countries such as Mexico, Brazil, Colombia, Guatemala, among others, are added to this growing investment (World Bank Group, 2021).

In the educational field, the exponential development of the use of technological devices and the use of the Internet at home is one of the first phenomena that, according to UNESCO (2002), has had an impact on the advancement of educational models in countries such as Ecuador. Another phenomenon that also accompanies the rise of online classes, is learning and the wide range of existing methods

around technological advances and continuous and formal training (OECD, 1998).

The COVID-19 pandemic generated a sphere of economic uncertainty in households around the world. To such an extent that the United Nations Educational, Scientific and Cultural Organization (2020) warned of this crisis, noting that more than 190 countries were affected with the closure of educational institutions at various levels: primary, secondary and university.

However, this health problem generated pressure on communities and the governmental system in the educational field, to open facilities for Internet access, acquisition of technological resources and training for the mastery of learning tools in the virtual educational system (Pantoja et. al, 2021).

In Ecuador, before the abrupt insertion of the Pandemic, third level educational institutions such as the Universidad Particular de Loja, already maintained an academic offer from the distance modality. This type of system was aimed at the accessibility of studies for a population whose training alternative was adjusted to the use of the virtual classroom and development of the activities of the subjects through the use of a web portal (Moncayo, Pereira & González, 2018).

In the case of educational institutions such as Tecnológico Universitario Espíritu Santo, the introduction of online classes came with the appearance of Pandemic COVID-19. Mechanism that to this day is maintained, diversified in subjects that are taught 100% online; other subjects, in hybrid and face-to-face modality (TES, 2023).

This article focuses on the theoretical foundations that provide significant contributions to the construction of virtual classes and their insertion in the educational community at the peak of this model, such as the Pandemic and its aftermath. For this, a review will be made of the conceptualizations and studies that have given significant steps to the advancement and innovation of the development of online classes as an adaptive tool to chaotic social, health and economic environments such as the COVID-19 Pandemic, among others.

And specifically, to describe the theoretical foundations of synchronous and asynchronous systems of interactivity in online classes. Likewise, to establish the differentiating elements that technological resources have in the communicational dynamism of telematic teaching. In England in 1840 "Isaac Pitman programmed a shorthand system based on cards and postal exchange with

students..." giving way to distance classes (García, 2019). This was the starting point to give way to a study model that broke barriers such as geography and the physical space of the classroom as a traditional classroom.

However, its adaptability by the students belonging to this community was not easy, since it was sustained by tools, such as: ...written material through the accompaniment of study aid guides, the systematic introduction of complementary activities to each lesson, as well as workbooks, exercises and evaluation notebooks, which promoted some kind of relationship of the student with the institution, the material and the author of the text and which facilitated the application of what was learned and guided independent study... (p. 13).

Multimedia teaching

At the end of the 1960s, another modality of study called distance learning was adjusted, being its dissemination supports the radio and TV (García. 2019). This system was maintained in Ecuador until the end of 2015 with the retransmission of trainings with educational material related to workshops, cooking, construction and other disciplines by the Municipality of Guayaquil, space named *Aprendamos* (Municipality of Guayaquil, S.f).

The design, production and generation of didactic materials lent itself to their massification in different technological platforms. However, the decline of TV and radio as a support for the expansion of educational contents caused this system to lose the acceptance it had in the 90s, mainly in Latin America, the place of greatest boom (Gonzales, S.f).

Telematic teaching

By the 90's technological innovation and internet give way to another model of studies, virtual teaching, as an educational offer in mid-1996 (Acosta, Cervantes & Bustos, 2011). These two models, distance and virtual education, became adaptive spaces, in habitats in which they captured a population that presented difficulties to accommodate to a rigid schedule or to move to a physical classroom continuously.

This study model had greater reach worldwide, with the Pandemic, since preventive isolation was an element that contributed to the sustainability of this educational system. Authors such as Samaniego (2020) make severe reflections that connect with the reality of telematic education during and after the Pandemic, since "the overdose of screens" in homes continues to be a pressing element in the face of submersion to this teaching model.

With the insertion of the Pandemic in the world, the efforts of international organizations in establishing general protocols, included guidelines that generate great contribution to the current reality in the development of virtual classes in countries where this type of methodology was totally new (United Nations, 2020). Among the recommendations, the following stand out: Examine the state of readiness and choose the most relevant tools... Ensure the inclusiveness of distance learning programs... Protect privacy and data security... Implement solutions to psychosocial problems before teaching... Plan the development of distance learning programs... Provide teachers and students with assistance in the use of digital tools... To combine the appropriate approaches and to limit the number of applications and platforms... To establish the rules for distance learning and to follow up the learning process of the students... To define the time of duration of the distance learning units in function of the self-regulation aptitudes of the students... To create communities and to favor the social links. (S.f)

MATERIALS AND METHODS

A review of the narrative literature was carried out, with different types of documents, among them: articles, theses, dissertations, online texts (Canuto & Souto, 2020). This methodology broadens a description of the topic, since the search for information is executed, placing its focus on updating studies related to the research. Giraldo (2011) citing Strauss and Corbin (2002) remarks on the grounding theory sustained in a comparative writing of contrast of conceptual positions that provide greater relevance to the study.

Likewise, Giraldo (2011) highlights some of the elements that characterize grounding theory as a methodology, such as: selection of studies for their relevance and pertinence, "...Performing a continuous comparison of incident with incident, identifies their properties, explores their interrelationships and manages to integrate them into a theory that keeps a reasonable logic..."

This article constitutes an advance of the conceptual contributions to the research line of Communication and Information Technologies of the Tecnológico Universitario Espíritu Santo and responds to a result of the research project: Entornos Virtuales Comunicacionales de Aprendizaje Post Pandemia en el Tecnológico Universitario Espíritu Santo y Unidad Educativa Letras y Vida.

By means of the bibliographic selection, it was possible to group a theoretical sample linked to contributions that potentialize to refine or expand the conceptualizations and theories already developed.

One of the elements of information segregation is the selection by publication dates and relevance of the study to the research topic. From the author Canuto & Souto (2020) this is referred to as data collection, marginalization and analysis.

In this study, more than 15 articles were identified and a smaller number of theses, reports from international organizations, observatories.

RESULTS

Influence of technological equipment in virtual classrooms.

Students

In the student environment, the most widely used technological instrument, due to its economic characteristics in relation to laptops, has been the smart cell phone. This mobile device, according to data from the Branch Agency (2023) only in 2022 of the 18 million inhabitants, 77% are Internet users. In addition to this, the function of smartphones, in a negative way, becomes a distraction for people. However, the Ecuadorian household has more than two cell phones than technological resources such as static computers, tablets or laptops.

On the other hand, Gómez, Enríquez & Sánchez (2020), the emerging generations from the 90's onwards become familiar with great ease and scope of learning with the tools belonging to the sphere that encompasses Information and Communication Technologies ICTs, communication with their communities (social networks) and personal organization. However, these same authors emphasize that the introduction of social networks in the interactivity of the classroom is due to the ease with which smart phones allow maintaining various applications of this type on the same device (Gómez, Enríquez & Sánchez,2020).

Within this framework, Hernández (2013) makes a reference to the culture of cell phone use in the development of the class in a virtual classroom, since teachers must introduce a protocol that adapts to the functionality fulfilled by this device and its internal tools, including its applications.

Teachers

The profile of the teacher in the development of virtual classes goes beyond the usual preparation such as: slides with the study material, workshops, evaluations, among others. With the rise of online classes, starting in 2020, teachers added two elements of preparation. The first, their physical environment for the development of online

classes. This factor falls, from the point of view of Rando (2021), on the place and technological equipment such as: the use of a static computer, headphones and a semi-professional microphone is recommended to prevent the ambient noise from interrupting the teacher's oratory development.

This adaptability environment also requires continuous training and preparation on the use of ICTs (Gómez, Enríquez & Sánchez, 2020). Rando (2021) emphasizes the resilience of teachers in the face of the abrupt change from a physical classroom to an online one caused by the Pandemic. In the case of Tecnológico Universitario Espíritu Santo, during and after the Pandemic, the continuous teacher training system focused on the constant updating of knowledge about telematic learning and the mastery of pedagogical technological resources for online teaching (TES, 2023).

Synchronous & Asynchronous Teaching

Duarte et. al, (2019) points out the great notoriety that the use of virtual platforms has acquired in formal education. On the other hand, one of the positive effects of Pandemic in education is innovation in teaching, since the use of technological resources makes:

...The Virtual Learning Environment EVA has crossed the boundaries of the conventional classroom and marks the direction towards the futuristic virtual classroom that is developed through the Learning Society and makes learning collaborative and lifelong (Cañizares et. al, 2021, p. 332).

In the study conducted by Cañizares et. al, (2021) citing Ricardo Chrobak and Ana Beatriz Prieto (2010) highlights some factors involved in the development of classes adjusted to this technological environment, such as: Organizing knowledge, making an outline of the intervention of content and workshops within the timeline of the class. The emotional impulse, as a tool of connection with the classroom. And finally, "constructively integrating thinking, feeling and acting, through experience".

Taking into account that these guidelines are now part of the so-called pre-production of an online class, it is also necessary to differentiate between synchronous and asynchronous teaching. In the university environment, at the beginning of the Pandemic, teaching turned to a virtual synchronous and asynchronous modality, dividing it into two phases of action (Alfaro, Ortega & Lozano, 2022). First, there are the virtual classrooms, whose class dynamics are generated synchronously, i.e., live, establishing a class schedule similar in time to the traditional modality. At this point, it should be emphasized that

in Ecuador there were negative factors that affected the dynamics of live classes such as: instability in Internet connectivity and power outages scheduled for 2023 (Ministry of Education, 2023).

In a second phase, there is asynchronous teaching, which gives the student independence in carrying out their academic activities. For Delgado (2020), one of the main features of this system focuses on the visualization and downloading of study material placed on the institution's web platform, allowing the "student to return to a lesson or activity and review if he/she has doubts". There is also the realization of activities or workshops, which are kept on a platform adjusted to deadlines.

Communication platforms in e-learning Virtual Classroom

Before the Pandemic, communication between teachers and students was mostly marked as a vertical interaction, delimited by the hierarchy represented by the physical classroom (Orejuela, 2010). Likewise, Delgado (2020) remarks the change that was generated from 2020 with the introduction of interactivity in a virtual classroom, where its users are in a horizontal communication, characterized by a spontaneous and continuous participation in various ways: written chat, use of emoticons, votes, microsalsas among others.

WhatsApp

WhatsApp has been one of the communication platforms with the greatest communication reach since its creation. But it is from 2020 that it is introduced with greater use in the educational community at various levels. Piriz, Sanabria & Leal (2020) point out some of the functions that made this social network the protagonist par excellence of communication and interactivity between educational institutions and students at the university level: 1. Social network most used by users, 2. It makes it possible to generate small groups that respond to the subjects or interactivity with the administrative body, 3.

In addition to these functions, this social network offers the possibility for the community to express their emotions through the use of emoticons, memes, gifs and stickers (Piriz, Sanabria & Leal, 2020).

Other interactive resources

In the development of expository content for the class and the selection of gamification tools to interact in the virtual classroom,

studies such as those presented by Gallegos (2020) in which he highlights the resources with greater use by teachers: CANVA, Genially, Powtoon among others. This perspective coincides with the research proposed by Tapia et. al, (2020).

Virtual education is then defined from the post-Pandemic point of view as a wireless study model that adjusts to the current demand by eliminating elements of the traditional model of a physical classroom such as: time and geography (Cañizares et. al, 2021). Thus, experiences in current research such as those proposed by Gómez, Enríquez & Sánchez (2020), Rando (2021), reaffirm the need for a mutable and adaptive innovation to the environment where multi-screen telematic teaching methods are developed.

CONCLUSIONS

The considerations of this research were oriented to build, in a first instance, an approach to the theoretical foundation around online classes and the influence of technological resources in the communicational interactivity between the educational and student community in the university environment.

Based on the above, it can be stated, in this first approach, that the development, innovation and boom of virtual classes achieved their popularity due to the COVID - 19 Pandemic. However, after the world went through a mandatory confinement and then an endless mobility restriction for more than a year, the educational system coined the online education model as part of the diversity of study methods in university academic training.

On the other hand, to generate an environment of adaptability in the preparation of didactic material for virtual classes, it is important that educational institutions should maintain their focus on continuing education for constant updating of knowledge related to the pre-production, production and post-production of content to be generated both in education in the virtual classroom and on the platform where the workshops and content of the subject will be exposed.

From this point, through training, the educational system has a greater probability of success in the proper management of the type of communication that the teacher should handle with students, taking into account the various social platforms where conversations related to the development of the content of the class are generated.

Finally, it is evident the need to adjust the communicational interactivity tools to the learning that the student community has with these tools, since this generates a probability of skill on the part of

the student in the realization and understanding of the didactics of the classroom from the virtual field. For this, the extra effort made by the teacher is recognized, when generating tutorial videos as part of the comprehensive communicative guide in the development of the dynamics of the class.

REFERENCES

- Acosta, L., Cervantes, R., & Bustos, E. (2011). *La Educación Virtual en los inicios del siglo XXI*. México: Sociedad Cooperativa.
- Alfaro, D., Ortega, B., & Lozano, B. (2022). Aplicación del análisis de varianza para comparar el aprendizaje de los estudiantes en tres modalidades: virtual sincrónica, virtual asincrónica y presencial. *Revista Guacamaya*, 60-72.
- Canuto, L., & Souto, A. (2020). Métodos de Revisión Bibliográficas en estudios científicos. *Psicología en Revista*, 82-100.
- Cañizares, F., Quevedo, N., & García, N. (2021). Retos de la enseñanza aprendizaje virtual- Creatividad del docentes, clases sincrónicas o asincrónicas y principios didácticos . *Revista Conrado*, 331-339.
- CEPAL, OREALC y UNESCO. (2020). *La educación en tiempos de la pandemia de COVID-19*. Washington DC: UNESCO.
- Delgado, P. (23 de junio de 2020). *Observatorio para el Futuro para la Educación*. Obtenido de ¿Conoces las diferencias entre el aprendizaje sincrónico y asíncrono? ¿Sus ventajas y desventajas? Aquí las explicamos. : <https://observatorio.tec.mx/edu-news/aprendizaje-sincronico-y-asincronico-definicion/>
- Duarte, M., Montalvo, D., & Valdes, D. (2019). Estrategias disposicionales y aprendizajes significativos en el aula virtual. *Revista Educación*, 2215-2644.
- García, L. (2019). Historia de la Educación a Distancia. *UNED*, 8 - 27.
- Giraldo, M. (2011). Abordaje de la Investigación Cualitativa a través de la Teoría Fundamentada en los Datos. *Ingeniería Industrial. Actualidad y Nuevas Tendencias*, 79-86.

- Gómez, V. (2020). Uso del celular como enseñanza en el aula virtual en estudiantes de educación básica en tiempos de coronavirus. *Revista de Investigación e Innovación*, 277-297.
- Gómez, V. (2021). La necesario formación del profesora universitario ante la docencia virtual. *REJIE Nueva Época*, 47-56.
- González, Y. (S.f). Multimedia en la Educación, una necesidad. *Universidad Autónoma de la ciudad de Hidalgo*, S.f.
- Grupo del Banco Mundial. (2021). *El estado de la conectividad educativa en América Latina: desafíos y oportunidades estratégicas*. Washington: Diálogo Interamericano.
- Ministerio de Educación. (s.f). *Comunicación*. Obtenido de Noticias: <https://educacion.gob.ec/se-suspende-la-asistencia-a-clases-en-las-6-provincias-en-estado-de-emergencia-y-en-7-cantones-mas/>
- Moncayo, N., Pereira, J., & González, M. (2018). Las actividades de aprendizaje y el rendimiento académico en la educación a distancia. Universidad Técnica Particular de Loja, Ecuador. *UNIMAR*, 33 - 47.
- Municipio de Guayaquil. (s.f). *Ciudadano*. Obtenido de ¿De qué se trata el proyecto Aprendamos?: <https://www.guayaquil.gob.ec/de-que-se-trata-el-proyecto-aprendamos/>
- Naciones Unidas. (18 de Marzo de 2020). *Noticias ONU*. Obtenido de Diez recomendaciones para estudiar a distancia durante la emergencia del coronavirus: <https://news.un.org/es/story/2020/03/1471342>
- Observatorio Branch. (2023). *BRANCH*. Obtenido de Estadísticas de la situación Digital en Ecuador 2021-2022: <https://branch.com.co/marketing-digital/estadisticas-de-la-situacion-digital-en-ecuador-2021-2022/>
- OCDE. (1998). *Education at a glance: OECD indicators 1998*. Washington DC: OCDE.
- Orjuela, D. (2010). Integrar las TIC al currículo en la educación media. *Revista UNAD*, 138 - 156.

- Pantoja, M., Lucero, N., Álvarez, S., & Enríquez, J. (2021). Educación y Pandemia: Desafío para los docentes de Educación Básica Superior y Bachillerato de la ciudad de Ibarra, Ecuador. *Revista Conrado*, 307-313. Obtenido de <http://scielo.sld.cu/pdf/rc/v17n81/1990-8644-rc-17-81-307.pdf>
- Pérez, I. (octubre de 2017). *Estrategias para implementar las TIC en el aula*. Medellín s.n. Obtenido de <https://definicion.mx/celular/>.
- Piriz, M., Sanabria, D. P., & Lea, G. (s.f.). Reflexión sobre las prácticas áulicas en el mundo de la virtualidad en Didáctica, Currículum y Aprendizaje II . *Seminario específicos del profesorado portugués y profesorado en Historia con Orientación en Ciencias Sociales.*, 1 - 11.
- Rando, E. (2021). La necesario formación del profesorado universitario en la docencia online. *REJIE Nueva Época*, 47-56.
- Smaniego, E. (Abril de 2020). Reflexiones sobre la educación Telemática en tiempos del Coronavirus. pág. S.f.
- Tapia, R. G. (2020). Genially como una herramienta didáctica para desarrollar la redacción creativa en estudiantes de bachillerato. *Revista Cienciamatria Interdisciplinaria de Humanidades, Educación, Ciencia y Tecnología*.
- Tecnológico Espíritu Santo. (2023). Obtenido de <https://www.tes.edu.ec/>
- UNESCO. (2002). *Aprendizaje abierto y a distancia: consideraciones sobre tendencias, políticas y estrategias*. Paris: Michael M. Moore, The Pennsylvania State University, EE.UU. Alan Tait, The Open University, Reino Unido Yuri Zaporovanny, UNESCO-IITE, Moscú, Rusia.
- Velez, E. (2020). *Gamificación en técnicas de aprendizaje mediante aulas virtuales metafóricas en educación superior modalidad en línea*. Ibarra: Universidad Técnica del Norte.
- Acosta, L., Cervantes, R., & Bustos, E. (2011). *La Educación Virtual en los inicios del siglo XXI*. México: Sociedad Cooperativa.

- Alfaro, D., Ortega, B., & Lozano, B. (2022). Aplicación del análisis de varianza para comparar el aprendizaje de los estudiantes en tres modalidades: virtual sincrónica, virtual asincrónica y presencial. *Revista Guacamaya*, 60-72.
- Canuto, L., & Souto, A. (2020). Métodos de Revisión Bibliográficas en estudios científicos. *Psicología em Revista*, 82-100.
- Cañizares, F., Quevedo, N., & García, N. (2021). Retos de la enseñanza aprendizaje virtual- Creatividad del docentes, clases sincrónicas o asincrónicas y principios didácticos . *Revista Conrado*, 331-339.
- CEPAL, OREALC y UNESCO. (2020). *La educación en tiempos de la pandemia de COVID-19*. Washington DC: UNESCO.
- Delgado, P. (23 de junio de 2020). *Observatorio para el Futuro para la Educación*. Obtenido de ¿Conoces las diferencias entre el aprendizaje sincrónico y asíncrono? ¿Sus ventajas y desventajas? Aquí las explicamos. : <https://observatorio.tec.mx/edu-news/aprendizaje-sincronico-y-asincronico-definicion/>
- Duarte, M., Montalvo, D., & Valdes, D. (2019). Estrategias disposicionales y aprendizajes significativos en el aula virtual. *Revista Educación*, 2215-2644.
- García, L. (2019). Historia de la Educación a Distancia. *UNED*, 8 - 27.
- Giraldo, M. (2011). Abordaje de la Investigación Cualitativa a través de la Teoría Fundamentada en los Datos. *Ingeniería Industrial. Actualidad y Nuevas Tendencias*, 79-86.
- Gómez, V. (2020). Uso del celular como enseñanza en el aula virtual en estudiantes de educación básica en tiempos de coronavirus. *Revista de Investigación e Innovación*, 277-297.
- Gómez, V. (2021). La necesario formación del profesora universitario ante la docencia virtual. *REJIE Nueva Época*, 47-56.
- González, Y. (S.f). Multimedia en la Educación, una necesidad. *Universidad Autónoma de la ciudad de Hidalgo*, S.f.

- Grupo del Banco Mundial. (2021). *El estado de la conectividad educativa en América Latina: desafíos y oportunidades estratégicas*. Washington: Diálogo Interamericano.
- Ministerio de Educación. (s.f.). *Comunicación*. Obtenido de Noticias: <https://educacion.gob.ec/se-suspende-la-asistencia-a-clases-en-las-6-provincias-en-estado-de-emergencia-y-en-7-cantones-mas/>
- Moncayo, N., Pereira, J., & González, M. (2018). Las actividades de aprendizaje y el rendimiento académico en la educación a distancia. Universidad Técnica Particular de Loja, Ecuador. *UNIMAR*, 33 - 47.
- Municipio de Guayaquil. (s.f.). *Ciudadano*. Obtenido de ¿De qué se trata el proyecto Aprendamos?: <https://www.guayaquil.gob.ec/de-que-se-trata-el-proyecto-aprendamos/>
- Naciones Unidas. (18 de Marzo de 2020). *Noticias ONU*. Obtenido de Diez recomendaciones para estudiar a distancia durante la emergencia del coronavirus: <https://news.un.org/es/story/2020/03/1471342>
- Observatorio Branch. (2023). *BRANCH*. Obtenido de Estadísticas de la situación Digital en Ecuador 2021-2022: <https://branch.com.co/marketing-digital/estadisticas-de-la-situacion-digital-en-ecuador-2021-2022/>
- OCDE. (1998). *Education at a glance: OECD indicators 1998*. Washington DC: OCDE.
- Orjuela, D. (2010). Integrar las TIC al currículo en la educación media. *Revista UNAD*, 138 - 156.
- Pantoja, M., Lucero, N., Álvarez, S., & Enríquez, J. (2021). Educación y Pandemia: Desafío para los docentes de Educación Básica Superior y Bachillerato de la ciudad de Ibarra, Ecuador. *Revista Conrado*, 307-313. Obtenido de <http://scielo.sld.cu/pdf/rc/v17n81/1990-8644-rc-17-81-307.pdf>
- Pérez, I. (octubre de 2017). *Estrategias para implementar las TIC en el aula*. Medellín s.n. Obtenido de <https://definicion.mx/celular/>.

- Piriz, M., Sanabria, D. P., & Lea, G. (s.f.). Reflexión sobre las prácticas áulicas en el mundo de la virtualidad en Didáctica, Currículum y Aprendizaje II . *Seminario específicos del profesorado portugués y profesorado en Historia con Orientación en Ciencias Sociales.*, 1 - 11.
- Rando, E. (2021). La necesario formación del profesorado universitario en la docencia online. *REJIE Nueva Época*, 47-56.
- Smaniego, E. (Abril de 2020). Reflexiones sobre la educación Telemática en tiempos del Coronavirus. pág. S.f.
- Tapia, R. G. (2020). Genially como una herramienta didáctica para desarrollar la redacción creativa en estudiantes de bachillerato. *Revista Cienciamatria Interdisciplinaria de Humanidades, Educación, Ciencia y Tecnología.*
- Tecnológico Espíritu Santo. (2023). Obtenido de <https://www.tes.edu.ec/>
- UNESCO. (2002). *Aprendizaje abierto y a distancia: consideraciones sobre tendencias, políticas y estrategias.* Paris: Michael M. Moore, The Pennsylvania State University, EE.UU. Alan Tait, The Open University, Reino Unido Yuri Zaporovanny, UNESCO-IITE, Moscú, Rusia.
- Velez, E. (2020). *Gamificación en técnicas de aprendizaje mediante aulas virtuales metafóricas en educación superior modalidad en línea.* Ibarra: Universidad Técnica del Norte.