

Promoting gender inclusion in education through ICT

Promoviendo la inclusión de género en la educación a través de las TIC

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Abstract

The research was conducted with a descriptive quantitative approach. The main objective is to investigate the impact of digital tools on gender inclusion and student support in their school education to enhance academic quality. Additionally, the study aims to understand the frequency and level of utilization of these technologies in educational, social, and work-related activities. To achieve the research objective and address the stated question, female students from upper secondary education were specifically selected, representing first, second, and third-grade levels, respectively. Based on the provided data, it is evident that digital technologies play a crucial role in the current educational environment, particularly among younger students. The use of ICT in the learning process is highly valued by the respondents. Most consider that ICT provides them with relevant information, knowledge, and facilitates their learning process. ICT offers a powerful means to transform education and address gender inclusion in the classroom. Its capacity to improve access to education, provide innovative learning opportunities, and promote gender equality is invaluable.

Resumen

La investigación se desarrolló con un enfoque cuantitativo descriptivo, el objetivo principal es indagar el impacto de las herramientas digitales en la inclusión de género y el apoyo al estudiante en su formación escolar para mejorar la calidad académica. Asimismo, conocer la frecuencia y el nivel de utilización de estas tecnologías en actividades educativas, sociales y laborales. Que, para lograr el objetivo de esta investigación y dar respuesta a la pregunta planteada, se seleccionaron alumnos especialmente del sexo femenino del nivel medio superior, los cuales pertenecen a los grados de primero, segundo y tercer grado respectivamente. En base a los datos proporcionados, queda claro que las tecnologías digitales juegan un papel crucial en el entorno educativo actual, especialmente entre los estudiantes más jóvenes, el uso de las TIC en el proceso de formación es ampliamente valorado por los encuestados. La mayoría considera que las TIC les proporcionan información relevante, conocimiento y facilitan su proceso de aprendizaje. Las TIC ofrecen una forma poderosa de transformar la educación y abordar la inclusión de género en el aula, su capacidad para mejorar el acceso a la educación, brindar oportunidades de aprendizaje innovadoras y promover la igualdad de género es invaluable.

Learning, Digital Divide, Education, Teaching, Social Inclusion, ICT

Aprendizaje, Brecha Digital, Educación, Enseñanza, Inclusión Social, TIC

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Introduction

These innovative tools have brought with them a world of possibilities, revolutionizing the way we access information, interact and acquire knowledge. However, their reach goes beyond simply facilitating online learning; they have also become valuable tools for addressing the issue of gender inclusion in education.

Despite the progress made in the fight for gender equality, disparities in access to education and learning opportunities for women and girls persist in many countries. Gender inequality in education remains a significant obstacle that requires attention and innovative solutions. This is where Information and Communication Technologies (ICT) play a crucial role in offering unprecedented opportunities to close this gap. ICTs are presented as an effective tool for improving access to education. Thanks to them, geographical and socioeconomic barriers can be overcome, allowing women and girls to access knowledge that would otherwise be inaccessible to them.

Online platforms and virtual courses have democratized learning, making it possible to study from anywhere and at any time, which is especially beneficial for women who face restrictions due to family responsibilities or travel.

In addition, ICTs provide new learning opportunities through more interactive and personalized didactic approaches. The diversity of multimedia resources, such as educational videos, simulations and augmented reality tools, enrich the educational experience, capturing the interest and attention of learners of all genders. By addressing different ways of learning, it ensures that each student can find his or her own path to knowledge, regardless of gender.

Another significant advantage of ICTs is their potential to promote greater gender inclusion in the classroom. By providing a virtual environment, active participation and collaboration among students is encouraged, facilitating the exchange of diverse ideas and perspectives. This is especially relevant in gender-sensitive topics, where an environment of respect and openness allows women to express themselves with confidence and without fear of judgment.

However, it is important to recognize that the effective use of ICTs to promote gender equality in education also faces challenges. The digital divide, which still exists in some places, must be addressed to ensure that all women have access to these tools. There is a need to promote digital literacy and provide technical support to ensure that no one is left behind due to a lack of technological skills.

In addition, it is essential to address entrenched gender stereotypes that could be perpetuated in online educational content. ICT should be used as a platform to challenge and eradicate bias, rather than perpetuate it. It is the task of educators and content designers to ensure that gender representations are equitable and free of harmful stereotypes.

Background: digital divide

Since the 1970s, ICTs were popularized and gradually boosted in the 1980s. This being the basis for promoting the information society in the 1990s (Gómez et al., 2018), which established the first research on the digital divide at the end of this same decade, and the phenomenon of the "gap" was attributed to the lack of computers and internet, which reflected the difference. The mastery and use of technology depends not only on the individual, but also on the opportunity, support and recognition that the community gives to this type of routines (Zapata et al., 2017). Likewise, new technologies offer the opportunity for integration towards positive gender inclusion, i.e., at the Fourth World Conference on Women held in Beijing in September 1995, its manifesto identified new technologies as an indispensable space for the struggle for equality. Given the massive use of the web and its increasing involvement in almost every aspect of our daily lives, empowering women and girls to effectively manage communications and information and communication technologies (ICTs) is considered fundamental to achieve equality in many other areas (Sanchez, 2018).

In this regard, Sunkel and Ullmann (2019), state that the World Summit on the Information Society (WSIS) aims to:

to realize the shared vision, aspirations and commitment to build a people-centered, inclusive and development-oriented information society where everyone can create, access, use and share information. Since the first summit in Geneva in 2003, ICTs have become a key tool for development, with a direct impact on education, health and human services, as well as strengthening democracy, reducing poverty and promoting innovation and economic growth (p. 245).

The digital divide is a quantitative and comparative representation of certain social developments in the use of digital media in the workplace. It is meaningless outside certain social and regional frameworks (Thirion and Zarate 2018). This indicates that the gap is not just an absolute problem, but must be analyzed in relation to other social, economic and cultural factors. For example, there may be significant differences in technology adoption between generations, genders, educational levels, or geographic areas. Understanding these relationships can help develop more personalized and effective approaches to address the gap.

Inclusion in education

Inclusion seeks the presence, engagement and success of all students, regardless of their specific characteristics. It also requires identifying and removing barriers, a process of continuous improvement, and a challenge to the educational system (Cancela, 2022). That is, inclusion in education creates revisions so that everyone has access to education and provides opportunities for instruction and inclusion for those with special abilities, making the necessary reforms in curricula, providing adequate facilities, teaching materials and teacher training (Escalante et al., 2022).

Inclusive education aims to adapt the education system to the diversity that exists in a school or school environment. It is therefore a human right that requires, first and foremost, that the authorities are willing to accept inclusive education. The State must guarantee this right and persons with disabilities must have access to education. Therefore, teachers and families must be aware of the bias that people with disabilities cannot learn like other people (Niembro et al., 2021). In recent years, inclusive education has acquired a fundamental role in education systems, based on the idea that all people have equal rights.

Therefore, it is crucial to ensure that all students, as rights holders, have guaranteed access to inclusive, equitable and excellent education (Simari-Bertagno, 2021).

In this way, integration and active participation are fundamental aspects to discuss, support, present and establish monitoring. Guaranteeing the same rights in social, educational, health, safety, labor and political areas for all people, regardless of race, religion, economic status, disability or any other difference (Plancarte, 2017), is to foster coexistence and cooperation among people of diverse backgrounds and characteristics. It is an approach that seeks to overcome barriers and divisions that may arise due to cultural, racial or economic differences. By fostering integration, it seeks that all individuals can participate fully in society and have equal opportunities to access services and resources.

Technological pedagogical tools

Since the 1990s, ICTs have attracted significant attention due to the expansion of e-learning in both developed countries in the West and Asia. The use of these technological tools has been formalized through various educational policies, even being recognized as the fourth sustainable development goal by the United Nations Educational, Scientific and Cultural Organization, with the purpose of reducing educational gaps worldwide (Cabrera-Calle and Ochoa-Encalada, 2021).

Therefore, the use of these didactic tools constitutes a means of change given the current negative notions of social values such as cooperation, solidarity and consensus. However, cooperative learning and dialogic communication strategies also have a positive side, related to social integration and inclusion, linked to the development of fundamental skills to overcome current barriers and problems of coexistence (Carrasco-Mullins and Villero, 2022).

Thus, immersing subjects in the formal educational process facilitates access to formal information and, in addition to strengthening their decision-making skills, they can also be trained in the use of this information, which means having access to digital information literacy mechanisms (Ordoñez, 2021).

To consider the above, the association of ICTs in the educational process provides a more active learning dynamic for both teachers and students, since the teacher also learns by teaching. In addition, the increasing use of ICT in projects, assignments and exercises in class will drive a higher level of competitiveness in the educational environment (Molinero and Chávez, 2019). Finally, these tools bring value to the development of virtual environments that have as their main objective to constantly motivate and stimulate students to continue with their university studies. The planned spaces, known as Virtual Environments, are used to improve the results in the teaching-learning process (Medina, 2021).

Research objective

To investigate the impact of digital tools on gender inclusion and student support in their school education to improve academic quality. Also, to know the frequency and level of use of these technologies in educational, social and work activities.

Research question

From the above, and derived from the main objective, the following research question is developed:

How can digital tools contribute to the development of skills and strengths in women, improving the quality and efficiency in their daily academic activities?

Methodology

The research was developed with a descriptive quantitative approach, that is, it is carried out when it is desired to describe, in all its main components, a reality. In addition, it is the objective collection of data that focuses mainly on numbers and values. The results of the quantitative approach are obtained using statistical and numerical analysis methods such as age, shape, weight, volume, scale, etc. (Alban et al., 2020), which, in order to achieve the objective of this research and answer the question posed, students were selected especially of the female sex of the upper secondary level, which belong to the first, second and third grade respectively.

Sample

To determine the sample, the stratified random sampling technique with proportional allocation was used, that is, from this sampling each stratum is of homogeneous type with respect to the characteristics to be studied, in this way, a subsample is taken from each stratum through a simple random procedure (Porrás, 2017), obtaining 100 students.

Data collection and processing

For data collection, a survey structured by closed-ended questions was applied. The SPSS statistical program was used to process the information, analyzing the data by means of contingency tables, and thus interpreting the results obtained by means of graphs.

Results

Thus, different age ranges are presented: 15 to 25 years, 26 to 35 years, 36 to 45 and 46 to 50 years. Being the 15 to 25 years (67%) the most preponderant, it is observed that most students are young people who interact in an environment of digital technologies inside and outside the institution.

The information provided shows the percentage of students who make use of technologies (such as computer, internet, programs, email, social networks, etc.) in different years of study. In the first year, 47% of students use technologies. In the second year, this percentage decreases to 20%, while, in the third year, 33% of students make use of technologies. Table 1 clearly shows the distribution of these data for each year of study.

Year of study	Uses technologies (%)
First year	47%
Second year	20%
Third year	33%

Table 1 Do you make use of technologies?

Source: own elaboration

The information shows the percentage of students in each year of study who use the Internet for consultations and homework in different places. The data are presented sorted by the places of internet use (home, school, cybercafés, work and other places) and the corresponding percentages for the first, second and third year of study.

In the first year, most students (43%) use the Internet at home, while only a small percentage (3%) use it in Internet cafes, and 1% at work. Internet use at school and elsewhere is not reported for the first year. In the second year, internet use at home decreases significantly to 14%, while use in cybercafés remains at 3%. There is also an increase in internet use at work, reaching 2%, and 1% use at school. In the third year, Internet use at home increases again, reaching 27%, while Internet café use increases significantly to 10%. Internet use at school and elsewhere remains at 1% for both cases. In general, Table 2 clearly shows how the place of internet use for consultations and homework changes as students advance in their university studies. Home is the most frequent place in all years, followed by Internet cafes and, to a lesser extent, work and school. Other places have a very low percentage of use in all years.

Location of Internet Use	First year (%)	Second Year (%)	Third Year (%)
At home	43%	14%	27%
At school	0%	1%	1%
In Internet cafes	3%	3%	10%
At work	1%	2%	0%
Other places	0%	0%	1%

Table 2 Where do you use the Internet for consultation and homework?

Source: Own elaboration

The information provided shows the type of equipment that students in each year of study have (desktop, laptop, tablet, mobile and other). In the first year, 17% of the students have a desktop computer, while 11% have a laptop and 2% have a tablet. On the other hand, 13% use their mobile as a computer. Only a small percentage of 2% use other types of equipment. In the second year, the percentages of students who have a desktop and a laptop decrease to 6% and 7%, respectively.

Tablet and mobile use also decreased, reaching 3% and 2%, respectively. The use of other types of equipment is not reported for the second year. In the third year, the percentage of students with a desktop computer increases again to 10%, while the use of a laptop increases to 13%. Tablet use disappears (0%), while mobile use remains at 8%. Use of other types of equipment is not reported for the third year.

Table 3 shows how the type of equipment students have varies as they advance in their university studies. Desktop and laptop are the most common in all three years, while tablet use is less frequent. The use of cell phones is maintained in all years, and in the third year, the use of other types of equipment is not reported.

Type of Technological Equipment	First Year (%)	Second Year (%)	Third Year (%)
Desktop Equipment	17%	6%	10%
Laptop	11%	7%	13%
Tablet	2%	3%	0%
Mobile	13%	2%	8%
Other type	2%	0%	0%

Table 3 Type of technological equipment

Source: own elaboration

The frequency with which students use a computer during their studies. The majority of students (33%) use a computer every day for their academic activities. Sixteen percent use it once a week, while 43% use it two to three times a week. Only a small percentage of students, 1%, use it monthly, and 7% use it rarely.

Table 4 shows that most students use a computer quite frequently for their studies, either daily or several times a week. This suggests that the use of technology is an integral part of their academic activities. However, it is also observed that there is a small percentage of students who use the computer less frequently, which may be due to different reasons such as personal preferences or limitations of access to technology.

Frequency of Use of Computer Equipment	Percentage (%)
Every day	33%
Once a week	16%
Two to three times a week	43%
Monthly	1%
Rarely	7%

Table 4 Frequency of use of technological equipment

Source: Own elaboration

The frequency of use of different Internet services by respondents. The Internet services (e-mail, chats, websites and digital resource downloads) and the corresponding percentages are shown.

According to the survey results, 18% of the respondents frequently use e-mail services, while 45% make frequent use of chats. Thirty-four percent use websites regularly, and only a small percentage of 3% frequently use downloads of digital resources. Table 5 clearly shows the preference in the use of Internet services by the respondents. Chat rooms are the most used service with a high percentage, followed by websites. E-mail is also frequently used, although to a lesser extent compared to chats and websites. On the other hand, downloads of digital resources are used less frequently by respondents.

Internet Service	Percentage of Use (%)
E-mail	18%
Chats	45%
Sitios web	34%
Descargas de recursos digitales	3%

Table 5 Frequently used services

Source: Own elaboration

Which social networks do respondents constantly connect to (Facebook, Google, YouTube, Instagram, WhatsApp and other type of social network). According to the survey results, the majority of respondents (83%) constantly connect to Facebook, making it the most used social network. Google is the second most used social network with 6%, followed by YouTube with 3%. Instagram and WhatsApp are constantly used by 1% and 5% of respondents, respectively. A small percentage of 2% constantly connect to another type of social network.

Table 6 clearly shows the preference and frequency of use of different social networks by respondents. Facebook is the most popular and used platform by far with respect to the other social networks. Google and YouTube are also used, although to a lesser extent. Instagram and WhatsApp have a constant use, although at a lower percentage, and only a small group of people use other social networks frequently.

Social Network	Constant Connection Percentage (%)
Facebook	83%
Google	6%
YouTube	3%
Instagram	1%
WhatsApp	5%
Another social network	2%

Table 6 Which social networks do you constantly connect to?

Source: Own elaboration

According to the students' responses, the majority (71%) consult education-related information on the Internet, which indicates that they use this tool to complement their studies and search for educational resources. Scientific information is consulted by 8% of the students, while 11% search for information of a social nature. To a lesser extent, 2% of students search for information on business and politics.

In addition, a small percentage of 6% search for other types of information not specified in the previous categories. Thus, Table 7 clearly shows which are the topics of greatest interest to students when consulting information on the Internet. Education ranks first with a significant difference with respect to the other types of information, followed by social and scientific information. Business and politics are less frequently consulted compared to the other types of information.

Type of Information	Consultation Percentage (%)
Education	71%
Scientific Information	8%
Social Information	11%
Business	2%
Policy	2%
Other information	6%

Table 7. What kind of information do you consult on the Internet?

Source: Own elaboration

Do you use the computer to develop team tasks, a small percentage of 7% never use the computer for team tasks. The majority of students, 35%, do it occasionally and another 35% do it constantly. In addition, 23% of the students use the computer very constantly for teamwork. Table 8 clearly shows how students' use of the computer for teamwork varies. The majority use it constantly or occasionally, while a small percentage never use it or use it very constantly. This indicates that the computer is a widely used tool for teamwork, but its use varies according to students' individual preferences and needs.

Use of Computer for Team Tasks	Percentage of Students (%)
Never	7%
Occasionally	35%
Constantly	35%
Very Consistent	23%

Table 8 Do you make use of the computer to develop team tasks?

Source: Own elaboration

Do you use communication tools such as chats, forums, instant messaging, etc., a small percentage of 11% never use these communication tools. The majority of respondents, 39%, use them occasionally, indicating that they use them on certain occasions, but not on a constant basis. In addition, 31% use them constantly, suggesting frequent and regular use. On the other hand, 19% of respondents use them very constantly, indicating intensive and regular use of these tools.

Table 9 clearly shows how the use of communication tools varies among respondents. While the majority use them occasionally or constantly, a small percentage never use them, and another significant percentage use them very constantly. This suggests that communication tools are an important part of communication and collaboration for many of the respondents, but there are also differences in their use according to individual preferences and needs.

Use of Communication Tools	Percentage of Users (%)
Never	11%
Occasionally	39%
Constantly	31%
Very Consistent	19%

Table 9 Do you use communication tools such as chats, forums, instant messaging, etc.?
Source: Own elaboration

Which of these programs do you constantly use for academic activities? According to the students' responses, 38% constantly use a word processor to carry out their academic activities, suggesting that this type of program is essential for tasks such as writing essays and written work. Thirty percent use electronic presentations consistently, indicating that these are widely used to present information in the academic environment. Spreadsheets are used consistently by 11% of students, suggesting that this type of program is useful for performing calculations and data analysis. Only a small percentage of 2% use databases consistently in their academic activities. In addition, 19% of the students use other types of programs constantly.

Table 10 clearly shows how the use of programs for academic activities varies among students. Word processors, electronic presentations and spreadsheets are the most consistently used programs, while databases are used much less frequently. In addition, a significant group of students use other types of programs on a consistent basis, which may reflect the diversity of needs and preferences in the academic environment.

Academic Activities Program	Percentage of Constant Use (%)
Word processor	38%
Spreadsheets	11%
Electronic presentations	30%
Databases	2%
Other types of programs	19%

Table 10 Which of these programs do you consistently use for academic activities?
Source: Own elaboration

According to the answers obtained, 33% of the respondents consider that ICTs provide them with relevant information in their training process. This suggests that digital technologies provide access to a vast amount of data and educational resources that are useful for learning. 29% of the respondents mention that ICTs provide them with knowledge. This indicates that technological tools enable them to acquire new knowledge and understanding of study topics. 23% of the respondents highlight that ICTs facilitate the learning process. This implies that digital technologies make learning more accessible, interactive and self-directed. In addition, 15% of the respondents mention that ICTs provide them with other types of reinforcement.

Table 11 clearly shows how ICTs provide different benefits in the training process according to the perception of the respondents. This reinforces the idea that digital technologies are a valuable tool that can enrich and improve the educational experience of students, providing access to relevant information, new knowledge, ease of learning and other additional benefits.

Contribution of ICTs to the Training Process	Percentage of Responses (%)
Information	33%
Knowledge	29%
Ease of learning	23%
Other type of reinforcement	15%

Table 11 What do ICTs contribute to your training process?
Source: Own elaboration

Are technologies important for your current academic performance, a small percentage of 7% consider that technologies are not important for their academic performance, suggesting that these students do not see significant value in the use of technologies in their studies. Some 4% of respondents mention that technologies are of little importance to their academic performance. This indicates that for some students technologies may have some degree of relevance, but are not a determining factor in their academic success.

A large percentage of 45% consider that technologies are important for their academic performance. This reflects that a considerable group of students value the use of technologies as a useful and relevant resource for their learning activities. In addition, 44% of the respondents consider technologies to be very important for their academic performance. This suggests that a significant portion of students see technologies as a fundamental and essential element in their training process. Table 12 clearly shows how opinions on the importance of technologies vary among respondents. While a large proportion consider them to be important or very important, a small percentage do not give them as much relevance in their academic performance. This indicates that perceptions about the role of technologies in education may differ according to the individual needs and preferences of the students.

Importance of Technologies for Academic Performance	Percentage of Responses (%)
Nothing important	7%
Not very important	4%
Important	45%
Very important	44%

Table 12 Are technologies important to your current academic performance?

Source: Own elaboration

Discussion

Based on the data provided, it is clear that digital technologies play a crucial role in today's educational environment, especially among younger students. The fact that the 15-25 age group is the most preponderant in the study reflects how this generation has grown up in a highly technological world and has quickly adopted digital tools in their daily lives.

The use of the Internet for consultations and homework is more frequent at home, suggesting that students prefer to carry out their academic activities in a comfortable and familiar environment. However, there is also an increase in internet use in internet cafes and at work during the second year of study, indicating that some students may rely more on these places to access the internet.

The type of equipment used by students also evolves over time. In the first year, laptops are more common, but in the third year, the use of desktops increases again. It is likely that this variation is due to the mobility and changing needs of students as they progress through their studies.

In terms of social networks, Facebook stands out as the most used, with a large majority of respondents connecting constantly. Google and YouTube also have a significant presence, suggesting that these services are well integrated into students' daily lives for activities such as searches and multimedia content.

The use of ICT in the training process is widely valued by respondents. Most consider that ICTs provide them with relevant information, knowledge and facilitate their learning process.

On the other hand, a small percentage of students do not see significant value in the use of technologies, which highlights the importance of finding an appropriate balance in the integration of ICT in the educational environment. It is essential to consider the individual needs of students and ensure that technologies are not used as a mere replacement for traditional methods, but as an effective tool to enhance the learning process.

Conclusions

In conclusion, ICTs offer a powerful way to transform education and address gender inclusion in the classroom. Their ability to improve access to education, provide innovative learning opportunities and promote gender equality is invaluable. However, for ICTs to truly become agents of positive change, these tools must be used judiciously and responsibly to overcome challenges such as digital divides and gender stereotypes.

In addition, inclusive education helps to increase diversity in the classroom, which has a positive impact on learning. Exposure to diverse perspectives and experiences enriches discussions and stimulates critical thinking, preparing students for an increasingly global and multicultural world. In addition, inclusive education is not only about providing educational opportunities, but more importantly, it is about ensuring the quality of education. Teaching methods that focus on the needs and abilities of each student and promote meaningful learning and active participation must be promoted.

In summary, most of the students surveyed demonstrate a high adoption of digital technologies in their academic and daily lives. ICTs are considered useful and valuable for learning and are frequently used for team tasks, communication, access to educational resources and development of academic activities. However, it is important to continue to evaluate and adapt the use of technologies in the educational environment to ensure that they contribute positively to students' academic performance and personal growth.

References

- Alban, G. P., Arguello, A. E. y Molina, N. E. (2020). Metodologías de investigación educativa (descriptivas, experimentales, participativas, y de investigación-acción). *Revista Recimundo*, 4(3), 163-173. Doi: 10.26820/recimundo/4.(3).julio.2020.163-173
- Cabrera-Calle, D. G. y Ochoa-Encalada, S. C. (2021). Herramientas tecnológicas y educación activa: Aprendizajes y experiencias desde una perspectiva docente. *Episteme Koinonia*, 4(8), 265-278. Doi: <https://doi.org/10.35381/e.k.v4i8.1356>
- Cancela, V. (2022). Desigualdades digitales en secundaria en emergencia sanitaria. Una mirada desde la educación inclusiva. *Revista de Ciencias Sociales*, 35(51), 63-79. Epub 01 de diciembre de 2022. <https://doi.org/10.26489/rvs.v35i51.3>
- Carrasco-Mullins, R. y Villero, M. F. (2022). TIC, globalización y educación: triada emergente en el nuevo orden social. *Delectus, Revista Científica-INICC-PERÚ*, 5(1).
- scalante, A., Villafuerte, C. A. y Escalante, R. (2022). La inclusión en la educación. *Revista de Investigación en Ciencias de la Educación. Horizontes*, 6(25), 1663-1678. <https://doi.org/10.33996/revistahorizontes.v6i2.5.444>
- Gómez, D. A., Alvarado, R. A., Martínez, M. y Díaz de León, C. (2018). La brecha digital: una revisión conceptual y aportaciones metodológicas para su estudio en México. *Entreciencias: Diálogos en la Sociedad del Conocimiento*, 6(16), 49-72. <https://doi.org/10.22201/enesl.20078064e.2018.16.62611>
- Medina, A. J. (2021). Herramientas tecnológicas en la gestión docente del proceso de formación plan la universidad en casa y educación a distancia. *Revista Universidad y Sociedad*, 13(4), 258-266.
- Molinero, M. C. y Chávez, U. (2019). Herramientas tecnológicas en el proceso de enseñanza-aprendizaje en estudiantes de educación superior. *Ride, Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, 10(19). <https://doi.org/10.23913/ride.v10i19.494>
- Niembro, C. A., Gutiérrez, J. L., Jiménez, J. A. y Tapia, E. E. (2021). La inclusión educativa en México. *Revista Iberoamericana de Ciencias*, 8(2), 43-51.
- Ordoñez, W. A. (2021). La inclusión de las TIC como herramientas educativas actuales capaces de reformar la manera de aprender y enseñar en las escuelas secundarias del sureste de México. *Sintaxis*. 10.36105/stx.2020n4.07
- Plancarte, P. A. (2017). Inclusión educativa y cultura inclusiva. *Revista Nacional e Internacional de Educación Inclusiva*, 10(2), 213-226.
- Porras, A. (2017). Tipos de muestreo. Repositorio CentroGeo, Centro Público de Investigación CONACYT. <https://centrogeo.repositorioinstitucional.mx/jsp/ui/bitstream/1012/163/1/19Tipos%20de%20Muestreo%20%20Diplomado%20en%20Análisis%20de%20Información%20Geoespacial.pdf> (consulta 16 febrero 2023).

Sánchez, F. (2018, 5 febrero). TIC y género: hacia una educación tecnológica no sexista. *Emtic, educación, metodología, tecnología, innovación, conocimiento*. <https://emtic.educarex.es/220-foro-de-nativos-digitales/3026-tic-y-genero1> (consulta 30 julio 2023).

Simari-Bertagno, M. V. (2021). El desafío de la inclusión educativa (Tesis de Licenciatura). Pontificia Universidad Católica Argentina, Mendoza, Argentina. <https://repositorio.uca.edu.ar/bitstream/123456789/12460/1/desafio-inclusion-educativa.pdf> (consulta 30 julio 2023).

Sunkel, G. y Ullmann, H. (2019). Las personas mayores de América Latina en la era digital: superación de la brecha digital. *Revista CEPAL*, N° 127, 244-268. https://repositorio.cepal.org/bitstream/handle/11362/44580/1/RVE127_Sunkel.pdf (consulta 30 julio 2023).

Thiri6n, J. M. y Z6rate, J. E. (2018). La brecha digital y la importancia de las tecnolog6as de la informaci6n y la comunicaci6n en las econom6as regionales de M6xico. *Realidad, Datos y Espacio Revista Internacional de Estadística y Geograf6a*, 9(2), 38-53.

Zapata, C., Arra6za, P., Ferreira da Silva, E. y Soares, E. C. (2017). Desaf6os de la inclusi6n Digital: antecedentes, problem6ticas y medici6n de la Brecha Digital de G6nero. *Psicolog6a, Conocimiento y Sociedad*, 7(2), 162-198.