



## Scientific publications on distance education and its characteristics (Publicaciones científicas sobre educación a distancia y sus características)

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**Abstract . Introduction:** Distance education as a relevant educational modality motivates its study, by offering educational alternatives in environments with limited physical access. **Objective:** to analyze the scientific publications issued between 2017 and 2022 related to the topic of distance education and its characteristics. **Methodology:** descriptive documentary review with review of articles, theses and books published between 2017 and 2022, through academic search engines such as Google Scholar and Redalyc ; the sample was 325 documents. **Results:** most research was published between 2021 and 2022 (61%), 66% are qualitative and 79% are descriptive studies; 55% of the final research analyzed focus on distance education. **Conclusion:** There is an increase in the production of studies related to the topic of study, between 2020-2021, with qualitative descriptive studies standing out, which reflects the interest in knowing the experiences in distance learning environments. **Keywords:** documentary review, distance education, scientific publication, scientific article

### Publicaciones científicas sobre educación a distancia y sus características

**Resumen. Introducción:** la educación a distancia como modalidad educativa de relevancia motiva a su estudio, al ofrecer alternativas educativas en entornos con acceso físico limitado. **Objetivo:** analizar las publicaciones científicas emitidas entre 2017 y 2022 relacionadas con la temática de educación a distancia y sus características. **Metodología:** revisión documental descriptiva con revisión de artículos, tesis y libros publicados entre 2017 y 2022, a través de buscadores académicos como Google Académico y Redalyc; la muestra fue de 325 documentos. **Resultados:** la mayoría de investigaciones se publicaron entre 2021 y 2022 (61%), el 66% son de corte cualitativo y un 79% son estudios descriptivos; el 55% de investigaciones finales analizadas se enfocan en la educación a distancia. **Conclusión:** existe incremento de la producción de estudios vinculados al tema de estudio, entre 2020-2021, sobresaliendo los cualitativo descriptivos, lo que refleja el interés por conocer las experiencias en entornos de aprendizaje a distancia.

**Palabras clave:** revisión documental, educación a distancia, publicación científica, artículo científico

### Publicações científicas sobre educação a distância e suas características

**Resumo. Introdução:** a educação a distância como modalidade educacional relevante motiva seu estudo, pois oferece alternativas educacionais em ambientes com acesso físico limitado. **Objetivo:** analisar as publicações científicas editadas entre 2017 e 2022 relacionadas ao tema educação a distância e suas características. **Metodologia:** revisão documental descritiva com análise de artigos, teses e livros publicados entre 2017 e 2022, por meio de mecanismos de busca acadêmica como Google Scholar e Redalyc; a amostra foi de 325 documentos. **Resultados:** a maioria das pesquisas foi publicada entre 2021 e 2022 (61%), 66% são qualitativas e 79% são estudos descriptivos; 55% das pesquisas finais analisadas têm como foco a educação a distância. **Conclusão:** há um aumento na produção de estudos vinculados ao tema de estudo entre 2020-2021, com destaque para os estudos descriptivos qualitativos, o que reflete o interesse em conhecer experiências em ambientes de ensino a distância.

**Palavras-chave:** revisão documental, educação a distância, publicação científica, artigo científico, trabalho científico





## I. Introduction

Over the past 50 years, the issue of limited access to education in Guatemala has been a topic that has generated strong debates between academic and government authorities. Added to this context, a new issue arose at the end of 2019 and beginning of 2020 the global emergency of Covid-19, which according to the ( United Nations Educational, Scientific and Cultural Organization [UNESCO], 2020) came to show various weaknesses and vulnerabilities such as inequality, the risks of privatization of education and the lack of preparation for a migration to distance education.

For his part, Lorenzo García (2021) mentions that this health emergency It caused the closure of educational establishments in more than 200 countries, which increased the access gap, thereby reducing the possibility for many students from vulnerable or already vulnerable populations to continue their educational development.

For his part, Quintana Avello (2020) mentions that, in the impossibility of continuing face-to-face education, the various educational institutions turned their interest towards distance education, which was already supported by technological support, and basically by the Internet. And it is in this hasty turn, due to the emergency, that Ruiz Mendoza et al. (2021) point out that an unforeseen step is taken towards externalized emergency distance education in situations where the necessary technological infrastructure is not available to carry out a virtual distance learning process.

Mendoza Castillo (2020) cites before the pandemic, there was an educational scenario in which the student and the teacher were accustomed to a schedule of activities, a planning and a rhythm that considered contents and time loads appropriate to face-to-face education, however, this was modified and it was necessary to adapt to the aforementioned distance education, which, although not perfect, represents an outstanding educational modality to date.

Distance education differs significantly from face-to-face education in several aspects, as cited by Bailey Williams et al. (2020) it allows access to the benefits of educational technology, overcoming time and space limitations, the possibility of studying in teams without being in the same physical space. In addition, Nagua Suing (2018) cites that this modality encourages flexibility in learning, two-way communication and communication in groups.

On the other hand, Torres Zerquera et al. (2022) cite that distance education has forced the use of technology and the need to use the internet, as well as the use of spaces outside the classroom, the management of virtual learning environments and the specific preparation of teaching materials.

Likewise, the technology used in this type of education, as defined by Chaves Torres (2017), can be focused on the technology itself, on pedagogical issues, on student learning, or on the interactions of all these variables. And this is where the virtual classroom is generated, which according to García Sánchez and Jáuregui Arias (2019) is a site that has a graphical interface that, supported by a database (platform), can manage the pedagogical and academic process of the classroom, as well as the administrative activity that accompanies the training process.

It is then that, due to the previously seen context, the importance of carrying out a study on how extensively researchers have addressed the topic in recent years, the relevance within their research theme and the focus and design of the studies carried out on the subject is seen.

The work modality used in this academic activity is the documentary review, as Gómez Luna et al. (2014) says , it corresponds to the detailed description of a given topic but does not involve trends. Guirao Goris (2015) defines that this implies a synopsis that summarizes various studies and articles that present the current state of a topic to be investigated.

This is how this literature review, as suggested by Guirao Goris et al. (2008), will consist of the stages of defining the review, the bibliographic search, the organization of the information and finally the writing of the article.





Given the relevance of this topic, this article seeks to analyze the scientific publications carried out between 2017 and 2022, which are related to the topic of "distance education and its characteristics", which reflect the number of documents with studies linked to this educational modality, and at the same time, establish the relevance with which they study the characteristics of distance education, and the approach and design of the study that was carried out.

## II. Methodology

A systematic and descriptive documentary review was carried out in which three variables of the research works published between 2017 and 2022 are described and which are reflected in articles, theses and books from that period of time, and which are also available in databases on the Internet, such as Google Scholar and Redalyc. The sample of documents analyzed was 325 scientific manuscripts. In the exploration, search equations were not used but rather delimiting search keywords, these being: "advantages of distance education, disadvantages of distance education, benefits of distance education and limitations of distance education."

The study included only information from the three types of documents cited, which were published in Spanish and which clearly and consistently explained the inherent characteristics of distance education. The variables studied in the selected works were: frequency of publication, depth of development of the topic and study design. The studies were reviewed by the researcher, entered into Excel tables and expressed in frequency tables and contingency tables.

## III. Results

The results of the documentary review are based on the 325 documents originally collected from the two databases used; a first content review (title and abstract) is carried out, from which 258 studies are obtained, which subsequently go on to a second analysis, which consists of reading the entire document, with which 38 selected investigations are finally reached.

Of the 325 documents, 67 publications were excluded for not meeting the basic criteria of being a research article, thesis or book, or for being a repeated publication. As such, the sample derived from the first review, that is, 258 documents, is distributed as follows: 53% are scientific articles, 39% are degree theses and 8% are books.

The articles in this phase come from various types of scientific journals, and the theses consulted come from various Latin American universities and correspond to undergraduate and graduate studies; while the books belong to independent authors and higher education institutions.

Of the 258 documents, 47 are articles from scientific journals. Of these consulted journals, 6% were published in 2018, 6% in 2019, 9% in 2017, 11% in 2020, 13% in 2022 and 15% in 2021. The remaining 40% are journals published outside the study period and which were not properly filtered by the two search engines used.

Regarding the theses found (26), in those 258 documents, they are distributed as follows: 2 published in 2017, 4 in 2018, 3 in 2019, 4 in 2020, 4 in 2021 and 4 in 2022. The remaining 5 theses are documents outside the study period and that were not properly filtered by the two search engines used. Regarding the books, these represent 3% and correspond to 1 book published in 2019, 2 in 2020, 2 in 2021 and 2 in 2022. Similarly, the 258 potentially relevant documents are analyzed by reading their introductions and conclusions, thus excluding 220 documents that are considered not to meet the criteria of: being published in the study period, dealing with the topic of distance education and its characteristics, being published in Spanish and being able to be accessed through its repository.

The determination of the status of the filtered and selected documents is based on the following criteria:

The publication that "does not address the research topic" is one that, despite having been filtered by the search engine, does not mention or practically does not mention the characteristics of the distance education modality, so that it does not cite any advantages, disadvantages, benefits or limitations





inherent to it. The publication that “deals very little with the research topic” is the one that mentions the characteristics of the distance education modality in a couple of paragraphs of the study, but without going into them in depth.

The publication that “addresses the research topic” is one that has as its main theme the inherent characteristics of the distance education modality or makes an important description of these in the introduction section or theoretical framework of the article, book or thesis. The rest of the statuses are understandable by their mere mention.

The 38 documents selected after the second review are as follows:

**Table 1** *Distribution by type of document in the second phase of review*

Document type	Amount	%
Article	23	61
Thesis	14	37
Book	1	2
<b>Total</b>	<b>38</b>	<b>100</b>

*Note:* Most of the studies that reach the final phase are articles (61%) from various Spanish-language journals, while in second place, with 37% participation, are degree theses.

**Table 2** *Distribution by academic search engine in the second phase of review*

Seeker	Amount	%
Google Scholar	34	89
Redalyc	4	11
<b>Total</b>	<b>38</b>	<b>100</b>

*Note:* Most of the studies that reach the final phase come from the Google Scholar database (89%), while 11% come from the Redalyc database.

**Table 3** *Distribution by publication date in second phase of review*

Publication date	Amount	%
2017	4	11
2018	4	11
2019	5	13
2020	2	4
2021	14	37
2022	9	24



**Total****38****100**

*Note.* The trend of scientific publications issued has increased between 2021 and 2022, a time in which the Covid19 health crisis had a strong impact.

Regarding the relevance of the study analyzed, the criteria selected for its evaluation are based on the fact that “distance education and its characteristics” are or are not the priority topic of the analysis of the manuscript.

It is established that in research with a qualitative approach (25) in addition to the topic of distance education and its characteristics, 60% of them share their relevance with one of the following topics: the history of education in Argentina, the network university, the influence of education on the student, the design of the educational model, the factors that influence education, the educational experience, the influence of the Covid-19 pandemic, the use of digital tools, teacher perception in education, the educational implementation plan, the capacity of teachers in the distance modality, student retention and teaching practice.

On the other hand, in 24% of the qualitative manuscripts (6), where distance education is a secondary topic, the main theme of the document is related to: the perception of education in prisoners, the theoretical bases of an instructional model, proposal for the implementation of an educational model, sense of justice in basic education teachers, and open education. While in 12% of the cases (3), “distance education and its characteristics” is the subject of study of the manuscript. And finally, in 4% of manuscripts, the themes of “disruption, quality, adaptability and mobility” accompany that of distance education.

**Table 4** *Distribution of study documents (38) according to their research approach, scope and design*

Research approach	Scope-study design	Frequency	%
Qualitative	Descriptive-Ethnographic	1	
	Descriptive-Phenomenological	23	
	Design Thinking	1	
<b>Qualitative total</b>		<b>25</b>	<b>66</b>
Quantitative	Descriptive-Quasi-experimental	2	
	Descriptive-Non-experimental	4	
	Exploratory-Non-experimental	2	
	Correlational-Non-experimental	2	
<b>Total quantitative</b>		<b>10</b>	<b>26</b>
<b>Total mixed</b>	<b>Mixed</b>	<b>3</b>	<b>8</b>
<b>Total</b>		<b>38</b>	<b>100</b>





*Note:* Most of the studies are qualitative (66%), quantitative studies represent 26% while mixed studies represent 8% of the total.

Based on the information obtained, the topics specific to this bibliographic research can be discussed:

The results of the first review filter show that the production of studies grew during the pandemic period, with this growth being more clearly visible in the second and third years of the health crisis (2021 and 2022, respectively). It is likely that the same emergency condition motivated researchers to give priority to the topic of distance education due to social distancing and the search for viable solutions that would promote the continuity of educational processes.

The analysis developed must be added to the fact that there is an increase in studies published between 2021 and 2022, which goes from an average of 3.75 manuscripts/year (2017-2020) to 11.50 manuscripts/year in the period 2021-2022, which confirms the increase in interest in the subject during the second and third years of the pandemic.

In another aspect, such as the relevance that studies give to the topic of “distance education and its characteristics”, the tendency is seen that, in most research (55%), the study of “distance education and its characteristics” is prioritized together with another topic linked to the educational process (connectivity, technology, viability, among others), while in 24% of manuscripts it is treated as a secondary topic, which complements the main theme of the research. Only 18% of the total manuscripts prioritize “distance education and its characteristics” in their analysis. This behavior is understandable when considering that the implementation of distance education entails the link with other areas and activities inherent to the teaching-learning process.

Finally, the analysis of these documents reflects a 2.5:1 ratio in the production of qualitative/quantitative studies, with the tendency being to carry out qualitative studies in 66% of cases and quantitative studies in only 26%. The most complete studies, such as the mixed ones (8%), show a low level of documentary production.

#### **IV. Discussion**

As mentioned by González-Zamar et al. (2021), the Covid-19 pandemic has generated a significant increase in scientific publications at all levels, being most notable in the field of medicine (40.1%), followed by the social sciences (6.4%), which includes education, out of a total of 656 manuscripts generated in the period from 2019 to early 2020. In addition, the study shows that the most representative keywords are Covid-19, pandemic, virus, education, and pedagogy. This ties in with the trend seen in the present study where the increase occurs between 2020 and 2021.

The results obtained in this bibliographic review also coincide with the trend shown by the mixed study by Gómez Velasco et al. (2021), which indicates that the WoS database found 793 articles on education in pandemic, published between 2020 and 2021, which reflects an increase in studies on this topic in said period, in world-class institutions mainly in English, Spanish and Portuguese, whose main topics of emphasis are students and education (keywords).

Similarly, in this same study by Gómez Velasco et al. (2021), the Dialnet database is used, with greater coverage in Latin America, with 504 results, of which 404 come from articles, books and theses, and which were mostly (78%) published in 2020 and 18% in the first months of 2021. In this database, the outstanding topics in the included studies are COVID and Education (keywords); it is also relevant because it is linked to the research by Quispe, RRL (2022).

It is also important to consider the systematic review by Marrufo-Rojas DR, et. al. (2024) which provides an overview of current research on autonomous learning in distance education in Psychopedagogy during COVID-19. Areas for future research are identified, such as the analysis of the effectiveness of different teaching strategies to encourage autonomous learning and the study of students' experiences in this context.





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## V. Conclusions

In the period analyzed, there is a growing evolution of studies related to the distance education modality, starting in 2017, with a notable increase in 2021. This may be related to the challenges of the Covid-19 pandemic that caused the need to look for educational alternatives, proposing that the distance modality take on special relevance. Another outstanding point, in addition to the increase in the number of research projects in which the study topic is distance education (period 2021-2022), is the increase in topics focused on teaching-learning processes, which, being linked to the educational process, accompany the research of this educational modality.

Now, in terms of the research approach carried out, qualitative and quantitative studies show an increase in number between 2020 and 2021, as does mixed research, but to a lesser extent. The preference for qualitative approaches in research methodology reflects the interest in understanding in depth the subjective aspects of distance education, which in turn can be related to the need to further study the experiences of students and teachers in distance learning environments.

On the other hand, the high proportion of descriptive studies suggests a preponderance in the collection and analysis of existing data that support the understanding of the current status of distance education.

Given the increasing and constant progress of distance education, as well as the challenges it faces, research in this area continues to be imperative, thus requiring additional studies that address specific issues related to the modality and thus, improve the practices and tactics with which the changing needs of education are met.

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#### Declaration of informed consent

The study was carried out in compliance with the Code of Ethics and Good Editorial Practices for Publishing.

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